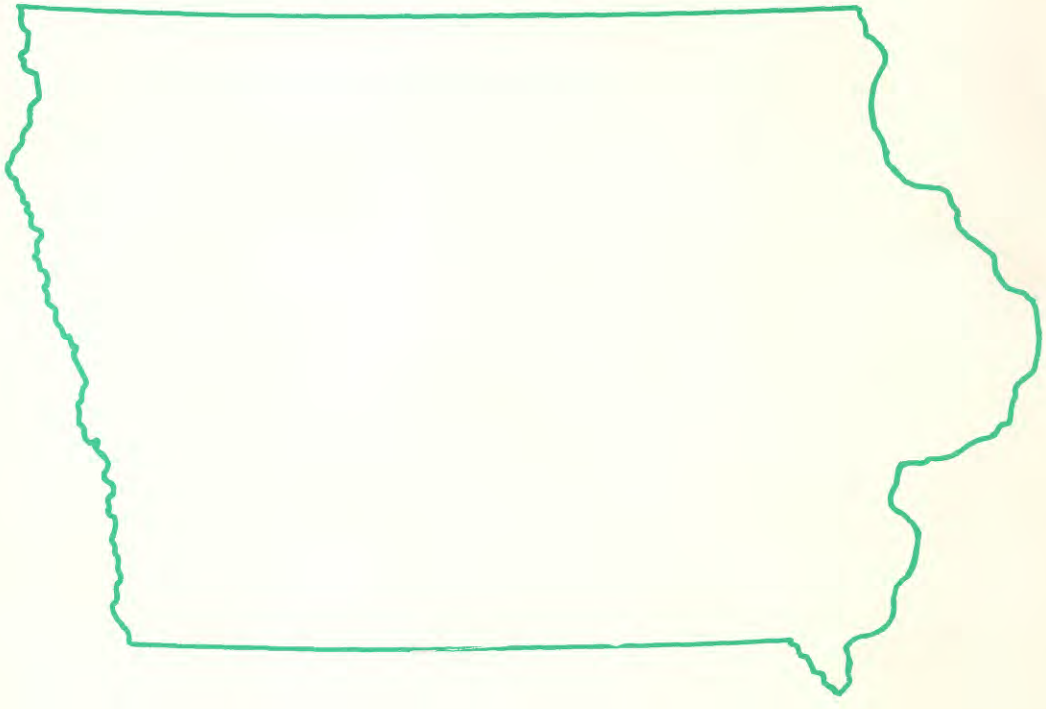
Water Resources Data
Iowa
Water Year 1985



U.S. GEOLOGICAL SURVEY WATER DATA REPORT IA-85-1
Prepared in cooperation with the Iowa Geological Survey and with other State and Federal agencies

CALENDAR FOR WATER YEAR 1985

1984

OCTOBER

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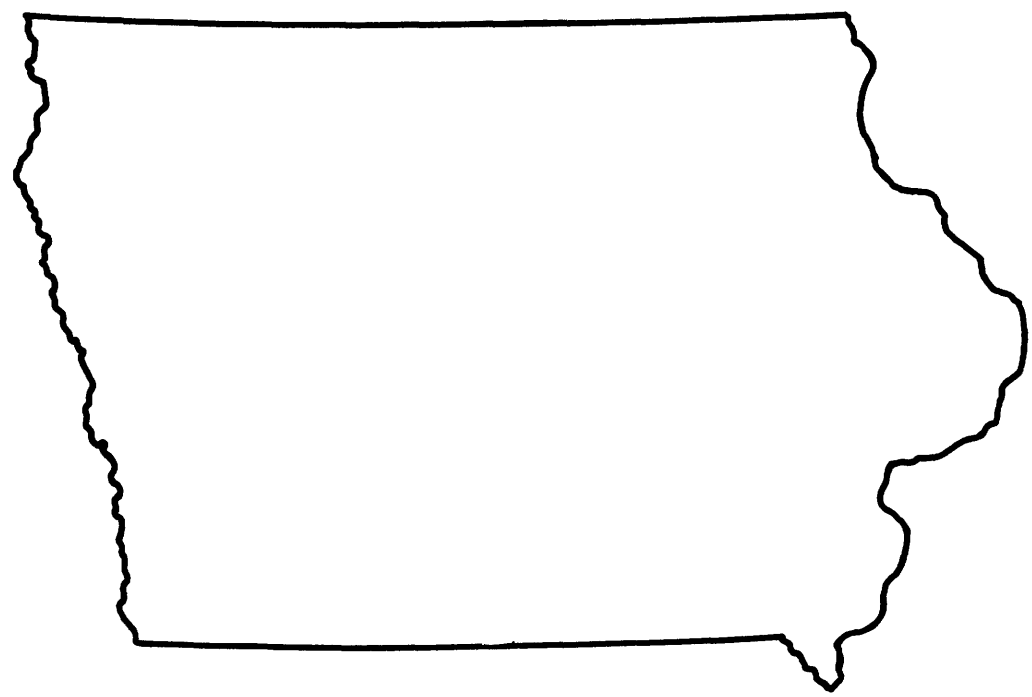
Water Resources Data
Iowa
Water Year 1985

by N.B. Melcher, M.G. Detroy, W.J. Matthes, and R.E. Hansen



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT IA-85-1
Prepared in cooperation with the Iowa Geological Survey and with other State and Federal agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Iowa write to
District Chief, Water Resources Division
U.S. Geological Survey
P.O. Box 1230
Iowa City, Iowa 52244

1986

PREFACE

This report of Iowa is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface-water 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 State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsiblity for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines. Most of the data were collected, computed, and processed from area field offices. Personnel in charge of the field offices are:

Robert W. Baebenroth, Council Bluffs Field Headquarters
Von E. Miller, Iowa City Field Headquarters
Alvin R. Conkling, Ft. Dodge Field Headquarters

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

L.K. Amspoker	C.J. Anderson	A.R. Conkling
D.T. Conell	N.F. Fish	R.D. Goodrich
J.G. Gorman	L.E Hotka	R.A. Karsten
R.L. Kopish	D.W. Kolpin	P.D. Lustgraaf
G.D. Lyke	C.L. Schnell	J.R. Sondag
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16. Abstract (Limit: 200 words)

Water resources data for the 1985 water year for Iowa consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; ground-water levels and ground-water quality. This report contains discharge records for 111 stream-gaging stations; stage and contents for 8 lakes and reservoirs; water quality for 8 stream-gaging stations; sediment records for 12 stream-gaging stations; water levels for 94 observation wells; and chemical analyses for 214 observation wells. Also included are 118 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements and analyses. The data represent that part of the National Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Iowa.

17. Document Analysis a. Descriptors

*Iowa, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rates, Streamflow, Stream-gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water, Temperature, Sampling sites, Water levels, Water analyses, Data collections, Ground water levels.

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WATER RESOURCES DATA - IOWA, 1985

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State 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 these data readily available to interested parties outside of the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Iowa."

This report contains records for water discharge at 111 gaging stations; stage or contents for 8 lakes and reservoirs; water quality records for 8 gaging stations, sediment records for 12 gaging stations and water levels for 94 observation wells. Also included are data for 118 crest-stage partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, local, and Federal agencies in Iowa.

Records of discharge and stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water 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 may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, Virginia, 22304.

For water years 1961 through 1970, streamflow data were released by the 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 of in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report IA-85-1." These water-data reports are for sale, in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone, (319) 337-4191.

COOPERATION

The U.S. Geological Survey and organizations in the State of Iowa have had cooperative agreements for the systematic collection of streamflow records since 1914, for ground water levels since 1935, and for water-quality records since 1943. Organizations that assisted in collecting data through cooperative agreement with the Survey in 1985 are:

Iowa Geological Survey, Donald L. Koch, Director and State Geologist

University of Iowa, Institute of Hydraulic Research, Robert G. Hering, Dean of College of Engineering and John F. Kennedy, Director

University of Iowa, Hygienic Laboratory, W.J. Hausler, Jr., Director

Iowa Department of Transportation, Highway Division, Robert H. Given, Director, and Vernon J. Marks, Research Engineer

Iowa State University, Richard E. Hasbrook, Contracts and Grants Officer, and E. Robert Bauman, Professor-in-charge; and Engineering Research Institute, T. Al. Austin, Director.

City of Cedar Rapids, Donald Canney, Mayor

City of Des Moines, Pete Creivaro, Mayor

City of Fort Dodge, Michael D. McCarville, General Manager, Department of Municipal Utilities

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting flow records for 77 gaging stations. Assistance was also furnished by NOAA-National Weather Service, U.S. Department of Commerce.

The following organizations aided in collecting records:

Union Electric Co.; Des Moines Water Works; Waterloo Sewage Treatment Plant; University of Iowa; West Central Iowa Rural Water Association; and cities of, Charles City, Clear Lake, Denison, Iowa city, Marshalltown, Sioux City, and Waterloo.

Organizations that supplied data are acknowledged in station descriptions.

Table 1.--Runoff at streamflow stations for 1985 compared with long-term average for all major river basins in Iowa. [Average runoff for station based on period of record. Previous maximum runoff value, and the year of occurrence are shown.]

Station number and name	Drainage area square miles	Runoff, (inches) 1985 water year	Runoff, (inches) Average	Previous maximum (Inches)	Previous maximum Water Year
05388250 Upper Iowa R nr Dorchester	770	8.2	10.6	22.6	1983
05412500 Turkey R at Garber	1,545	6.8	8.4	19.6	1983
05418500 Maquoketa R at Maquoketa	1,553	8.9	9.0	20.3	1973
05422000 Wapsipinicon R nr Dewitt	2,330	7.7	9.0	20.3	1973
05451500 Iowa R at Marshalltown	1,564*	4.5	7.1	19.8	1983
05455700 Iowa R nr Lone Tree	4,293*	6.0	9.0	19.0	1973
05464000 Cedar R at Waterloo	5,460*	5.8	8.0	20.2	1983
05465000 Cedar R nr Conesville	7,785*	6.4	8.3	18.0	1983
05465500 Iowa R at Wapello	12,499	6.2	7.6	18.6	1973
05474000 Skunk R at Augusta	4,303	7.3	7.7	20.6	1973
05480500 Des Moines R at Ft. Dodge	4,190*	5.2	5.0	18.0	1983
05484500 Raccoon R at Van Meter	4,303*	4.0	5.4	19.2	1973
05485500 Des Moines R at Des Moines	9,879*	4.0	6.1	18.1	1983
05490500 Des Moines R Keosaqua	14.038	4.5	5.6	18.1	1983
06483500 Rock R at Rock Valley	1,592	6.7	3.4	14.0	1983
06600500 Floyd R at James	882	7.8	3.3	14.7	1983
06607500 Little Sioux R nr Turin	3,526	7.1	5.2	18.4	1983
06609500 Boyer R at Logan	871	5.1	5.1	13.9	1983
06810000 Nishnabotna R above Hamburg	2,806	4.6	5.2	17.4	1973
06811840 Tarkio R at Stanton	49.3	1.6	7.8	19.5	1973
06817000 Nodaway R at Clarinda	762	3.0	6.1	20.4	1973
06818750 Platte R nr Diagonal	217	2.5	8.2	18.2	1973
06898000 Thompson R at Davis City	701	2.5	7.2	20.8	1973
06898400 Weldon R nr Leon	104	2.5	9.2	23.3	1959
06903400 Chariton R nr Chariton	182	5.2	8.4	19.3	1973
06903700 SF Chariton R nr Promise City	168	9.6	9.4	18.7	1973
Total drainage area included in study	48,898	--	--	--	--
Areal weighted average	--	5.9	6.4		

* Not included in areal averaging of river basin runoff

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Average annual precipitation in Iowa during the 1985 water year (October 1, 1984 to September 30, 1985) ranged from 30.9 inches in the central area to 37.4 in the southeast area of the State. The 1985 State-wide average was 34.2 inches or 107 percent of the long term average. Winter snowfall was substantially greater in the northern part of the State. Total snowfall from November to April ranged from 16.7 inches in the southcentral area to 33.3 inches in the northcentral area of the State.

Monthly precipitation from October through December (fig. 1) was above average in all areas of Iowa. The runoff from the three index stations (fig. 2) generally reflected the effects of this precipitation. Streamflow at the index station on the Cedar River at Cedar Rapids was in the normal range (25 to 75% quartile of 1951-80 mean daily discharges for specified month) during this period. Streamflow in the Des Moines River at Fort Dodge was in the normal range during October, but responded to the greater than average fall precipitation, and was in the excess range (75% quartile of 1951-80 mean daily discharges for specified month), in November and December. The discharge of the Nishnabotna River at Hamburg was in the excess range the entire period.

Streamflow throughout Iowa receded normally during the winter. The index stations were all in the excess range in January, due to recharge from the greater than average fall precipitation, but generally receded into their normal range in February and March. Air temperatures in mid-February moderated and the winter ice-cover broke in many streams throughout the State. This condition was accompanied by rainfall accumulations of more than 1 inch in the eastern two-thirds of the State on February 20-21. Because the ground remained frozen, this precipitation caused substantial runoff and severe ice jamming in many streams. Normal winter temperatures in late February and March caused streams to recede for the remainder of the winter.

During April and May precipitation was near normal and discharge at the index stations was in the normal range. During June, precipitation was less than average in all parts of the State. This dry weather continued through July and precipitation throughout the northern two-thirds of Iowa was about one-half of the normal precipitation. Streamflow in the Cedar River at Cedar Rapids receded to the deficient range (25% quartile of 1951-80 mean daily discharge for specified month) during June and July. Both the Des Moines River at Fort Dodge, and the Nishnabotna River above Hamburg remained in their normal ranges, primarily due to recharge from normal precipitation in April and May.

Normal precipitation occurred throughout the State in August, and September precipitation was substantially greater than normal. Streamflow at the index stations were all in the normal range during August, except the Cedar River at Cedar Rapids which remained in the deficient range. Streamflow increased at all index stations in response to the greater than normal September precipitation, and all the index stations were in the normal or excess range at the end of the 1985 water year. A summary of runoff at streamflow stations in 1985 is shown in table 1.

Suspended-Sediment

Sediment transport for the nine daily sediment stations during 1985 was less than one-half the normal accumulated mean load at all sites. The minimum daily load for the Middle Raccoon River at Panora was the minimum for the period of record. Due to the lack of normal seasonal storms and floods during spring and summer, the maximum sediment transport at all sites occurred during the spring ice breakup.

Surface Water-Quality

The chemical quality of surface water in Iowa, as indicated by samples collected on major rivers, was not substantially different than that for previous years. Samples collected at these limited number of sites indicate that water in the major streams is generally suitable for public water supply and most industrial uses when properly treated. None of the samples analysed had concentrations of constituents that were in excess of environmental standards. Dissolved-oxygen concentrations were near or greater than saturation at all stations. This generally indicates that, with respect to dissolved oxygen, stream quality has not been significantly affected by oxygen demands such as nutrients, organic matter and suspended sediment to the streams.

A comparison between selected water-quality data for the 1985 water year and historical data for the period of record is shown in figures 3-5. Monthly means of stream discharge for the 1985 water year also are shown to generally relate flow conditions to water-quality measurements obtained during the 1985 water year. Dissolved-solids and nitrate data collected at selected National Stream-Quality Accounting Network (NASQAN) stations were used to demonstrate temporal variability of water quality for the Mississippi, Iowa, and Missouri Rivers. Concentrations of dissolved-solids for the Mississippi River at Keokuk (fig. 3) and the Iowa River at Wapello (fig. 4) were normal for the 1985 water year when compared to historical monthly means for the period of record. Dissolved-solids concentration for the Missouri River station at Sioux City (fig. 5) exceeded the historical monthly mean for four of six samples analysed.

Nitrate concentrations reported as nitrogen (analysis for nitrate plus nitrite as nitrogen, but nitrite concentration assumed to be negligible) for the Mississippi River at Keokuk (fig. 4) were much less than the historical monthly mean for two measurements. These 2 measurements were near or less than the detection limit of 0.1 mg/L. All nitrate measurements at the Iowa River station (fig. 5) were less than monthly means. Nitrate concentrations at the Missouri River station (fig. 6) exceeded historical monthly means 3 times, however all concentrations were equal to or less than 1.2 mg/L.

Ground Water

Normally, water levels at the water table rise later in the spring or early summer than what was observed in 1985. After the growing season begins, precipitation normally is lost to runoff and evapotranspiration so that recharge to the aquifers is decreased. The water-level rises in water-table aquifers result, in part, from recharge by direct infiltration of precipitation. The water levels shown in figure 6 are from three shallow, water-table wells completed in Pleistocene glacial drift in Linn, Webster, and Marion Counties. The water-levels reflect the precipitation pattern for 1985 shown in figure 1. Precipitation during April through August was less than the normal annual precipitation (1951-80) for those months. The well in Linn County had water levels below the average monthly levels for May, June, August, and September. Another well in Johnson County, completed in the same aquifer, had water levels below the average monthly levels during April through September. The well in Webster County had water levels below the average monthly levels for May through July. Water levels in a water-table well in Montgomery County were below the average monthly level the entire water year. The well in Marion County in south-central Iowa had water levels below the average monthly levels during April and May. Water levels in a shallow, water-table well completed in Holocene alluvium, in Pottawattamie County, were above the average monthly levels for all months except September.

Ground Water-Quality

The water-quality data obtained from analysis of ground-water samples indicate that nitrate, numerous pesticides and radiochemical constituents are present in concentrations that may be considered undesirable and in many cases exceed public-drinking water standards. Two-hundred fourteen water-quality analyses of raw water (untreated and obtained directly from the respective aquifer) from municipal wells throughout the State are listed in this report.

Fifty-six percent of the wells sampled are less than 150 feet deep and are completed in shallow aquifers of Quaternary age. Samples from this category of wells were analysed for a comprehensive list of pesticides in addition to common mineral, metal, nutrient and radiochemical constituents. Of particular interest for this category of shallow wells are the concentrations of nitrate and selected pesticides in shallow ground water. Of the 120 shallow wells sampled, 7 samples (6 percent) had nitrate concentrations greater than the maximum contaminant limit (MCL) for public drinking water of 10 mg/L nitrate as nitrogen. Samples from 15 or these shallow wells had detectable concentrations of at least 1 pesticide; either atrazine, cyanazine, metribuzin, alachlor, metolachlor, or dicamba. Atrazine was the most prevalent, appearing in 14 of 94 comprehensive pesticide analyses. Analyses are listed for 12 pesticides that commonly are used in Iowa. Analyses for 18 organochlorine pesticides which were also analysed for are not listed in the table, however no organochlorine pesticide was detected in any ground-water sample.

The remainder of the samples collected represent ground-water-quality of deeper aquifers. These analyses describe the quality of ground-water from wells more than 150 feet deep which derive water from deeper bedrock aquifers. These samples indicate that few chemical constituents are present in concentrations that exceed environmental standards. The only significant exception are radiochemical constituents. Eight samples had gross alpha activities greater than the MCL of 15 pCi/L and 24 samples had combined radium 226 and 228 greater than the MCL of 5 pCi/L.

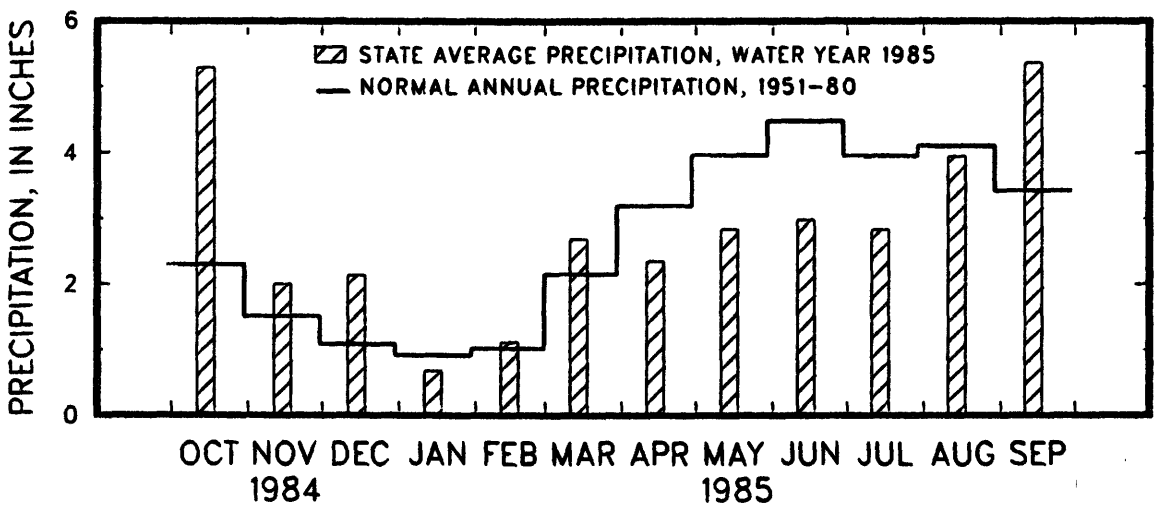

Figure 1.--State average precipitation, during the 1985 water year compared to normal annual precipitation, 1951-80 [Source: P.J. Waite, State Climatologist, oral commun., 1986].

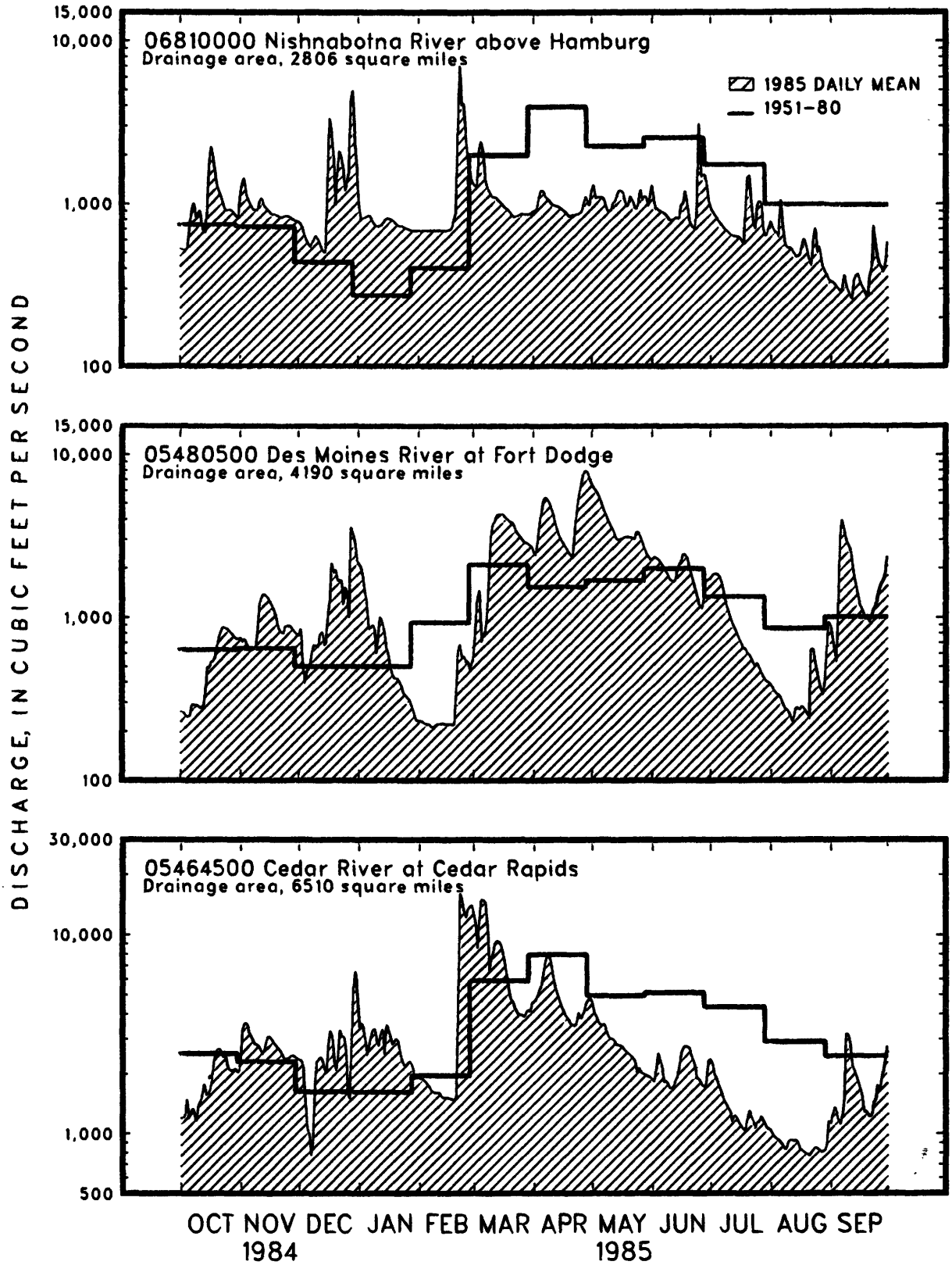

Figure 2. Daily mean discharge for the 1985 water year compared with mean monthly discharges for water years 1951–80 for three representative stations.

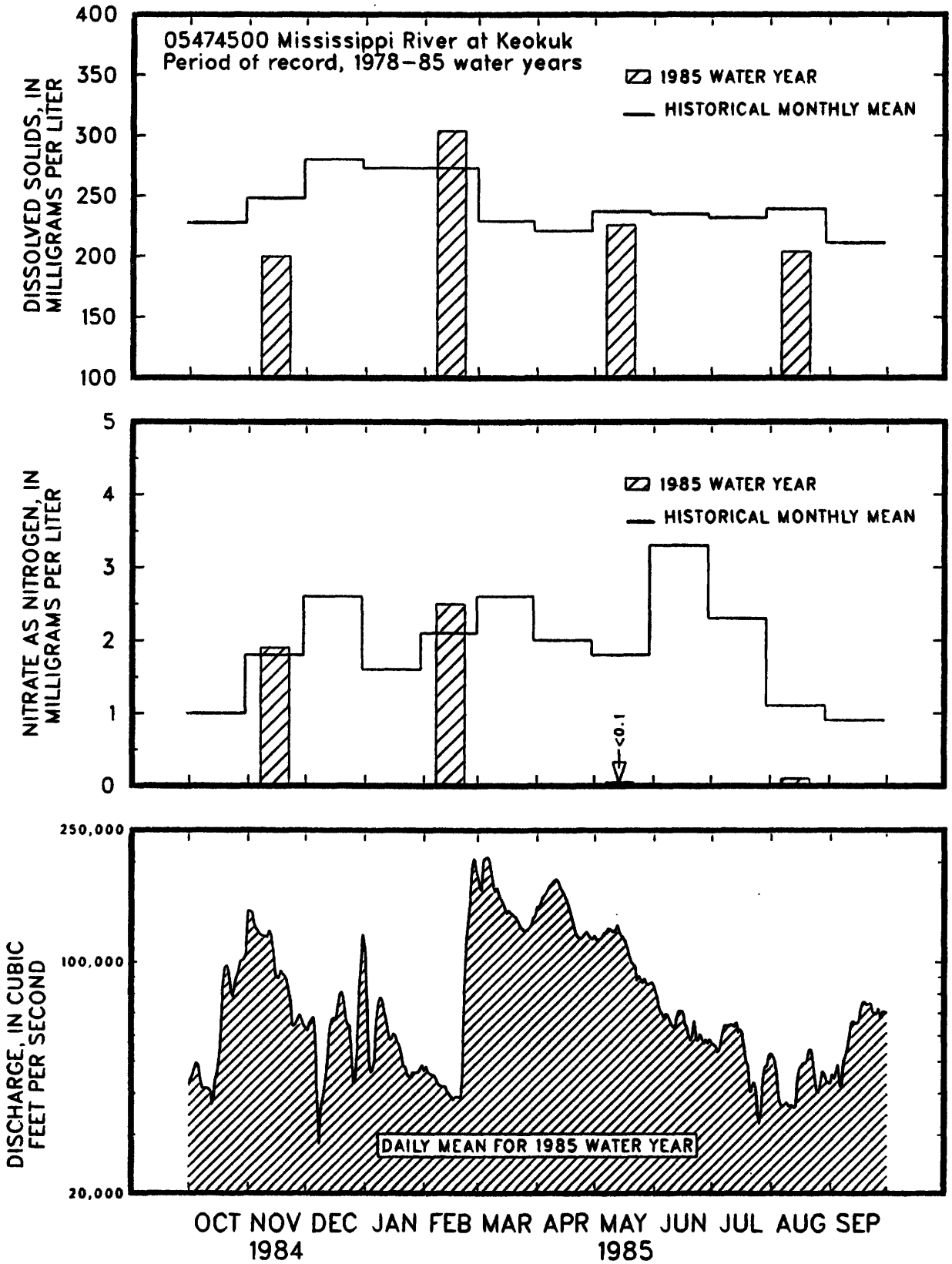

Figure 3. Comparison of dissolved solids and nitrate concentrations for the 1985 water year with mean monthly values at the NASQAN station on the Mississippi River at Keokuk.

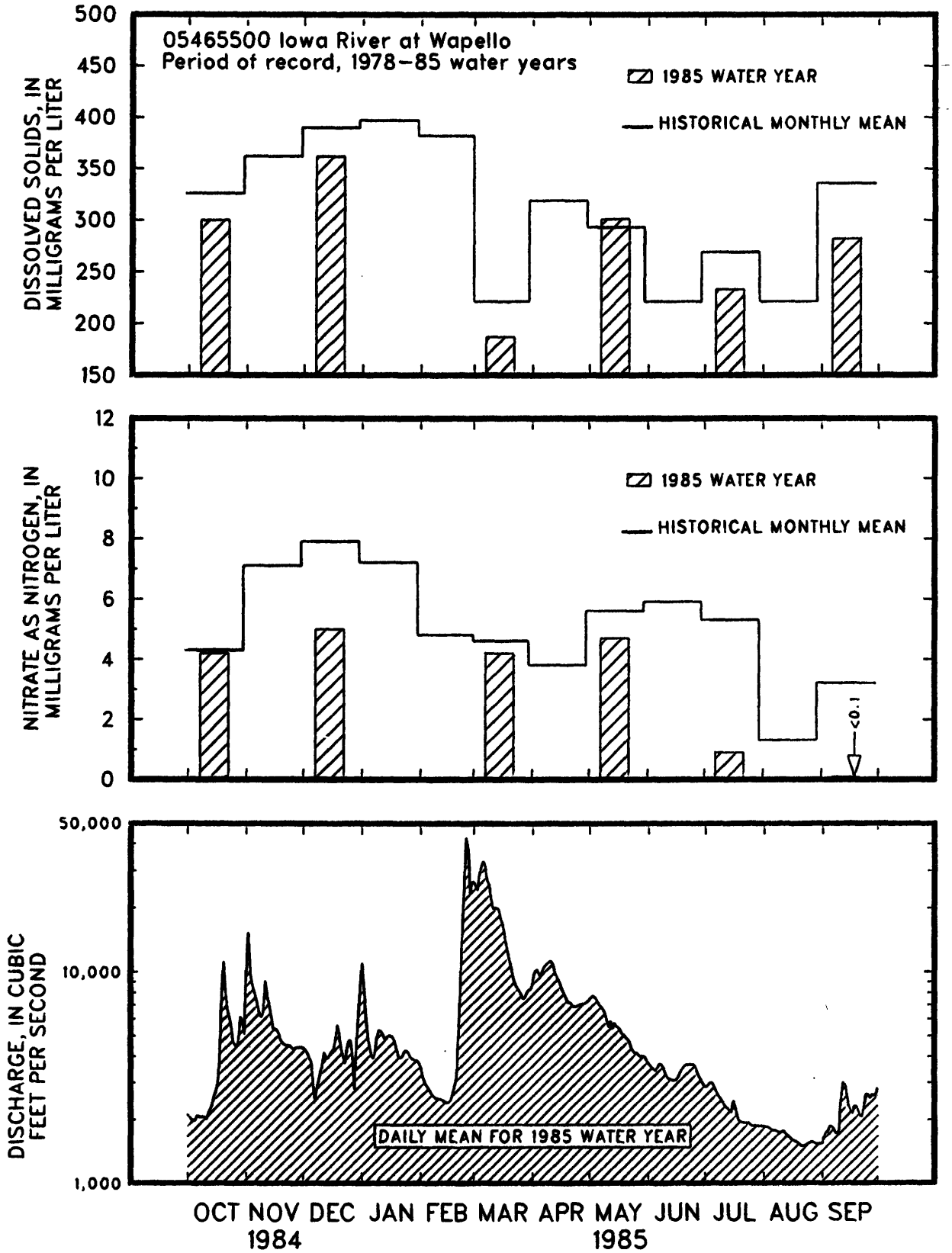

Figure 4. Comparison of dissolved solids and nitrate concentrations for the 1985 water year with mean monthly values at the NASQAN station on the Iowa River at Wapello.

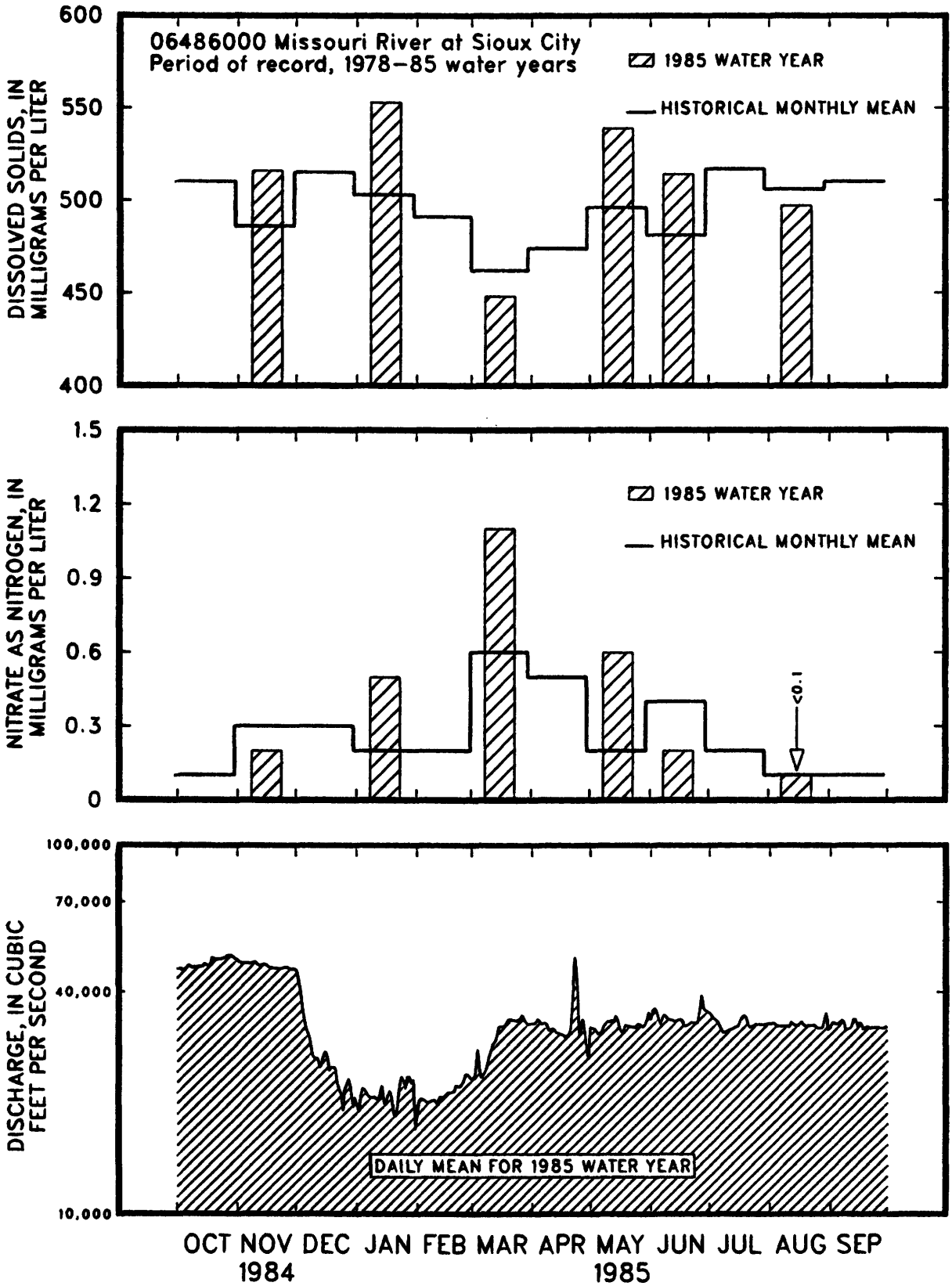

Figure 5. Comparison of dissolved solids and nitrate concentrations for the 1985 water year with mean monthly values at the NASQAN station on the Missouri River at Sioux City.

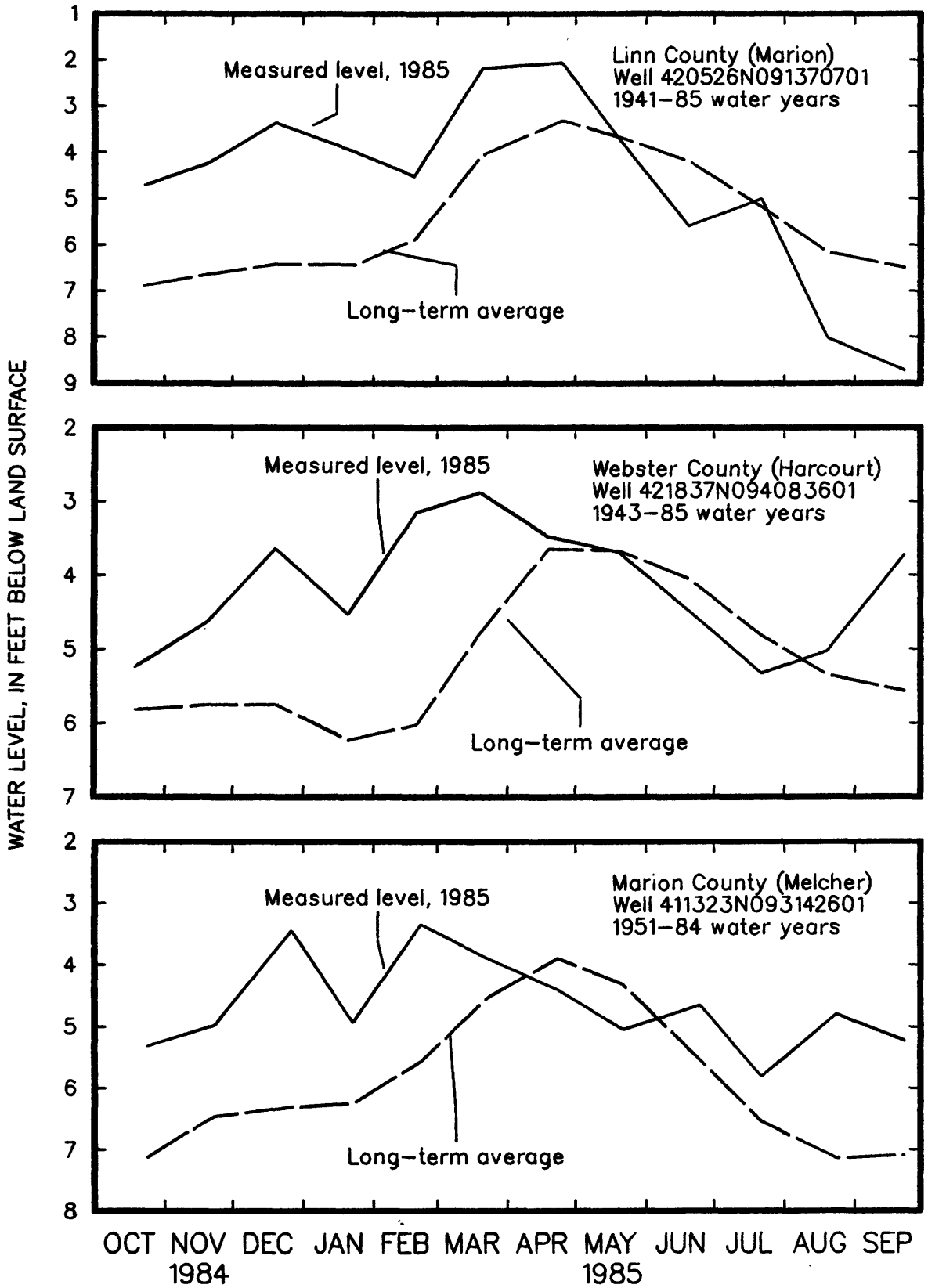

Figure 6. Monthly water levels during the 1985 water year compared to the average monthly level for the period of record

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1985 water year that began October 1, 1984, and ended September 30, 1985. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 9-11. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 05388250, which appears just to the left of the station name, includes the two-digit Part number "05" plus the six-digit downstream-order number "388250." The Part number designates the major river basin; for example, Part "05" is the Mississippi River Basin.

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure below.)

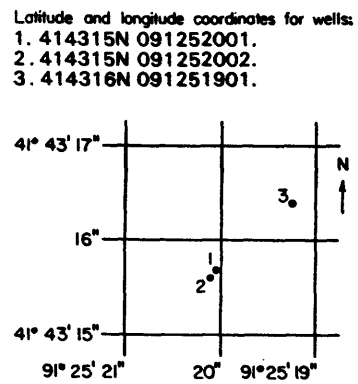

Figure 7.--Latitude-longitude well number.

NUMBERING SYSTEM FOR WELLS

Each well is identified by means of (1) a 15-digit number that is based on the grid system of latitude and longitude, and (2) a local number that is provided for continuity with older reports and for other use as dictated by local needs. The former number serves not only to identify the well but also to locate it as a point on a map (fig. 7). For maximum utility, latitude and longitude code numbers are determined to seconds in order that each well may have a unique number. The first six digits denote degrees, minutes, and seconds of latitude; "N" refers to north latitude and is used to break the string of numbers; the next seven digits are degrees, minutes, and seconds of west longitude; and the last two numbers are a sequential number assigned in the order in which the wells are located in a 1-second quadrangle.

The local well numbers are in accordance with the Bureau of Land Management's system of land subdivision. Each well number is made up of three segments. The first segment indicates the township, the second the range, and the third the section in which the well is located (fig. 8). The letters after the section number which are assigned in a counter-clockwise direction (beginning with "A" in the northeast quarter), represent subdivisions of the section. The first letter denotes a 160-acre tract, the second a 40-acre tract, the third a 10-acre tract, and the fourth a 2.5 acre tract. Numbers are added as suffixes to distinguish wells in the same tract. Thus, the number 96-20-3CDBD1 designates the well in the SE 1/4 NW 1/4 SE 1/4 SW 1/4 sec.3, T.96 N., R.20 W.

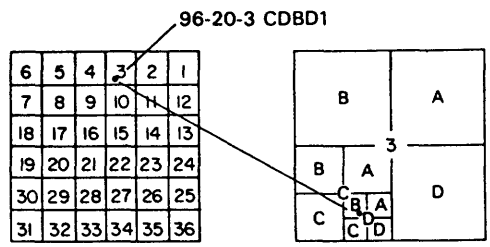

Figure 8.--Local well-numbering system for well 96-20-3CDBD1.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations." Location of all complete-record surface water stations which are given in this report are shown in figure 9.

Partial records are obtained through discrete measurements without using a continuous stage-recording device and generally pertain only to a characteristic of either high, medium or low flow.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-capacity curves or tables to compute lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope- area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed using stage-discharge relations.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For these periods, the daily discharges are estimated from the recorded range in stage, discharge computed before and after the missing record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage 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 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 indicates the period for which there are published records 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 records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), 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 record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning 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 U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published 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 offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because 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 skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. This section consists of a table of annual maximum stage and discharge for crest-stage stations.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 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 discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in various field offices of the Iowa District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may 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 continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once 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 continuing or partial-record station, where random 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 "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. 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 10.

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.

On-site measurements and sample collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, alkalinity and dissolved oxygen, are made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures are 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 of onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. C2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed on p. 22 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

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 through several vertical sections to obtain the representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for 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.

Water temperature and specific conductance

Water temperatures are measured at most of the water-quality stations. The measurement of temperature and specific conductance is performed during each regular site visit (usually at a six week interval) to stream-gaging stations. Records of stream temperature indicate significant thermal characteristics of the stream when analysed over a long period of record. A summary of monthly maximum, minimum, and mean temperatures were published in the 1974 water data report for gaging stations with 10 or more years of record. Large streams have small daily temperature variations while shallow streams may have a daily range of several degrees and may closely follow the changes in air temperature. Furthermore, some streams may be affected by waste-heat discharge.

Specific conductance can be used as a general indicator of stream quality. This determination is easily made in the field with a portable meter, and the results are very useful as general indicators of dissolved-solids concentration or as a base for extrapolating other analytical data. Records for temperature and specific conductance appear in the section "Analyses of samples collected at miscellaneous sites".

A continuous recording thermograph is located on the Mississippi River at Lock and Dam 13 at Clinton. Daily maximum and minimum temperatures are published for this station.

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration 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 were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, 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 the quantities of suspended-sediment, records of the periodic measurements of the particle-size distribution of the suspended-sediment and bed material are included. Miscellaneous suspended-sediment samples were collected during flood events have been included with the station's water quality data or in the section "Analyses of samples at miscellaneous sites".

Laboratory measurements

Sediment samples, samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2, Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

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, as appropriate, 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 under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. 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 Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

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

Remark Codes

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

PRINTED OUTPUT	REMARK
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)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Ground-water level data from a network of observation wells in Iowa are published in this report. These data provide a limited historical record of water-level changes in the State's most important aquifers. Locations of the observation wells in this network in Iowa are shown in figure 11. Information about the availability of the data in the water-level files of the U.S. Geological Survey may be obtained from the District Chief, Iowa District (see address on back of title page page).

Data Collection and Computation

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 arranged alphabetically by counties. The site identification number, based on latitude and longitude, for a given well is the 15-digit alphanumeric value that appears in the upper left corner of the station description. The secondary identification number is the local well number, an alphanumeric value, derived from the township and range location of the well (fig. 8).

Water-level records are obtained from direct measurements with a chalked steel tape, electric line, airline, or from the graph of a water-level recorder. The water-level measurements in this report are in feet with reference to land-surface datum. Land-surface datum is a plane that is approximately at land surface at each well. The elevation of the land-surface datum is given in the well description. The height of the measuring point 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-level measurements are reported to the nearest hundreth of a foot. Estimates, indicated by an "e" may be reported in tenths of a foot. The error of water-level measurements may be, at most, a few hundreths of a foot.

Data Presentation

Each well record consists of two parts, the station description and the table of water levels observed during the water year. The description of the well is presented by headings preceding the tabular data. The following explains the information presented under each heading.

LOCATION.--This paragraph follows the well identification number and includes the latitude and longitude (given in degrees, minutes, and seconds), the hydrologic unit number, the distance and direction from a geographic point of reference, and the well owner's name.

AQUIFER.--This entry is the aquifer(s) name (if one exists) and geologic age of the strata open to the well.

WELL CHARACTERISTICS.--This entry describes the well depth, casing diameter, casing depth, opening or screened interval(s), method of construction, and use of water from the well.

INSTRUMENTATION.--This paragraph provides information on the frequency of measurement and the collection method used.

DATUM.--This entry includes the measuring point and the land-surface elevation at the well. The measuring point is described physically and in relation to land surface. The elevation of the land-surface datum is in feet above National Geodetic Vertical Datum of 1929 and its precision is dependent on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level and any information not presented in the other parts of the station description but considered useful.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the begining of publication of water-level records by the U.S. Geological Survey.

REVISED RECORDS.--If any revisions of previously published data were made for water-levels, the Water Data Report in which they appeared and year published would appear here.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels for the period of record, below land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum. For wells equipped with recorders, only abbreviated tables are published. The highest and lowest water levels of the water year and the dates of occurence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

Hydrographs are included for nine wells which are representative of hydrologic conditions in the important aquifers in Iowa.

Only water-level data from a national network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Iowa are shown in figure 11.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general puposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

The records of ground-water quality in this report were obtained as a part a statewide ground-water quality monitoring network operated by the Iowa District. All samples were obtained from municipal wells throughout Iowa. This program is conducted in cooperation with the University of Iowa Hygienic Laboratory (UHL) and the Iowa Geological Survey. All samples are collected by USGS personnel, field-preserved and submitted to UHL for analysis. Chemical analyses include common constituents (major ions), nutrients, trace metals, radionuclides and pesticides. Approximately 10 percent of the samples receive additional analyses for about 90 organic priority pollutants, however these analyses are not presented in this report but are on file in the District office.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure 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, possible metal, comprising the casings. The samples collected represent raw water

Data Presentation

The records of ground-water quality are published in a section titled GROUND-WATER QUALITY DATA immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County, and are identified by station number. The prime identification number for wells sampled is the 15-digit station number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the station number, date and time of sampling, depth of well, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

Explanation of descriptive headings

STATION NAME: Descriptive identifier for each well which contains four elements that are explained below.

```
08812W06ACCA     10039     1958     EVANSDALE NO 3
     |             |         |           |
     |             |         |           `> Local well name
     |             |         |
     |             |         `> Date of construction
     |             |
     |             `> W-number, refers to a strip log for the
     |                well filed at the Iowa Geological Survey
     |
     `> Local well number, refers to the Bureau of Land
        Management System of land subdivision
```

GEOLOGIC UNIT: Refers to the lithologic unit in which the well is completed. First two digits of the code refer to the principal unit which is providing the majority of water to the well.

11	=	Quaternary	34	=	Devonian
21	=	Cretaceous	35	=	Silurian
32	=	Pennsylvanian	36	=	Ordivician
33	=	Mississippian	37	=	Cambrian

Third digit and remaining alphabetic characters refer to the more specific lithologic unit which the well is tapping. The following examples are commonly used units.

CODE	General----------Specific
112PLSC--Quaternary	(Pleistocene)
217DKDT--Cretaceous	(Dakota sandstone)
371JRDN--Cambrian	(Jordan sandstone)
325DSMS--Pennsylvanian	(Des Moinesian sandstone)
333STLS--Mississippian	(St. Louis limestone)
344CDVL--Devonian	(Cedar Valley limestone)
335HPKN--Silurian	(Hopkinton dolomite)
364STPR--Ordovician	(St. Peter sandstone)

ACCESS TO WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the offices whose addresses are given on the back of the title page.

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

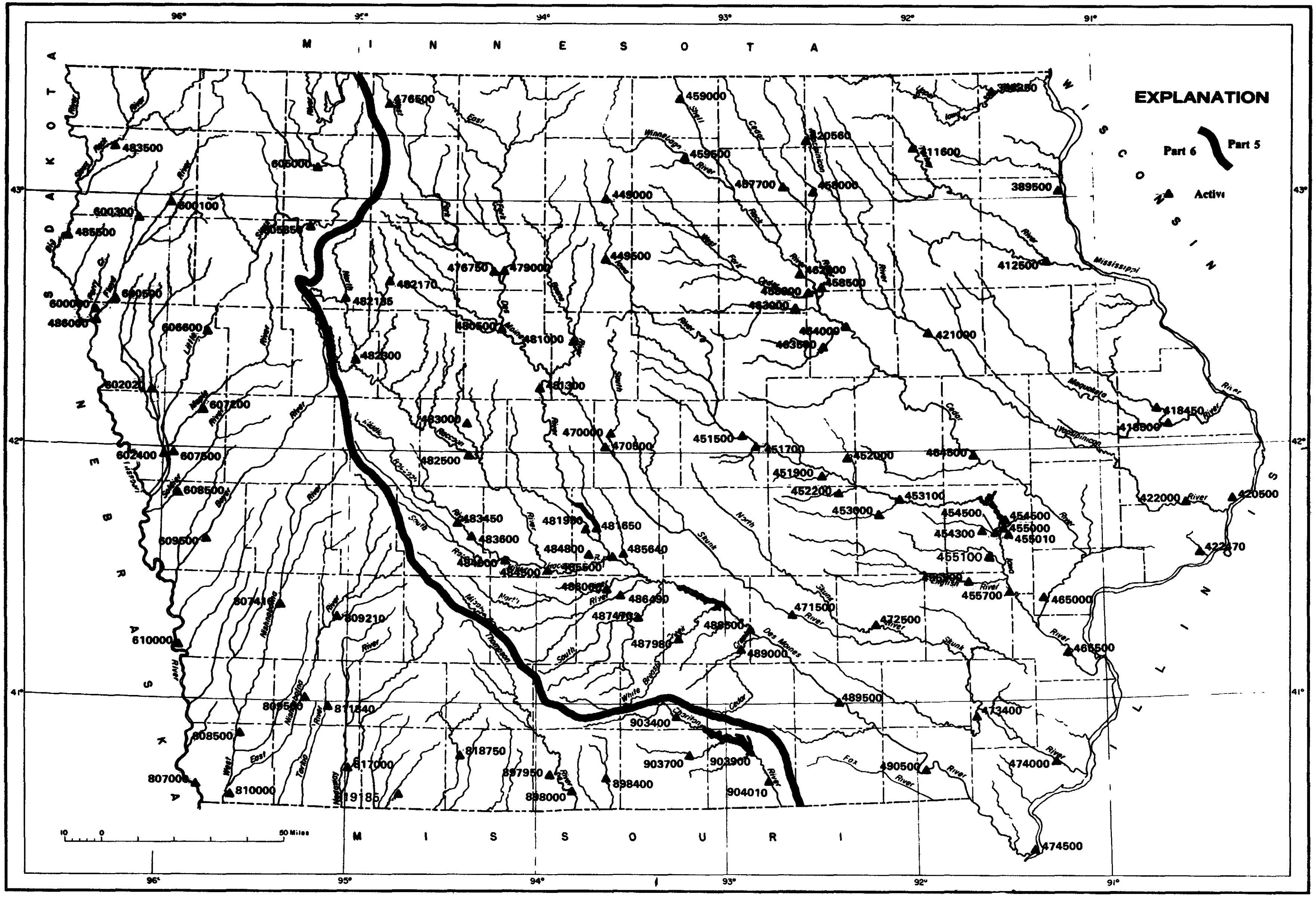

Figure 9.--Location of continuous-record gaging stations in Iowa.

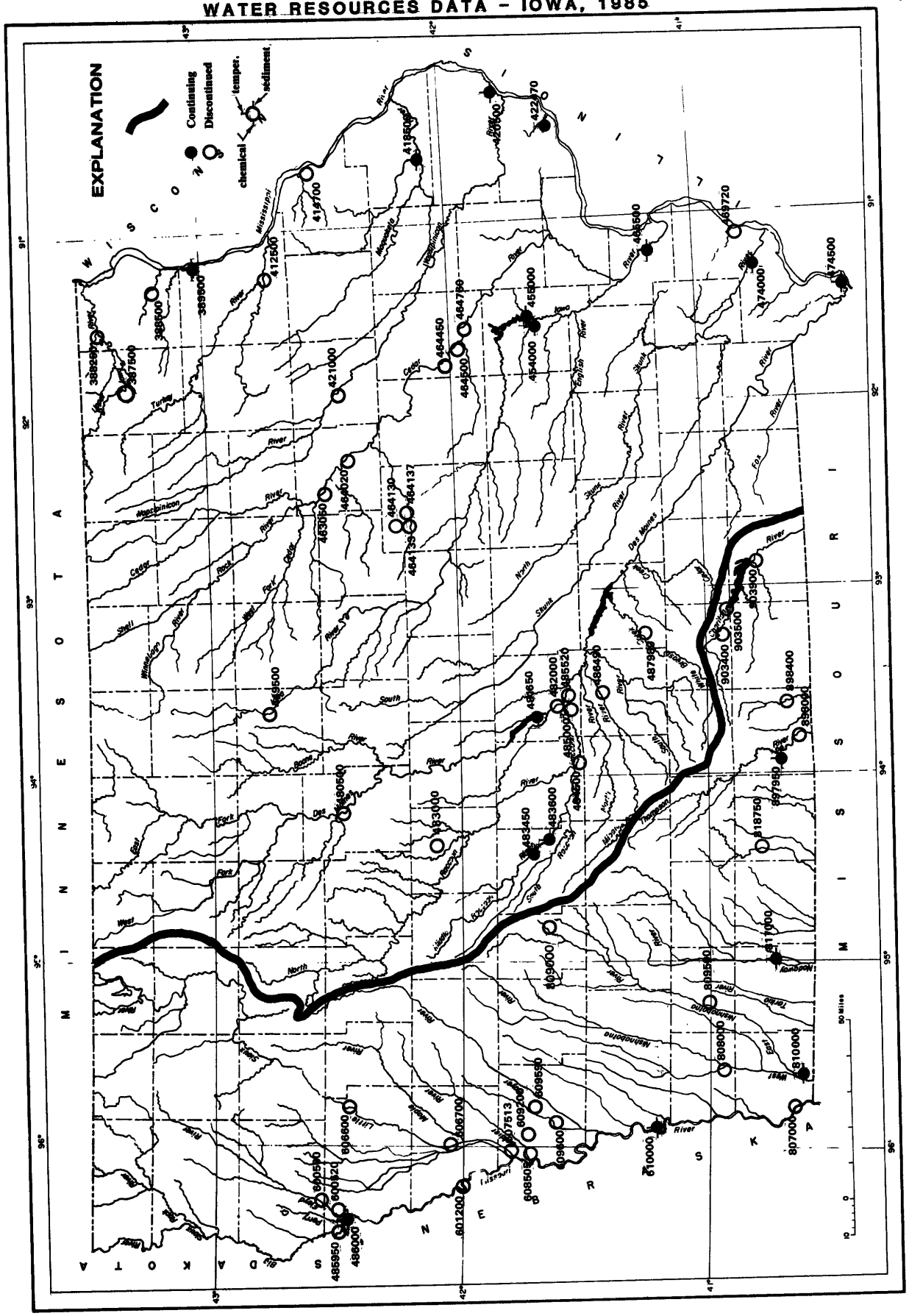

Figure 10.--Location of water-quality stations in Iowa.

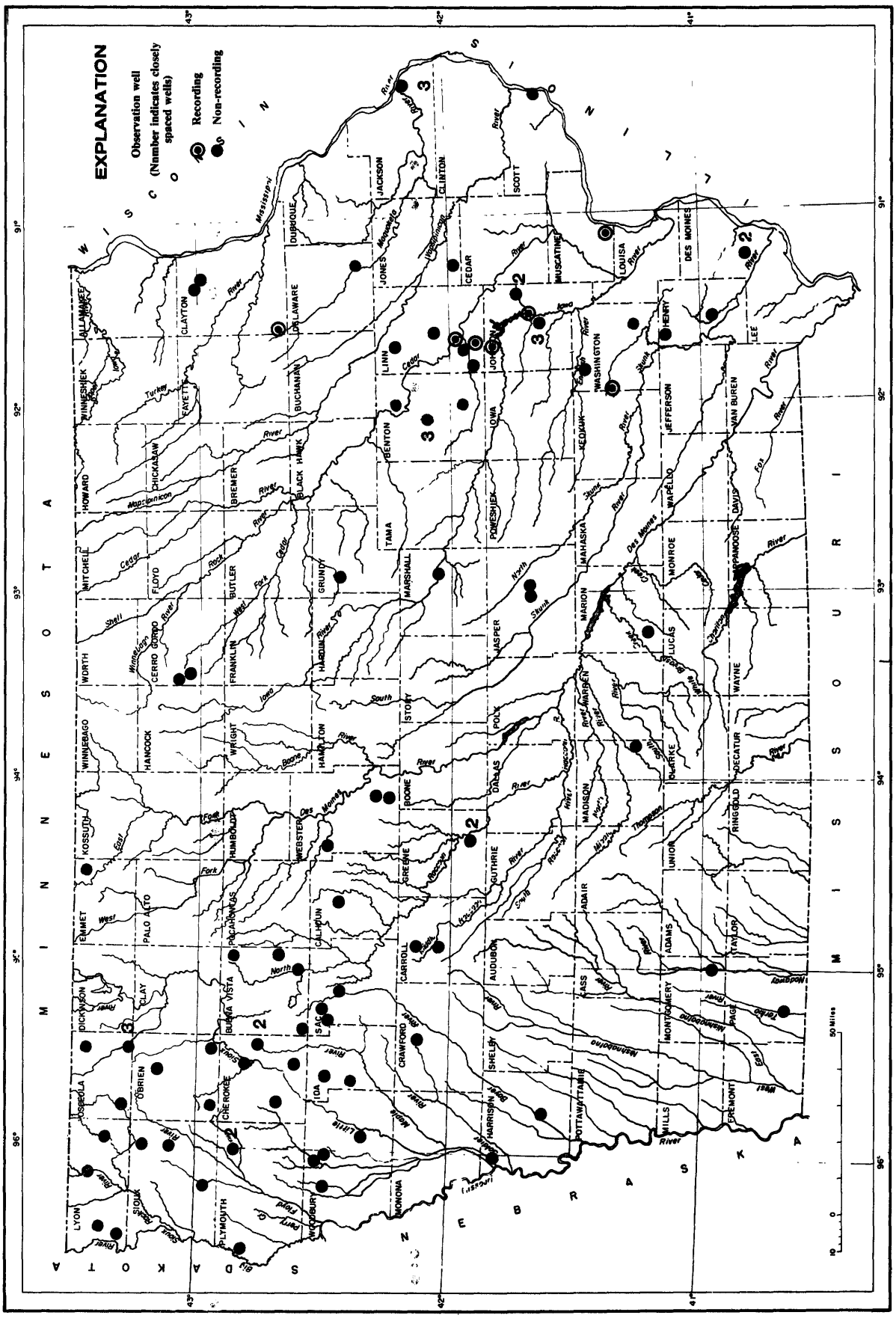

Figure 11.--Location of observation wells in Iowa.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

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

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

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

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

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms 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.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°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.

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

Bottom material: See Bed material.

Cubic-foot-per-second day 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, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

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

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water 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 of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

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

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

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

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

Micrograms per gram (ug/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 liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

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

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentaiton methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with 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.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic 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.

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

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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

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

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN., in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a 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.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow ($7Q_{10}$) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

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. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

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

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a represen- tative water-suspended sediment sample that is retained on a 0.45 um membrane filter. 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 determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings 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 that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment 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 all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipita- tion stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1985, is called the "1985 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Forty-one manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing 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) is on surface water, The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett Street, Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. Water temperature--influential factors, field measurements, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. Application of surface geophysics to ground-water resources investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. Measurement of peak discharge at width contractions by indirect methods, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
3-A6. General procedure for gaging streams, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.3-A
3-A7. State measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 29 pages.
3-A8. Discharge measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
3-A9. Measurement of time of travel and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
3-A11. Measurements of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
3-A13. Computation of continuous records of streamflow, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
3-A14. Use of flumes in measuring discharge, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
3-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
3-B2. Introduction to ground-water hydraulics, a programed text for self-instruction, by G. D. Bennet: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
3-B3. Type curves for selected problems of flow to wells in confined aquifers, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
3-C1. Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
3-C2. Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
4-A1. Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
4-A2. Frequency curves, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
4-B1. Low-flow investigations, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
4-B2. Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 44, Chapter B2. 1973. 20 pages.
4-B3. Regional analyses of streamflow characteristics, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3, 1973. 15 pages.
4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1, 1970. 17 pages.
5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979, 626 pages.
5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
5-A3. Methods for analysis or organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4, 1977. 332 pages.
5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L.C. Friedman and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
5-C1. Laboratory theory and methods for sediment analysis, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L. F. Konikow and J. D. Bredenhoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
7-C3. A model for simulation of flow in singular and interconnected channels, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
8-A2. Installation and service manual for U.S. Geological Survey manometers, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
8-B2. Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

DISCONTINUED GAGING STATIONS

The following stream-gaging stations have been discontinued in Iowa. Continuous daily streamflow records were collected and published for the period of record shown for each station.

Discontinued gaging stations

Station name	Station number	Drainage area (sq mi)	Period of record
Upper Iowa River at Decorah, Iowa	05387500	511	1952-83
Upper Iowa River near Decorah, Iowa.	05388000	568	1913-14; 1919-27;
Paint Creek at Waterville, Iowa.	05388500	42.8	1952-73.
Yellow River at Ion, Iowa.	05389000	221	1934-51.
Mississippi River at Clayton, Iowa.	05411500	9,200	1930-36.
Turkey River at Elkader, Iowa.	05412000	891	1932-42.
Little Maquoketa River near Durango, Iowa.	05414500	130	1934-82.
Maquoketa River near Manchester, Iowa.	05417000	305	1933-73.
Maquoketa River near Delhi, Iowa.	05417500	347	1933-40.
Bear Creek near Monmouth, Iowa.	05417700	61.3	1957-76.
Maquoketa River above North Fork Maquoketa River near Maquoketa, Iowa.	05418000	938	1913-14.
Wapsipinicon River at Stone City, Iowa.	05421500	1,324	1903-14.
Crow Creek at Eldridge, Iowa.	05422420	2.20	1977-82.
Crow Creek at Mt. Joy, Iowa.	05422450	6.90	1977-82.
Pine Creek at Muscatine, Iowa.	05448150	38.9	1975-82.
Eagle Lake inlet near Britt, Iowa.	05448285	3.83	1975-80.
Eagle Lake outlet near Britt, Iowa.	05448290	11.3	1975-80.
West Branch (West Fork) Iowa River near Klemme, Iowa.	05448500	112	1948-58.
Iowa River near Iowa Falls, Iowa.	05450000	665	1911-14.
Upper Pine Lake at Eldora, Iowa.	05450500	14.9	1936-70.
Lower Pine Lake at Eldora, Iowa.	05451000	15.9	1936-70.
Iowa River near Belle Plaine, Iowa.	05452500	2,455	1939-59.
Lake Macbride near Solon, Iowa.	05453500	27.0	1936-71.
Old Mans Creek near Iowa City, Iowa.	05455100	201	1950-64.
Cedar River at Mitchell, Iowa.	05457500	826	1933-42.
Shell Rock River at Marble Rock (Greene), Iowa.	05460500	1,318	1933-53.
Shell Rock River at Greene, Iowa.	05461000	1,357	1933-42.
Shell Rock River near Clarksville, Iowa.	05461500	1,626	1915-27; 1932-34.
Fourmile Creek near Lincoln, Iowa.	05464130	13.78	1962-67; 1969-74;
Half Mile Creek near Gladbrook, Iowa.	05464133	1.33	1962-67; 1969-74;
Fourmile Creek near Traer, Iowa.	05464137	19.51	1962-74; 1975-80.
Prairie Creek at Fairfax, Iowa.	05464640	178	1966-82.
South Skunk River below Squaw Creek near Ames, Iowa.	05471000	556	1952-79.
Indian Creek near Mingo, Iowa.	05471200	276	1958-75.
Lake Keomah near Oskaloosa, Iowa.	05472000	3.06	1936-71.
Skunk River at Coppock, Iowa.	05473000	2,916	1913-44.
Big Creek near Mount Pleasant, Iowa.	05473500	106	1955-79.
East Fork Des Moines River near Burt, Iowa.	05478000	462	1971-74.
East Fork Des Moines River near Hardy, Iowa.	05478500	1,268	1940-54.
Des Moines River near Fort Dodge, Iowa.	05479500	3,753	1911-13.
Lizard Creek near Clare, Iowa.	05480000	257	1940-82.
Des Moines River near Boone, Iowa.	05481500	5,511	1920-68.
Des Moines River at Des Moines, Iowa.	05482000	6,245	1905-06; 1915-61.
Storm Lake at Storm Lake, Iowa.	05482140	28.3	1970-75.
Springbrook Lake near Guthrie Center, Iowa.	05483500	5.18	1936-71.
Raccoon River at Des Moines, Iowa.	05485000	3,590	1902-03.
Lake Ahquabi near Indianola, Iowa.	05487000	4.93	1936-71.
White Breast Creek near Knoxville, Iowa.	05488000	380	1945-62.
Muchakinock Creek near Eddyville, Iowa.	05489190	70.2	1975-79.
Lake Wapello near Drakesville, Iowa.	05490000	7.75	1936-71.
Sugar Creek near Keokuk, Iowa.	05491000	105	1922-31; 1958-73.
Fox River at Bloomfield, Iowa.	05494300	87.7	1957-73.
Fox River at Cantril, Iowa.	05494500	161	1940-51.
Rock River at Rock Rapids, Iowa.	06483270	788	1959-74.
Dry Creek at Hawarden, Iowa.	06484000	48.4	1948-69.
West Fork ditch at Holly Springs, Iowa.	06602000	399	1939-69.
Loon Creek near Orleans, Iowa.	06603920	31	1971-74.
Spirit Lake outlet at Orleans, Iowa.	06604100	75.6	1971-74.
Milford Creek at Milford, Iowa.	06604400	146	1971-74.
Little Sioux River at Spencer, Iowa.	06605100	990	1936-42.
Little Sioux River at Gillett Grove, Iowa.	06605600	1,334	1958-73.
Little Sioux River near Kennebeck, Iowa.	06606700	2,738	1939-69.
Odebolt Creek near Arthur, Iowa.	06607000	39.3	1957-75.
Maple River at Turin, Iowa.	06607300	725	1939-41.
Little Sioux River near Blencoe (Turin), Iowa.	06607510	4,470	1939-42.
Steer Creek near Magnolia, Iowa.	06609200	9.26	1963-69.
Thompson Creek near Woodbine, Iowa.	06609590	6.97	1963-69.
Willow Creek near Logan, Iowa.	06609600	129	1972-75.
Indian Creek at Council Bluffs, Iowa.	06610500	7.99	1954-76.
Mosquito Creek near Earling, Iowa.	06610520	33.0 (revised)	1965-79.
Waubonsie Creek near Bartlett, Iowa.	06806000	30.4	1946-69.
West Nishnabotna River at Harlan, Iowa.	06807320	316	1977-82.
West Nishnabotna River at (near) White Cloud, Iowa.	06807500	967	1918-24.
Mule Creek near Malvern, Iowa.	06808000	10.6	1954-69.
Spring Valley Creek near Tabor, Iowa.	06808200	7.6	1955-64.
Davids Creek near Hamlin, Iowa.	06809000	26.0	1952-73.
West Nodaway River at Villisca, Iowa	06816500	342	1918-25.
Honey Creek near Russell, Iowa.	06903500	13.2	1952-62.
Chariton River near Centerville, Iowa.	06904000	708	1938-59.

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality stations have been discontinued in Iowa. Continuous daily records of water temperature or sediment and monthly or periodic samples of chemical quality were collected and published for the period of record shown for each station. An asterisk (*) in the type of record column indicates that periodic data is available for that parameter subsequent to the period of daily record.

Discontinued water-quality stations

Station name	Station number	Drainage area (sq mi)	Type of Record	Period of record
Upper Iowa River at Decorah, Iowa.	05387500	511	Sed., Temp.	1963-1983
Upper Iowa River near Dorchester, Iowa.	05388250	770	Sed., Temp.	1975-81
Paint Creek at Waterville, Iowa.	05388500	42.8	Temp.	1952-56
			Sed.	1952-57
Turkey River at Garber, Iowa.	05412500	1,545	Temp., Sed.*	1957-62
Mississippi River at Dubuque, Iowa.	05414700	1,600	Chem.	1969-73
Maquoketa River near Maquoketa, Iowa.	05418500	1,553	Chem., Temp., Sed.	1978-82
Wapsipinicon River at Independence, Iowa.	05421000	1,048	Chem.*	1968-70
			Temp.*, Sed.*	1967-70
Crow Creek at Bettendorf, Iowa.	05422470	17.8	Chem., Temp., Sed.	1978-82
Iowa River near Rowan, Iowa.	05449500	429	Temp.*, Sed.*	1957-62
Cedar River at Cedar Falls, Iowa.	05463050	4,734	Chem.	1975-79
Cedar River near Gilbertville, Iowa.	05464020	5,234	Chem.	1971; 1975-81
Fourmile Creek near Lincoln, Iowa.	05464130	13.78	Chem., Temp., Sed.	1969-74
Half Mile Creek near Gladbrook, Iowa.	05464133	1.33	Chem., Temp., Sed.	1969-74
Fourmile Creek near Traer, Iowa.	05464137	19.51	Chem., Temp., Sed.	1969-74
Cedar River near Palo, Iowa.	05464450	6,380	Chem.	1975-79
Cedar River at Cedar Rapids, Iowa.	05464500	6,640	Chem.*	1906-07; 1944-54
			Temp.*	1944-54
			Sed.	1943-54
Cedar River near Bertram, Iowa.	05464760	6,955	Chem.	1975-81
Mississippi River at Burlington, Iowa.	05469720	4,000	Chem.	1969-73
Des Moines River at Fort Dodge, Iowa.	05480500	4,190	Chem.	1972-73
Des Moines River at Des Moines, Iowa.	05482000	6,245	Chem.	1954-55
			Temp., Sed.	1954-61
E. Fork Hardin Creek near Churdan, Iowa.	05483000	24.0	Temp.*,Sed.*	1952-57
M. Fork Raccoon River near Bayard, Iowa.	05483450		Chem.,Temp., Sed.	1979-85
M. Fork Raccoon River at Panora, Iowa.	05483600		Chem.,Temp., Sed.	1979-85
Raccoon River at Van Meter, Iowa.	05484500	3,441	Chem.	1969-73; 1974-79
Raccoon River at Des Moines, Iowa.	05485000	3,590	Chem., Temp.	1945-47
Des Moines River below Raccoon River at Des Moines, Iowa.	05485500	9,770	Chem.*	1944-45
			Temp.*, Sed.	1944-47
Des Moines River below Des Moines, Iowa.	05485520	9,901	Chem.	1971; 1975-81
Middle River near Indianola, Iowa.	05486490	503	Temp.*, Sed.	1962-67
White Breast Creek near Dallas, Iowa.	05487980	342	Chem.	1968-73
			Temp., Sed.	1967-73
Big Sioux River at Sioux City, Iowa.	06485950	9,410	Chem.	1969-73
Floyd River at James, Iowa.	06600500	882	Temp., Sed.	1968-73
Floyd River at Sioux City, Iowa.	06600520	921	Chem.	1969-73
Missouri River at Decatur, Nebr.	06601200	316,160	Chem.	1974-81
Little Sioux River at Correctionville, Iowa.	06606600	2,500	Chem.*	1954-55
			Temp.*	1951-62
			Sed.	1950-62
Little Sioux River near Kennebec, Iowa.	06606700	2,738	Temp.	1950-55
			Sed.	1950-57
Little Sioux River at River Sioux, Iowa.	06607513	3,600	Chem.	1969-73
Soldier River near Mondamin, Iowa.	06608505	440	Chem.	1970-73
Steer Creek near Magnolia, Iowa.	06609200	9.26	Temp., Sed.	1963-69
Thompson Creek near Woodbine, Iowa.	06609590	6.97	Temp., Sed.	1963-69
Willow Creek near Logan, Iowa.	06609600	129	Chem., Temp.	1972-75
			Sed.	1971-75
Missouri River at Nebraska City, Nebraska.	06807000	410,000	Chem., Temp.	1951-77
			Sed.	1971-76
Mule Creek near Malvern, Iowa.	06808000	10.6	Temp.	1958-69
			Sed.	1954-69
Davids Creek near Hamlin, Iowa.	06809000	26.0	Temp.*	1952-53; 1965-68
East Nishnabotna River at Red Oak, Iowa.	06809500	894	Temp., Sed.	1962-73
Platte River near Diagonal, Iowa.	06818750	217	Chem.	1969-73
Thompson River at Davis City, Iowa.	06898000	701	Chem.	1967-73
			Temp., Sed.	1968-73
Weldon River near Leon, Iowa.	06898400	104	Chem.	1968-73
Chariton River near Chariton, Iowa.	06903400	182	Temp., Sed.	1969-73
Honey Creek near Russell, Iowa.	06903500	13.2	Sed.	1952-62
Chariton River near Rathbun, Iowa.	06903900	551	Temp.*, Sed.*	1962-69

Type of record: Chem. (chemical quality); Temp. (water temperature); Sed. (sediment).

05388250 UPPER IOWA RIVER NEAR DORCHESTER, IA

LOCATION.--Lat 43°25'16", long 91°30'31", in SW1/4 NW1/4 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 18.1 mi upstream from mouth.

DRAINAGE AREA.--770 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 660.00 ft above NGVD. 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.--Estimated daily discharges: Dec. 3, 5-26, Dec. 31 to Feb. 22. Records good except for periods of estimated daily discharges, which are poor. U.S. Geological Survey gage-height telemeter at station.

AVERAGE DISCHARGE.--10 years, 600 ft³/s, 10.58 in/yr, 434,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s Mar. 12, 1976, gage height, 17.67 ft; minimum daily, 79 ft³/s Dec. 31, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1941, reached a stage of 21.8 ft, from flood profile, file, discharge, 30,400 ft³/s on basis of slope-area determination of peak flow.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	0945	4,210	11.92	Mar. 11	0915	5,880	13.27
Feb. 21	1745	*6,630	*a16.03				

a Ice jam.
Minimum discharge, 113 ft³/s Dec. 4, result of freeze up.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	242	427	288	580	245	1700	525	564	329	244	169	144
2	241	589	286	450	245	1470	495	538	309	239	166	148
3	242	425	230	370	240	1120	508	519	291	238	160	146
4	242	407	169	390	240	876	729	495	281	234	157	149
5	242	370	190	420	235	569	1350	477	268	231	157	607
6	243	348	180	435	235	555	1560	457	264	231	156	873
7	247	330	270	450	230	569	1340	439	257	231	154	420
8	265	318	430	400	230	733	1120	430	257	231	153	339
9	255	309	480	370	230	2290	982	414	256	228	150	476
10	250	326	410	340	230	5180	886	397	242	232	274	501
11	250	336	355	310	225	4650	821	388	246	236	214	383
12	250	342	390	300	225	2710	774	389	253	219	179	331
13	250	336	380	300	225	1720	732	381	249	224	204	300
14	250	336	360	295	220	1420	696	377	242	220	183	278
15	265	336	360	290	220	1190	670	381	242	228	166	262
16	282	336	400	280	220	1020	649	369	242	245	157	250
17	322	331	520	270	230	894	611	369	241	226	153	241
18	315	320	450	260	230	735	585	368	243	234	152	230
19	311	317	410	250	240	663	562	368	242	235	143	220
20	300	308	400	240	250	601	536	361	237	235	141	212
21	289	318	425	240	2000	556	550	344	227	235	136	208
22	273	299	450	250	4200	528	543	335	230	214	125	206
23	262	323	420	255	3300	511	566	321	225	181	125	253
24	255	308	350	260	4100	510	635	313	218	184	125	297
25	252	299	280	265	2910	501	625	320	216	192	132	289
26	260	288	300	265	1860	489	634	312	220	180	135	310
27	263	298	432	260	1470	488	659	305	294	174	128	336
28	280	291	2630	255	1100	504	653	304	270	173	126	330
29	274	289	1810	250	---	524	630	300	272	169	141	327
30	268	289	1020	250	---	523	592	293	252	165	165	457
31	261	---	720	250	---	543	---	330	---	163	152	---
TOTAL	8201	10149	15795	9800	25585	36342	22218	11958	7615	6671	4878	9523
MEAN	265	338	510	316	914	1172	741	386	254	215	157	317
MAX	322	589	2630	580	4200	5180	1560	564	329	245	274	873
MIN	241	288	169	240	220	488	495	293	216	163	125	144
CFSM	.34	.44	.66	.41	1.19	1.52	.96	.50	.33	.28	.20	.41
IN.	.40	.49	.76	.47	1.24	1.76	1.07	.58	.37	.32	.24	.46
AC-FT	16270	20130	31330	19440	50750	72080	44070	23720	15100	13230	9680	18890

CAL YR 1984	TOTAL	277885	MEAN	759	MAX	4800	MIN	169	CFSM	.99	IN.	13.43	AC-FT	551200
WTR YR 1985	TOTAL	168735	MEAN	462	MAX	5180	MIN	125	CFSM	.60	IN.	8.15	AC-FT	334700

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA

LOCATION.--Lat 43°01'29", 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 mi², approximately.

WATER-DISCHARGE RECORDS

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. 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.--Estimated daily discharge: Dec. 6 to Feb. 25, Mar. 3-10. Records good except those for periods of estimated daily discharge, which are fair. Stage-discharge relation affected by backwater from Wisconsin River and Lock and Dam No. 10. Minor flow regulation caused by navigation dams.

COOPERATION.--Auxillary gage-height and discharge data at Lock and Dam No. 9 furnished by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--49 years, 35,110 ft³/s, 7.06 in/yr, 25,440,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 276,000 ft³/s Apr. 24, 1965; maximum gage height, 25.38 ft Apr. 24, 1965; minimum daily discharge, 6,200 ft³/s Dec. 9, 1936; minimum gage height, -0.86 ft Aug. 18, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1828, that of Apr. 24, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 110,000 ft³/s Apr. 4-5; maximum gage height, 15.71 ft Apr. 5; minimum daily discharge, 17,300 ft³/s Dec. 8; minimum gage height, 6.76 ft Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32100	75300	38900	40500	22600	63400	105000	90400	49600	39000	32800	36100
2	31700	76300	40100	40000	22600	57800	108000	94500	51300	40000	31000	33700
3	31200	76800	39900	37500	22500	54000	109000	97400	51500	42600	30300	28800
4	30700	77900	33500	35000	22500	49000	110000	98500	49800	46200	29800	29700
5	29800	78000	28100	33500	22500	45000	110000	99800	46300	49600	28300	34400
6	28500	75700	22500	33500	21300	40000	109000	100000	45300	51700	26700	38100
7	27200	72500	18000	32500	21300	38000	106000	98900	45300	52800	26300	39700
8	25800	71000	17300	32500	21000	38500	104000	97000	46700	53200	26700	41000
9	23500	68700	18000	32500	20200	40000	102000	94000	50000	52100	26400	42300
10	23300	65800	19500	32300	19400	45000	101000	92400	51900	51300	25600	43600
11	23800	59300	25000	31000	19400	54000	99700	89600	53400	50100	25600	45000
12	25000	54200	31000	31000	19700	61000	97400	87700	51800	48700	25300	46600
13	27700	52200	33500	30000	19900	70700	94100	83900	47200	46900	26400	48400
14	27800	52100	35000	29000	20000	76300	90500	80200	43900	44700	29900	52000
15	27900	55500	34300	27000	19500	81500	87200	77400	43400	42300	34200	56800
16	29100	57500	35000	24000	19600	81100	84200	75300	43500	38700	36100	60200
17	32100	57000	36200	24000	19700	80700	81600	73300	44000	35100	36700	60100
18	33800	55800	37000	23000	19700	79000	82200	70200	43900	31800	36800	58800
19	36600	51200	35000	22800	19600	76700	83400	67200	42400	31400	36500	56500
20	38700	46000	36000	22500	19500	75000	84700	65400	41100	31800	35500	54000
21	43000	41600	35000	22800	19700	75000	85200	64400	40600	32100	33400	51500
22	48900	37400	34500	22800	22000	77000	84900	64600	40600	31600	32500	50600
23	54500	36600	35000	22700	31000	80300	83300	65500	40500	30000	32000	51300
24	58400	37100	36500	22700	43000	83700	81400	66300	40400	27500	32500	51400
25	60200	38000	36800	22700	58000	87000	79300	66100	40500	27700	33100	50200
26	62600	37800	37800	22800	72500	90600	77800	65900	40300	30400	32900	50200
27	64200	36200	38300	22500	71300	94800	77900	65000	39600	32200	28500	50800
28	67000	34500	39800	22700	68600	97700	79800	62100	38500	33700	27200	51700
29	69100	34100	41000	22500	---	99900	82500	57900	38500	34800	28800	54900
30	71000	36400	41000	22500	---	99900	86400	53900	38700	34800	31300	61600
31	71700	---	41000	22500	---	102000	---	51200	---	33800	34700	---
TOTAL	1256900	1648500	1030500	863300	798600	2194600	2767500	2416000	1340500	1228600	953800	1430000
MEAN	40550	54950	33240	27850	28520	70790	92250	77940	44680	39630	30770	47670
MAX	71700	78000	41000	40500	72500	102000	110000	100000	53400	53200	36800	61600
MIN	23300	34100	17300	22500	19400	38000	77800	51200	38500	27500	25300	28800
CFSM	.60	.81	.49	.41	.42	1.05	1.37	1.15	.66	.59	.46	.71
IN.	.69	.91	.57	.48	.44	1.21	1.53	1.33	.74	.68	.53	.79
AC-FT	2493000	3270000	2044000	1712000	1584000	4353000	5489000	4792000	2659000	2437000	1892000	2836000

CAL YR 1984 TOTAL 19817200 MEAN 54150 MAX 117000 MIN 15100 CFSM .80 IN. 10.92 AC-FT 39307000
WTR YR 1985 TOTAL 17928800 MEAN 49120 MAX 110000 MIN 17300 CFSM .73 IN. 9.88 AC-FT 35562000

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected by boat 1.5 mi downstream from discharge station. Prior to April 1981, at bridge on U.S. Highway 18, 1.2 mi upstream from gage.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1975 to current year.
WATER TEMPERATURES: July 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: July 1975 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 882 mg/L Mar. 21, 1982; minimum daily mean, 1 mg/L Dec. 23-25, 1976, Dec. 20, 28, 1977.
SEDIMENT LOADS: Maximum daily, 166,000 tons Mar. 31, 1979; minimum daily, 31 tons Dec. 25, 1976.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 409 mg/L Feb. 24; minimum daily mean, 3 mg/L Feb. 8-12.
SEDIMENT LOADS: Maximum daily, 55,700 tons Feb. 25; minimum daily, 157 tons Feb. 10, 11.

SPECIFIC CONDUCTANCE (MICROSEIMENS/CM AT 25 DEG. C.), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	390	---	---	---	---	---	---	---
2	---	---	---	495	---	350	305	340	---	---	380	---
3	---	375	450	---	---	---	---	---	390	---	---	---
4	---	---	---	---	---	---	---	---	---	410	---	---
5	---	---	---	380	410	---	290	0	---	---	---	---
6	370	355	---	---	---	345	---	360	---	405	380	---
7	---	---	455	---	---	---	---	---	410	---	---	330
8	---	---	---	---	460	---	---	380	---	---	---	---
9	---	---	---	380	---	375	---	---	---	420	380	---
10	415	350	450	---	---	---	315	340	---	---	---	---
11	---	---	---	---	---	---	---	---	395	---	---	340
12	---	---	---	405	460	---	305	---	---	395	---	---
13	---	370	430	---	---	370	---	---	420	---	---	340
14	---	---	---	---	---	---	---	335	---	---	360	---
15	---	---	---	470	---	---	340	---	---	---	---	---
16	---	380	---	---	375	300	---	385	---	---	---	---
17	---	---	430	---	---	---	---	---	425	360	360	---
18	---	---	---	390	---	---	360	---	---	---	---	350
19	---	---	---	---	---	300	---	---	410	380	---	---
20	---	380	---	---	375	---	---	385	---	---	---	---
21	---	---	480	---	---	---	---	---	---	380	320	---
22	---	400	---	385	---	340	310	---	---	---	---	---
23	---	---	---	---	245	---	---	---	---	---	---	---
24	---	405	---	---	---	---	---	385	---	---	320	---
25	---	---	---	---	240	350	---	---	---	---	---	---
26	---	---	425	400	---	---	325	---	---	340	---	---
27	---	---	---	---	---	---	---	---	375	---	---	---
28	---	400	420	---	240	325	---	400	---	---	340	---
29	---	---	---	400	---	---	340	---	---	380	---	---
30	380	420	480	---	---	---	---	---	430	---	---	---
31	---	---	---	---	---	---	---	400	---	---	370	---

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C.) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---				---	---	---	---	---	---	---
2	15.0	---				---	7.0	12.0	---	---	26.0	---
3	---	6.0				---	---	---	20.5	---	---	---
4	---	---				---	---	21.0	---	26.0	---	24.0
5	---	---				---	10.0	---	---	---	---	---
6	20.0	5.0				---	---	14.0	---	27.0	26.0	---
7	---	---				---	---	14.0	21.0	---	---	21.0
8	---	---				---	---	19.0	---	---	---	---
9	---	---				---	---	16.0	---	26.5	26.0	---
10	17.0	4.0				---	8.0	---	---	---	---	---
11	14.0	---				---	---	---	20.5	---	---	22.0
12	---	---				---	10.0	---	---	28.0	---	---
13	14.0	4.0				---	---	---	20.0	---	---	21.0
14	---	---				---	---	20.0	---	---	24.0	---
15	---	---				---	14.0	---	---	---	---	---
16	10.0	3.0				---	---	18.0	---	---	---	---
17	---	---				---	---	---	21.0	27.0	26.0	---
18	---	---				---	14.0	---	---	---	---	21.0
19	10.0	---				---	---	---	21.0	27.0	---	---
20	---	1.0				8.5	---	18.0	---	---	---	---
21	---	---				---	---	---	---	27.0	25.0	21.0
22	10.0	.0				6.0	18.0	---	---	---	---	---
23	---	---				---	---	---	---	---	---	---
24	---	1.0				---	---	19.0	---	---	24.0	---
25	---	---				6.0	---	---	---	---	---	---
26	10.0	---				---	12.0	---	---	27.0	---	---
27	---	---				---	---	---	21.0	---	---	---
28	---	.0				8.0	---	23.0	---	---	26.0	16.0
29	---	---				---	16.5	---	---	26.0	---	---
30	9.0	.0				---	---	---	26.0	---	---	---
31	---	---				---	---	24.0	---	---	22.0	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	60	5200	65	13200	10	1050	21	2300	11	671	20	3420
2	23	1970	64	13200	8	866	21	2270	10	610	19	2970
3	18	1520	55	11400	5	539	22	2230	9	547	18	2620
4	17	1410	50	10500	5	452	22	2080	8	486	21	2780
5	20	1610	49	10300	6	455	22	1990	7	425	56	6800
6	22	1690	49	10000	7	425	24	2170	5	288	69	7450
7	30	2200	49	9590	7	340	26	2280	4	230	67	6870
8	26	1810	49	9390	7	327	28	2460	3	170	50	5200
9	21	1330	49	9090	7	340	30	2630	3	164	41	4430
10	21	1320	48	8530	7	369	31	2700	3	157	34	4130
11	17	1090	39	6240	8	540	41	3430	3	157	37	5490
12	20	1350	31	4540	10	837	51	4270	3	160	46	7580
13	24	1790	26	3660	12	1090	53	4290	5	269	59	11300
14	26	1950	44	6190	14	1320	53	4150	11	594	64	13200
15	29	2180	74	11100	14	1300	54	3940	17	895	69	15200
16	32	2510	86	13400	11	1040	50	3240	24	1270	82	18000
17	35	3030	80	12300	9	880	38	2460	27	1440	110	24000
18	44	4020	66	9940	7	699	28	1740	30	1600	108	23000
19	54	5340	47	6500	6	567	28	1720	34	1800	90	18600
20	53	5540	29	3600	19	1850	28	1700	37	1950	55	11100
21	43	4990	28	3140	47	4440	28	1720	50	2660	43	8710
22	30	3960	31	3130	59	5500	27	1660	108	6420	37	7690
23	24	3530	31	3060	60	5670	24	1470	215	18000	37	8020
24	23	3630	26	2600	54	5320	22	1350	409	47500	37	8360
25	26	4230	22	2260	45	4470	18	1100	356	55700	36	8460
26	34	5750	19	1940	34	3470	15	923	207	40500	37	9050
27	38	6590	16	1560	30	3100	14	850	90	17300	46	11800
28	39	7060	12	1120	28	3010	14	858	31	5740	57	15000
29	46	8580	12	1100	24	2660	14	850	---	---	66	17800
30	56	10700	13	1280	22	2440	13	790	---	---	67	18100
31	62	12000	---	---	22	2440	12	729	---	---	64	17600
TOTAL	---	119880	---	203860	---	57806	---	66350	---	207703	---	324730

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	55	15600	36	8790	57	7630	30	3160	19	1680	23	2240
2	40	11700	43	11000	60	8310	28	3020	17	1420	23	2090
3	37	10900	49	12900	83	11500	26	2990	20	1640	30	2330
4	35	10400	47	12500	98	13200	23	2870	38	3060	43	3450
5	32	9500	45	12100	87	10900	24	3210	36	2750	41	3810
6	30	8830	43	11600	76	9300	27	3770	26	1870	39	4010
7	28	8010	49	13100	66	8070	27	3850	23	1630	37	3970
8	27	7580	64	16800	67	8450	28	4020	29	2090	35	3870
9	25	6880	44	11200	68	9180	28	3940	38	2710	32	3650
10	23	6270	37	9230	69	9670	28	3880	40	2760	30	3530
11	23	6190	40	9680	69	9950	27	3650	46	3180	27	3280
12	23	6050	48	11400	67	9370	27	3550	37	2530	27	3400
13	26	6610	53	12000	64	8160	26	3290	24	1710	25	3270
14	32	7820	56	12100	64	7590	25	3020	23	1860	27	3790
15	38	8950	60	12500	65	7620	24	2740	60	5540	29	4450
16	42	9550	63	12800	67	7870	23	2400	48	4680	30	4880
17	45	9910	64	12700	67	7960	22	2080	30	2970	31	5030
18	49	10900	66	12500	63	7470	20	1720	26	2580	32	5080
19	48	10800	67	12200	58	6640	19	1610	27	2660	30	4580
20	44	10100	69	12200	52	5770	19	1630	25	2400	30	4370
21	40	9200	69	12000	47	5150	18	1560	22	1980	30	4170
22	37	8480	68	11900	42	4600	18	1540	17	1490	29	3960
23	41	9220	87	15400	36	3940	18	1460	20	1730	27	3740
24	52	11400	113	20200	41	4470	17	1260	25	2190	25	3470
25	61	13100	120	21400	53	5800	23	1720	29	2590	25	3390
26	71	14900	111	19800	51	5550	43	3530	33	2930	24	3250
27	77	16200	92	16100	38	4060	66	5740	34	2620	28	3840
28	60	12900	73	12200	29	3010	69	6280	20	1470	44	6140
29	32	7130	68	10600	28	2910	37	3480	17	1320	58	8600
30	30	7000	69	10000	30	3130	22	2070	18	1520	45	7480
31	---	---	75	10600	---	---	21	1920	20	1870	---	---
TOTAL	---	292080	---	399500	---	217230	---	90960	---	73430	---	123120

TOTAL LOAD FOR YEAR: 2176649 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR 20...	12:15	8.5	72800	50	9830	98

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
MAR 20...	13:10	72800	6	3	6	38	94	99	99	99	100
MAY 01...	12:30	85900	6	2	5	36	91	97	98	99	100

05411600 TURKEY RIVER AT SPILLVILLE, IA

LOCATION.--Lat 43°12'28", long 91°56'56", in SW1/4 NE1/4 sec.19, T.97 N., R.9 W., Winneshiek County, on right bank 60 ft downstream from bridge on county highway W14 at north edge of Spillville, 150 ft downstream from old mill dam, 0.6 mi upstream from Wonder Creek and at mile 98.5.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--June 1956 to September 1973, October 1977 to current year. Monthly discharge only for some periods, published in WSP 1728.

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

GAGE.--Water-stage recorder. Datum of gage is 1,034.92 ft above NGVD.

REMARKS.--Estimated daily discharges: Nov. 12-13, 16-23, Dec. 3-9, 11, Dec. 17 to Feb. 25 and Mar. 7-8, 13-20. Records good except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--25 years, 126 ft³/s, 9.67 in/yr, 91,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft³/s July 12, 1972, gage height, 16.73 ft; minimum daily, 4.4 ft³/s Feb. 1-3, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of 18.4 ft, from floodmark, discharge, about 10,000 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 24	2015	*3,980	*a12.43	Mar. 9	2300	2,480	10.21

(a) Ice jam.
Minimum discharge, 16 ft³/s Aug. 8,9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	74	44	130	30	1170	105	120	88	46	20	23
2	34	96	47	110	30	621	101	110	66	42	19	22
3	33	70	44	72	29	528	176	103	60	39	18	20
4	33	58	40	74	28	805	348	97	54	37	18	23
5	32	53	44	78	28	718	689	95	51	37	18	160
6	31	49	41	82	27	582	472	92	48	35	18	248
7	35	47	46	84	27	385	306	86	46	32	18	134
8	35	45	58	78	27	654	232	83	45	31	17	94
9	36	46	79	66	27	1510	203	78	42	30	30	130
10	34	49	101	60	27	1900	186	76	41	31	35	118
11	35	56	97	56	27	973	177	76	49	28	25	91
12	38	53	113	54	26	460	165	78	48	27	23	76
13	37	51	129	54	26	276	157	74	44	28	25	69
14	36	52	118	54	26	223	148	73	42	33	21	64
15	40	72	128	48	26	177	142	73	47	37	21	61
16	45	66	152	45	27	164	133	73	47	31	20	57
17	48	60	170	43	27	149	122	70	44	28	22	54
18	48	54	147	39	27	129	115	66	42	27	21	51
19	47	49	130	36	27	114	108	64	39	26	20	49
20	45	46	120	34	28	105	102	62	38	25	19	48
21	41	48	130	34	300	96	100	58	37	25	19	48
22	40	60	140	34	1600	92	100	56	36	23	20	51
23	38	54	120	35	1400	92	126	54	34	23	20	59
24	38	51	92	36	1800	97	204	53	32	23	20	67
25	38	47	85	37	2400	102	178	51	31	22	19	89
26	38	45	100	36	1840	94	164	54	32	20	19	96
27	39	45	130	34	1220	93	178	48	51	20	18	101
28	39	45	270	33	1080	109	163	47	84	19	19	93
29	39	46	400	33	---	138	142	46	60	19	30	103
30	38	45	240	32	---	130	128	48	51	19	31	275
31	39	---	170	31	---	124	---	72	---	21	26	---
TOTAL	1182	1632	3725	1672	12187	12810	5670	2236	1429	884	669	2574
MEAN	38.1	54.4	120	53.9	435	413	189	72.1	47.6	28.5	21.6	85.8
MAX	48	96	400	130	2400	1900	689	120	88	46	35	275
MIN	31	45	40	31	26	92	100	46	31	19	17	20
CFSM	.22	.31	.68	.30	2.46	2.33	1.07	.41	.27	.16	.12	.48
IN.	.25	.34	.78	.35	2.56	2.69	1.19	.47	.30	.19	.14	.54
AC-FT	2340	3240	7390	3320	24170	25410	11250	4440	2830	1750	1330	5110

CAL YR 1984	TOTAL	55747	MEAN	152	MAX	1460	MIN	30	CFSM	.86	IN.	11.72	AC-FT	110600
WTR YR 1985	TOTAL	46670	MEAN	128	MAX	2400	MIN	17	CFSM	.72	IN.	9.81	AC-FT	92570

05412500 TURKEY RIVER AT GARBER, IA

LOCATION.--Lat 42°44'24", long 91°15'42", in SE1/4 NW1/4 sec.36, T.92 N., R.4 W., Clayton County, Hydrologic Unit 07060004, on left bank 10 ft downstream 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 mi downstream from Volga River, and 19.8 mi upstream from mouth.

DRAINAGE AREA.--1,545 mi².

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.

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

REMARKS.--Estimated daily discharges: Dec. 3-8, Dec. 17 to Feb. 21, Mar. 18, July 1-15. Records fair except for periods of estimated record, Dec. 3-8, Dec. 17 to Feb. 21, which are poor. U.S. Army Corps of Engineers operate a Data Collection Platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--65 years (1913-16, 1919-27, 1929-30, 1932-85), 953 ft³/s, 8.38 in/yr, 690,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,300 ft³/s Feb. 23, 1922, gage height, 28.06 ft, from flood-mark; minimum daily, 49 ft³/s Jan. 28, 29, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, that of Feb. 23, 1922.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 24	0300	*12,300	*19.11	Mar. 9	0300	9,390	17.13

Minimum discharge, 206 ft³/s Aug. 8-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	304	1240	402	800	300	1990	1070	993	640	398	268	354
2	304	1010	430	640	295	1930	1030	923	575	398	254	319
3	300	814	390	540	292	1700	1200	875	545	342	244	296
4	292	730	380	560	288	1740	1620	829	510	310	242	280
5	295	605	380	580	285	1390	2230	796	480	290	241	636
6	300	550	410	600	285	1150	2770	803	460	282	231	879
7	337	505	450	620	280	1470	2380	759	435	282	221	788
8	331	485	490	620	280	4910	1890	704	425	274	211	876
9	341	505	528	560	275	7320	1640	671	406	270	212	680
10	342	525	532	500	275	5290	1480	640	386	294	273	722
11	344	500	543	450	272	4620	1370	675	390	286	475	588
12	362	480	551	420	270	3150	1280	696	410	278	341	543
13	354	480	491	430	270	2360	1190	649	398	270	456	485
14	350	490	441	440	265	1900	1120	651	382	262	406	433
15	408	480	496	440	265	1660	1070	643	362	254	319	409
16	468	455	707	400	270	1460	1010	630	475	250	288	380
17	797	485	560	370	275	1300	943	615	435	238	264	362
18	536	495	400	340	280	1140	904	590	398	254	249	347
19	687	480	370	295	285	1060	861	566	374	266	235	332
20	523	420	420	295	290	979	817	553	362	242	226	316
21	457	382	540	300	2500	908	789	536	382	238	224	311
22	411	430	660	305	9900	860	846	506	370	226	218	334
23	381	445	540	310	8320	891	1270	488	346	218	218	486
24	369	460	580	315	9920	964	1300	477	324	208	245	629
25	371	455	840	320	6230	973	1350	465	318	611	242	550
26	384	455	1300	325	3720	969	1320	453	322	771	234	551
27	387	470	1700	320	2470	956	1230	448	318	398	228	628
28	431	455	4300	315	1920	1070	1190	437	318	318	216	648
29	398	435	2100	310	---	1070	1140	415	346	279	281	684
30	378	420	1200	310	---	1080	1060	405	350	262	429	930
31	366	---	910	305	---	1130	---	685	---	273	398	---
TOTAL	12308	16141	24041	13335	50577	59390	39370	19576	12242	9542	8589	15776
MEAN	397	538	776	430	1806	1916	1312	631	408	308	277	526
MAX	797	1240	4300	800	9920	7320	2770	993	640	771	475	930
MIN	292	382	370	295	265	860	789	405	318	208	211	280
CFSM	.26	.35	.50	.28	1.17	1.24	.85	.41	.26	.20	.18	.34
IN.	.30	.39	.58	.32	1.22	1.43	.95	.47	.29	.23	.21	.38
AC-FT	24410	32020	47690	26450	100300	117800	78090	38830	24280	18930	17040	31290

CAL YR 1984	TOTAL	468203	MEAN	1279	MAX	10000	MIN	292	CFSM	.83	IN.	11.27	AC-FT	928700
WTR YR 1985	TOTAL	280887	MEAN	770	MAX	9920	MIN	208	CFSM	.50	IN.	6.76	AC-FT	557100

05418450 NORTH FORK MAQUOKETA RIVER AT FULTON, IA

LOCATION.--Lat 42°08'48", long 90°40'33" in N1/4 sec.25, T.85 N., R.2 E, Jackson County, Hydrologic Unit 07060006, on right downstream bank at bridge on State Highway 61, 7.8 mi upstream from mouth, and 5.5 mi north of junction of State Highway 64 and 61 and 0.5 mi south of Fulton.

DRAINAGE AREA.--516 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 666.19 ft above NGVD. Nonrecording gage July 7 to September 22, 1977.

REMARKS.-Estimated daily discharges: Oct. 1-16, Oct. 21 to Nov. 14, Nov. 18-22, Dec. 2-28, Jan. 1 to Feb. 22, April 8-29, Aug. 31 to Sept. 8. Records good except those for Oct. 1-16, Oct. 21 to Nov.14 and April 8-29, which are fair and Nov. 18-22, Dec. 2-28, Jan. 1 to Feb. 22, and Aug. 31 to Sept. 8, which are poor.

AVERAGE DISCHARGE.--8 years, 368 ft³/s, 9.68 in/yr, 266,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s Aug. 31, 1981, gage height, 17.26 ft; minimum daily, 70 ft³/s July 11, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1974 reached a stage of 16.0 ft., from floodmark, discharge 10,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	2330	2,670	8.27	Dec. 28	2030	2,800	8.43
Nov. 9	----	unknown	unknown	Feb. 22	0030	*10,400	*a17.14

(a) Ice jam
Minimum discharge, 127 ft³/s Sept.15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	969	247	250	190	541	580	304	244	156	155	185
2	162	707	240	230	190	557	521	281	240	160	147	171
3	162	506	195	200	185	474	533	274	232	155	149	163
4	160	419	172	190	185	710	605	276	224	156	142	163
5	164	349	180	230	185	1290	595	285	223	154	146	420
6	166	304	162	300	180	689	588	339	222	151	156	409
7	219	289	200	368	180	547	567	348	215	150	145	247
8	229	301	310	327	175	772	498	313	215	149	136	188
9	200	2270	300	270	175	1180	447	291	214	146	140	166
10	182	783	270	230	175	778	416	278	210	145	291	155
11	173	376	248	210	170	634	401	291	223	147	204	147
12	171	310	260	190	170	562	387	316	218	152	162	139
13	175	295	260	200	170	516	372	347	207	152	196	134
14	178	272	233	260	170	502	365	365	203	154	217	132
15	180	280	259	235	170	486	354	694	221	194	185	132
16	239	264	415	215	175	447	344	412	210	150	169	132
17	1390	249	510	205	180	424	323	362	206	146	158	140
18	697	240	320	200	185	404	316	331	200	145	153	140
19	1540	235	280	180	190	390	309	312	197	159	147	140
20	732	230	270	180	200	378	309	301	190	171	142	134
21	422	240	290	185	3000	360	302	286	192	163	144	135
22	328	240	506	190	8000	350	299	274	228	156	144	152
23	258	242	433	210	3610	352	320	265	205	154	146	256
24	222	233	285	230	3400	382	323	264	181	145	153	286
25	227	233	230	240	1380	407	313	261	178	160	176	211
26	227	234	240	220	819	385	306	260	181	179	173	199
27	250	328	290	210	617	378	302	287	181	175	160	186
28	660	280	900	205	517	437	299	263	172	158	152	175
29	364	259	1670	200	---	493	313	253	169	152	150	172
30	286	254	691	200	---	473	303	252	164	150	152	189
31	292	---	447	195	---	513	---	251	---	159	226	---
TOTAL	10819	12191	11313	6955	24943	16811	11910	9636	6165	4843	5116	5598
MEAN	349	406	365	224	891	542	397	311	206	156	165	187
MAX	1540	2270	1670	368	8000	1290	605	694	244	194	291	420
MIN	160	230	162	180	170	350	299	251	164	145	136	132
CFSM	.68	.79	.71	.43	1.73	1.05	.77	.60	.40	.30	.32	.36
IN.	.78	.88	.82	.50	1.80	1.21	.86	.69	.44	.35	.37	.40
AC-FT	21460	24180	22440	13800	49470	33340	23620	19110	12230	9610	10150	11100

CAL YR 1984	TOTAL	145101	MEAN	396	MAX	5220	MIN	148	CFSM	.77	IN.	10.46	AC-FT	287800
WTR YR 1985	TOTAL	126300	MEAN	346	MAX	8000	MIN	132	CFSM	.67	IN.	9.11	AC-FT	250500

05418500 MAQUOKETA RIVER NEAR MAQUOKETA, IA

LOCATION.--Lat 42°05'05", long 90°38'04", in SW1/4 NE1/4 sec.17, T.84 N., R.3 E., Jackson County, Hydrologic Unit 07060006, on right bank 300 upstream from bridge on State Highway 62, 1,200 ft upstream from Prairie Creek, 2.0 mi northeast of Maquoketa, 2.2 mi downstream from North Fork, and 26.7 mi upstream from mouth.

DRAINAGE AREA.--1,553 mi².

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. Prior to July 14, 1924, nonrecording gage, and July 15, 1924 to Sept. 30, 1972, recording gage at same site at datum 10.00 ft higher.

REMARKS--Estimated daily dicharges: Dec. 4-6, 18-26, Jan. 1 to Feb.22. Records good except those for estimated discharges, which are poor. Diurnal fluctuation caused by powerplant 4 mi upstream of station. U.S. Army Corps of Engineers Data Collection Platform at station.

COOPERATION.--Three discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--72 years, 1,028 ft³/s, 8.99 in/yr, 744,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s June 27, 1944, gage height, 24.70 ft, at datum then in use; minimum daily, 105 ft³/s Feb. 11-20, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood, probably in 1903, reached a stage of 23.5 ft, discharge, 43,000 ft³/s, at datum in use prior to Oct. 1, 1972.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	1115	*17,600	*a29.00

Date	Time	Discharge (ft³/s)	Gage height (ft)
No other peak greater than base discharge.			

(a) Ice jam.
Minimum discharge, 253 ft³/s Sept. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	474	1930	758	970	600	2050	1960	938	676	444	425	390
2	456	1710	812	860	590	2030	1810	905	669	489	425	377
3	456	1770	757	780	580	1760	1830	874	651	487	425	367
4	470	1480	535	720	570	2750	1980	856	645	436	423	362
5	466	1180	540	740	560	4910	2150	823	591	436	441	388
6	463	1150	550	980	550	3050	2090	942	597	444	446	659
7	553	1080	561	1230	550	2160	2010	1030	602	422	442	490
8	518	1020	641	1100	540	2090	1860	999	589	436	412	447
9	503	2410	802	960	540	3360	1680	942	586	411	418	387
10	496	2270	806	820	535	3380	1550	907	573	414	710	361
11	477	1230	816	740	530	2560	1490	912	621	399	617	361
12	497	1020	884	690	525	2140	1330	942	567	394	511	391
13	531	1000	870	670	520	1850	1280	1030	590	412	517	381
14	534	894	807	720	520	1730	1230	1070	566	396	548	377
15	530	933	828	760	520	1680	1230	1510	647	469	466	371
16	650	848	1090	740	540	1530	1140	1130	607	369	439	380
17	2060	888	1230	680	560	1370	1100	1070	611	374	435	400
18	1270	796	1160	650	580	1300	1060	1020	627	358	424	389
19	3220	717	980	620	600	1260	1020	985	583	369	405	385
20	1820	702	920	580	700	1390	1010	949	581	378	391	375
21	1210	647	940	560	4500	932	989	928	580	396	385	390
22	969	711	1050	580	15000	1030	968	899	592	371	387	414
23	852	717	1100	610	13100	1160	1020	786	586	351	382	592
24	740	708	870	650	9330	1220	1100	808	561	353	485	643
25	773	718	560	680	6030	1310	1130	760	499	385	498	526
26	769	718	600	680	4140	1360	1120	788	520	414	494	534
27	790	855	676	660	2890	1360	1120	770	513	428	478	475
28	1070	851	2620	640	2080	1430	1050	824	507	431	391	526
29	1160	820	3540	625	---	1560	1020	655	473	386	383	469
30	933	813	2790	615	---	1690	968	789	499	409	383	525
31	873	---	1880	600	---	1810	---	682	---	446	382	---
TOTAL	26583	32586	32973	22910	68280	59212	41295	28523	17509	12707	13968	13132
MEAN	858	1086	1064	739	2439	1910	1377	920	584	410	451	438
MAX	3220	2410	3540	1230	15000	4910	2150	1510	676	489	710	659
MIN	456	647	535	560	520	932	968	655	473	351	382	361
CFSM	.55	.70	.69	.48	1.57	1.23	.89	.59	.38	.26	.29	.28
IN.	.64	.78	.79	.55	1.64	1.42	.99	.68	.42	.30	.33	.31
AC-FT	52730	64630	65400	45440	135400	117400	81910	56580	34730	25200	27710	26050

CAL YR 1984	TOTAL	445048	MEAN	1216	MAX	7660	MIN	380	CFSM	.78	IN.	10.66	AC-FT	882800
WTR YR 1985	TOTAL	369678	MEAN	1013	MAX	15000	MIN	351	CFSM	.65	IN.	8.86	AC-FT	733300

05420500 MISSISSIPPI RIVER AT CLINTON, IA
(National stream-quality accounting network station)

LOCATION.--Lat 41°46'53", long 90°15'04", in NW1/4 sec.34, T.81 N., R.6 E., Clinton County, Hydrologic Unit 07080101, on right bank at foot of Seventh Avenue in Camanche, 5.0 mi upstream from Wapsipinicon River, 6.4 mi downstream from Clinton, 10.6 mi downstream from dam 13, and at mile 511.8 upstream from Ohio River. Prior to June 6, 1969, at site 400 ft downstream.

DRAINAGE AREA.--85,600 mi², 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").

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

GAGE.--Water-stage recorder. Datum of gage is 562.68 ft above NGVD. Oct. 1, 1955, to June 5, 1969, water-stage recorder at site 400 ft downstream at same datum. Auxiliary water-stage recorder at dam 13 since Oct. 1, 1958. See WSP 1728 for history of changes prior to Oct. 1, 1955.

REMARKS.--Estimated daily discharge: Oct. 22 to Nov. 20, Jan. 19 to Feb. 21, and Feb. 25. Records good except those for estimated daily discharges, which are fair. Minor flow regulation caused by navigation dams.

COOPERATION.--Discharge data at Lock and Dam No.13 furnished by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--112 years, 47,630 ft³/s, 7.56 in/yr, 34,510,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 307,000 ft³/s Apr. 28, 1965; maximum gage height, 24.65 ft Apr. 28, 1965; minimum daily discharge, 6,500 ft³/s Dec. 25-27, 1933.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 139,000 ft³/s Apr. 8; maximum gage height, 16.52 ft Apr. 8, minimum daily discharge, 18,500 ft³/s Dec. 9, minimum gage height, 8.82 ft. Aug. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37600	83000	41600	51000	30100	66200	117000	93300	61700	45000	43900	38900
2	39300	86000	42800	41000	29900	62900	121000	95600	58400	44600	41200	41600
3	42000	86000	48200	34500	29600	67500	122000	97600	56800	44500	36400	41800
4	42600	87500	50000	35600	29200	81300	124000	101000	57300	45900	33400	39800
5	38700	88000	42000	41100	29000	82500	128000	105000	57500	49700	31800	35600
6	36200	87500	27100	48100	28900	66500	133000	109000	57700	52300	31600	37300
7	35000	87500	19700	48900	28700	63500	138000	107000	56600	55200	31000	41200
8	36200	88000	19500	48700	27800	66800	139000	106000	53900	56100	30900	44400
9	36100	85000	18500	47700	27300	76300	138000	105000	53300	56200	29900	48700
10	33100	82000	22400	46000	27000	78300	133000	104000	53000	56100	30600	52700
11	30900	82000	27600	46000	26800	80000	129000	101000	54800	56000	29500	53500
12	29800	82500	31400	46700	26300	80100	125000	99400	58600	55500	30100	53500
13	32400	75000	36700	48200	25900	77400	123000	96400	60800	54200	30700	53000
14	35700	71000	41200	43300	25600	80600	121000	93100	57800	52500	36900	54100
15	35700	71000	41700	41700	25200	87200	115000	91500	55000	52700	38600	56800
16	38200	73000	44300	38600	25200	87600	109000	89600	53900	50600	37700	60300
17	44100	74000	50800	36700	25500	88700	103000	83700	51100	45500	36600	63700
18	47600	74000	52800	34900	25800	90200	97000	80600	49200	42000	41300	65100
19	54000	70000	51000	33400	25900	90900	93300	76400	49100	35800	45600	63600
20	62800	65000	47100	30000	26000	90000	91200	75900	48900	33300	45900	62900
21	58700	59100	43900	29000	29800	87900	91800	73600	48000	36500	44500	61700
22	57000	49100	42300	28500	59700	84800	92400	71500	46800	36500	39400	58700
23	61500	44200	40100	28800	84800	86600	93300	70100	47100	34600	35600	58300
24	66000	45100	39000	29300	98900	88800	98700	70000	47900	31700	32800	59100
25	72000	44900	30700	29600	96000	89100	99400	69900	47000	29400	35200	59000
26	77000	45400	24400	29800	81300	90700	95500	69500	46900	35200	38800	57400
27	78500	45100	28900	29900	72700	94300	94000	69600	47300	40800	38300	58600
28	80000	44600	39600	30000	70400	99800	92600	69800	47400	41200	37000	58500
29	82000	42600	68100	30000	---	104000	91200	69300	46700	40800	34900	59200
30	82500	40600	60700	30200	---	106000	90700	67400	45300	42100	36200	62000
31	81000	---	51700	30200	---	108000	---	65400	---	44100	38600	---
TOTAL	1584200	2058700	1225800	1167400	1139300	2604500	3339100	2677200	1575800	1396600	1124900	1601000
MEAN	51100	68620	39540	37660	40690	84020	111300	86360	52530	45050	36290	53370
MAX	82500	88000	68100	51000	98900	108000	139000	109000	61700	56200	45900	65100
MIN	29800	40600	18500	28500	25200	62900	90700	65400	45300	29400	29500	35600
CFSM	.60	.80	.46	.44	.48	.98	1.30	1.01	.61	.53	.42	.62
IN.	.69	.89	.53	.51	.50	1.13	1.45	1.16	.68	.61	.49	.70
AC-FT	3142000	4083000	2431000	2316000	2260000	5166000	6623000	5310000	3126000	2770000	2231000	3176000

CAL YR 1984 TOTAL 23420800 MEAN 63990 MAX 134000 MIN 18500 CFSM .75 IN. 10.18 AC-FT 46455000
WTR YR 1985 TOTAL 21494500 MEAN 58890 MAX 139000 MIN 18500 CFSM .69 IN. 9.34 AC-FT 42634000

05420500 MISSISSIPPI RIVER AT CLINTON, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected near bridge on State Highway 136 in Clinton, 6.4 mi upstream from discharge station.

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1976; October 1978 to September 1981.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Temperature data were collected at Dam 13 (Sta. 05420400). No temperature data collected October 1-30 while recorder was being repaired. Recorder clock stopped June 15 to June 24.

COOPERATION.--Temperature record was collected in cooperation with U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 560 microsiemens Nov. 24 to Dec. 3, 1979; minimum daily, 220 microsiemens Apr. 19,20, 1976; Nov. 8-18, 1980.
WATER TEMPERATURES: Maximum, 31.5°C July 21-23, 1983; minumum, 0.0°C on many days during winter periods each year.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.5°C July 14-15, 27-30; minimum, 0.0°C on many days during winter period.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	9.5	7.5	3.0	2.5	.0	.0	.0	.0	.0	.0
2	---	---	7.5	6.5	2.0	2.0	.0	.0	.0	.0	.0	.0
3	---	---	5.5	5.0	2.0	1.5	.0	.0	.0	.0	.0	.0
4	---	---	6.0	5.5	1.0	.5	.0	.0	.0	.0	.0	.0
5	---	---	6.5	4.5	.5	.5	.0	.0	.0	.0	.0	.0
6	---	---	4.0	4.0	.5	.5	.0	.0	.0	.0	.0	.0
7	---	---	4.0	4.0	.5	.5	.0	.0	.0	.0	.0	.0
8	---	---	6.0	5.0	.5	.5	.0	.0	.0	.0	.5	.0
9	---	---	5.5	5.0	.5	.5	.0	.0	.0	.0	.5	.0
10	---	---	5.0	4.5	.5	.5	.0	.0	.0	.0	1.0	.0
11	---	---	4.5	4.0	.5	.5	.0	.0	.0	.0	1.5	1.0
12	---	---	3.5	3.5	.5	.5	.0	.0	.0	.0	2.0	1.5
13	---	---	3.5	3.5	.5	.5	.0	.0	.0	.0	2.0	2.0
14	---	---	3.5	3.5	.5	.5	.0	.0	.0	.0	2.0	1.5
15	---	---	3.5	3.0	1.5	.5	.0	.0	.0	.0	3.0	2.0
16	---	---	3.0	2.0	1.5	1.0	.0	.0	.0	.0	3.0	2.5
17	---	---	2.5	2.0	1.5	.5	.0	.0	.0	.0	3.0	2.5
18	---	---	2.5	2.5	.5	.5	.0	.0	.0	.0	3.0	2.5
19	---	---	2.5	2.0	.5	.5	.0	.0	.0	.0	4.5	3.0
20	---	---	1.5	1.5	.5	.5	.0	.0	.0	.0	5.0	4.0
21	---	---	1.5	1.5	.5	.5	.0	.0	.0	.0	5.0	4.0
22	---	---	1.5	1.5	.0	.0	.0	.0	.0	.0	5.0	4.0
23	---	---	2.0	1.5	.0	.0	.0	.0	.0	.0	4.5	4.0
24	---	---	2.0	2.0	.0	.0	.0	.0	.0	.0	4.0	3.5
25	---	---	2.0	2.0	.0	.0	.0	.0	.0	.0	3.5	3.5
26	---	---	3.5	2.0	.0	.0	.0	.0	.0	.0	5.5	3.5
27	---	---	4.0	3.5	.0	.0	.0	.0	.0	.0	7.5	5.5
28	---	---	4.0	3.0	.0	.0	.0	.0	.0	.0	7.5	6.5
29	---	---	3.0	2.5	.0	.0	.0	.0	---	---	6.5	6.5
30	---	---	3.0	3.0	.0	.0	.0	.0	---	---	6.0	4.0
31	9.5	9.0	---	---	.0	.0	.0	.0	---	---	4.0	3.5
MONTH	9.5	9.0	9.5	1.5	3.0	.0	.0	.0	.0	.0	7.5	.0

05420500 MISSISSIPPI RIVER AT CLINTON, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.5	3.0	15.0	13.5	19.0	18.0	23.5	22.0	23.0	22.0	21.5	21.0
2	4.5	3.5	14.5	12.5	19.5	18.5	23.5	23.0	23.5	22.0	21.5	21.0
3	6.0	4.0	16.0	14.0	19.5	17.0	24.0	22.5	23.5	22.5	22.5	21.5
4	6.0	5.0	16.0	15.0	19.0	17.5	24.5	23.0	23.0	22.0	23.0	21.5
5	5.0	4.0	16.0	15.0	18.0	17.0	24.0	22.5	22.5	21.5	23.5	23.0
6	4.0	3.5	16.5	15.0	19.5	17.5	24.0	22.0	23.5	22.5	24.0	23.5
7	4.5	3.5	17.0	15.5	21.0	19.0	24.0	23.0	24.0	23.5	25.0	24.0
8	4.0	3.5	18.0	16.0	22.0	20.0	24.0	22.5	24.0	23.5	25.0	24.5
9	4.5	3.5	18.0	16.5	20.5	19.5	24.5	23.5	24.5	23.5	25.0	23.5
10	5.0	4.0	18.5	17.0	19.5	18.0	24.5	23.0	25.0	24.0	23.5	22.0
11	6.5	5.0	18.5	18.0	18.5	18.0	24.5	23.0	24.5	24.0	22.0	21.0
12	8.5	6.5	18.0	17.0	18.5	17.5	24.5	23.5	24.5	23.5	21.5	20.0
13	9.5	8.5	18.0	17.0	18.5	18.0	24.0	23.0	24.5	24.0	20.0	19.0
14	10.0	9.0	18.0	16.0	19.5	17.5	25.5	24.0	24.5	24.0	19.0	18.0
15	11.5	9.5	17.5	15.5	---	---	25.5	24.0	24.0	23.0	18.5	17.5
16	12.0	11.0	15.5	14.5	---	---	25.0	23.5	24.5	23.5	18.5	17.5
17	12.5	10.5	16.0	14.0	---	---	25.0	23.5	24.5	23.5	18.0	17.5
18	14.0	12.5	17.0	15.0	---	---	24.0	23.0	24.0	23.0	19.5	18.0
19	15.5	13.5	18.0	16.0	---	---	24.5	24.0	23.5	22.0	20.0	19.0
20	16.0	14.0	18.0	16.5	---	---	24.5	24.0	22.5	21.5	20.0	19.5
21	17.0	15.0	18.0	16.0	---	---	24.5	24.0	22.0	21.0	19.5	17.5
22	17.0	16.0	18.0	16.5	---	---	25.0	23.5	22.0	20.5	18.5	17.5
23	17.0	16.0	19.0	17.0	---	---	25.0	24.0	20.5	20.5	18.5	17.5
24	16.5	15.5	20.0	18.0	---	---	24.0	23.5	21.0	20.5	17.5	15.5
25	15.5	14.5	20.5	19.0	22.0	20.5	24.0	24.0	20.5	19.5	15.5	14.5
26	16.0	14.5	21.5	19.5	23.0	21.5	25.0	23.5	20.0	19.5	14.5	14.0
27	16.0	14.0	21.5	18.5	23.0	22.0	25.5	24.5	21.0	20.0	14.0	13.0
28	15.5	13.5	19.5	17.5	23.0	21.0	25.5	24.5	21.0	20.5	14.5	13.5
29	15.5	14.0	19.5	18.0	22.0	21.0	25.5	25.0	21.0	20.5	14.5	14.0
30	15.5	14.5	20.0	18.0	22.5	21.5	25.5	24.0	21.5	20.5	14.5	12.5
31	---	---	20.0	19.0	---	---	24.0	22.5	21.5	21.0	---	---
MONTH	17.0	3.0	21.5	12.5	23.0	17.0	25.5	22.0	25.0	19.5	25.0	12.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 1984												
20...	11:45	40000	335	8.7	2.0	20	12.6	93	751	76	12	34
MAR 1985												
12...	11:00	88600	336	7.9	2.0	54	12.7	93	753	K200	K1400	23
JUN												
04...	12:30	57800	365	7.5	18.0	21	6.6	71	750	K67	290	62
AUG												
28...	10:30	35900	305	8.4	21.5	9.5	8.4	97	750	K36	K68	6

DATE	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1984												
20...	160	39	15	6.5	8	0.2	2.5	--	34	12	0.1	9.9
MAR 1985												
12...	150	37	14	7.5	10	0.3	4.3	127	21	10	0.1	11
JUN												
04...	190	45	18	7.8	8	0.3	2.7	125	35	11	0.1	6.5
AUG												
28...	140	32	14	7.1	10	0.3	1.9	132	22	9.4	0.1	4.2

K Results based on colony count outside ideal range.

05420500 MISSISSIPPI RIVER AT CLINTON, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
NOV 1984												
20...	204	190	0.28	22000	1.30	0.11	0.14	1.2	0.07	--	0.08	0.13
MAR 1985												
12...	175	180	0.24	41900	1.60	0.54	0.7	2.2	0.12	--	0.13	0.38
JUN												
04...	225	200	0.31	35100	0.87	0.06	0.08	1.2	0.05	0.49	0.07	0.16
AUG												
28...	186	170	0.25	18000	0.15	0.02	0.03	0.9	0.07	0.37	0.09	0.12

DATE	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 1984												
20...	41	4430	96	<1	20	43	<0.5	<1	<1	<3	2	110
MAR 1985												
12...	188	45000	99	<1	100	65	<0.5	2	<1	<3	2	110
JUN												
04...	66	10300	88	<1	<10	50	<0.5	<1	<1	<3	11	16
AUG												
28...	323	31300	86	1	<10	31	<0.5	<1	<1	<3	5	13

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 1984											
20...	<1	7	12	<0.1	<10	3	<1	<1	76	<6	15
MAR 1985											
12...	<1	4	21	<0.1	<10	4	<1	1	61	<6	27
JUN											
04...	4	9	5	<0.1	<10	<1	<1	<1	100	<6	16
AUG											
28...	1	7	3	<0.1	<10	<1	<1	<1	70	<6	16

05420560 WAPSIPINICON RIVER NEAR ELMA, IA

LOCATION.--Lat 43°14'34", long 92°31'48", in NW1/4 NW1/4 sec.8, T.97 N., R.14 W., Howard County, Hydrologic Unit 07080102, on right bank 10 ft downstream from bridge on county highway B17, 0.2 mi downstream from small left-bank tributary, 4.8 mi west of Elma, and at mile 217.9.

DRAINAGE AREA.--95.2 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,130.05 ft above NGVD.

REMARKS.--Estimated daily discharge during water year: Oct.1, Dec. 1-5, Dec. 13 to March 11. Records good, except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--27 years, 68.1 ft³/s, 9.71 in/yr, 49,340 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s June 4, 1974, gage height, 14.94 ft, from high-water mark in well; maximum gage height, 15.38 ft, from high-water mark in well, probably occurred Aug. 22, 1979 (backwater from vegetation); minimum daily discharge, 1.9 ft³/s Feb. 4-8, 1959.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
March 8	----	606	ice jam	Sept. 5	1400	*749	*11.21

Minimum discharge, 2.6 ft³/s Aug. 3,4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	54	19	41	8.4	140	47	48	24	15	4.5	6.5
2	7.6	49	17	31	8.4	145	61	42	19	13	3.5	6.1
3	7.4	33	23	26	8.3	110	139	37	17	11	2.9	5.8
4	8.0	28	22	20	8.2	90	316	34	16	9.2	3.0	7.7
5	9.8	25	21	16	8.2	83	338	32	15	8.4	3.6	386
6	12	22	21	15	8.2	90	208	30	14	7.8	3.5	178
7	14	20	21	15	8.4	82	139	27	12	7.3	3.6	52
8	16	19	25	14	8.6	190	106	25	12	6.8	3.8	27
9	17	22	26	13	8.8	430	87	23	10	6.4	4.3	81
10	15	41	26	13	9.0	350	78	22	9.8	6.1	7.0	62
11	17	48	25	12	10	290	74	22	13	5.5	6.6	33
12	17	38	25	12	12	222	69	23	14	7.0	6.6	23
13	17	35	23	11	14	177	64	22	14	6.9	7.4	17
14	15	54	21	11	16	140	60	24	12	7.0	8.1	14
15	17	41	19	11	18	92	57	24	14	5.8	8.3	12
16	23	28	29	10	20	76	52	24	14	5.9	9.2	11
17	32	32	54	10	21	66	47	24	12	6.4	7.5	11
18	27	26	100	9.8	23	55	43	22	11	5.5	7.1	9.6
19	23	19	56	9.4	25	49	40	20	10	5.8	7.1	8.6
20	20	35	38	9.2	27	46	38	19	9.1	5.3	6.9	12
21	18	26	34	9.2	100	42	36	18	9.1	5.2	6.8	13
22	16	21	31	9.0	260	39	36	16	8.9	4.9	6.9	12
23	15	21	28	9.0	215	41	45	16	8.2	4.6	8.5	92
24	15	22	25	9.0	250	53	60	16	7.5	5.1	9.0	162
25	17	22	22	8.9	210	47	66	15	7.0	7.2	7.1	103
26	21	22	20	8.8	180	43	82	15	32	5.2	6.5	90
27	20	22	19	8.8	160	49	99	14	67	4.3	6.3	67
28	21	22	100	8.7	135	72	79	13	30	3.8	7.4	50
29	23	21	97	8.6	---	68	65	12	22	3.6	27	125
30	20	21	72	8.6	---	57	55	22	18	3.4	15	348
31	19	---	48	8.5	---	51	---	71	---	4.2	8.5	---
TOTAL	530.8	889	1107	406.5	1780.5	3485	2686	772	481.6	203.6	223.5	2025.3
MEAN	17.1	29.6	35.7	13.1	63.6	112	89.5	24.9	16.1	6.57	7.21	67.5
MAX	32	54	100	41	260	430	338	71	67	15	27	386
MIN	7.4	19	17	8.5	8.2	39	36	12	7.0	3.4	2.9	5.8
CFSM	.18	.31	.37	.14	.67	1.18	.94	.26	.17	.07	.08	.71
IN.	.21	.35	.43	.16	.70	1.36	1.05	.30	.19	.08	.09	.79
AC-FT	1050	1760	2200	806	3530	6910	5330	1530	955	404	443	4020

CAL YR 1984	TOTAL	42530.8	MEAN	116	MAX	3340	MIN	7.4	CFSM	1.22	IN.	16.62	AC-FT	84360
WTR YR 1985	TOTAL	14590.8	MEAN	40.0	MAX	430	MIN	2.9	CFSM	.42	IN.	5.70	AC-FT	28940

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 at mile 142.5.

DRAINAGE AREA.--1,048 mi².

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. Prior to May 24, 1941 nonrecording gage in tailrace of powerplant 1,800 ft upstream at datum 80.00 ft lower.

REMARKS.--Estimated daily discharges: Dec. 18-20, 24-26, Dec. 31 to Jan. 6, Jan. 10-13, 15-22, 26, 27, Jan. 29 to Feb. 3, Feb. 21-22. Records are excellent except for period of estimated daily discharges, which are fair. U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE.--52 years, 622 ft³/s, 8.06 in/yr, 450,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft³/s July 18, 1968, gage height, 21.11 ft; minimum daily, 7.0 ft³/s for several days in 1934 and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, that of July 18, 1968.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	0115	*3,090	*7.57				

Minimum discharge, 35 ft³/s Aug. 8-9, 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	253	178	580	90	2520	897	643	157	190	69	110
2	64	311	191	500	88	2790	878	583	226	177	64	94
3	64	363	114	390	86	2130	1160	520	236	144	59	96
4	57	386	102	300	87	1770	1380	467	245	133	57	89
5	58	332	111	280	90	1660	1490	483	213	112	59	107
6	61	289	102	300	88	1490	1520	584	182	105	53	156
7	86	256	113	284	85	1410	1500	505	166	95	50	230
8	89	242	120	250	88	2040	1500	436	151	88	41	231
9	87	235	124	229	86	2320	1530	389	139	82	46	271
10	85	236	127	200	87	2330	1490	344	122	76	66	307
11	93	212	131	180	87	2170	1250	329	136	70	47	259
12	104	214	147	160	84	2120	1010	333	150	71	44	197
13	103	212	152	175	84	2470	878	300	147	73	48	184
14	99	231	149	183	84	2740	775	304	170	70	53	182
15	115	252	164	150	85	2390	704	298	204	63	55	157
16	135	213	218	142	86	1790	639	295	196	56	49	134
17	150	221	274	134	85	1320	586	280	209	51	50	125
18	158	255	200	129	87	1020	541	283	206	52	49	115
19	208	251	200	124	91	872	515	266	201	85	43	105
20	194	205	300	109	99	755	479	256	180	67	38	105
21	185	167	361	110	310	682	452	230	162	58	38	103
22	164	186	368	112	820	625	474	220	154	47	43	118
23	151	202	387	116	1830	628	535	210	147	42	47	187
24	137	207	270	116	2710	685	597	197	130	44	64	175
25	138	199	210	113	2880	752	637	184	95	61	69	183
26	131	199	215	108	2360	782	702	180	91	102	57	204
27	139	219	225	105	2090	819	715	179	105	157	53	240
28	136	198	482	103	2120	870	702	166	101	143	51	348
29	123	191	802	100	---	917	708	155	104	97	83	423
30	133	194	689	96	---	895	691	152	136	78	100	472
31	118	---	640	93	---	947	---	156	---	77	106	---
TOTAL	3631	7131	7866	5971	16867	46709	26935	9927	4861	2766	1751	5707
MEAN	117	238	254	193	602	1507	898	320	162	89.2	56.5	190
MAX	208	386	802	580	2880	2790	1530	643	245	190	106	472
MIN	57	167	102	93	84	625	452	152	91	42	38	89
CFSM	.11	.23	.24	.18	.57	1.44	.86	.31	.15	.09	.05	.18
IN.	.13	.25	.28	.21	.60	1.66	.96	.35	.17	.10	.06	.20
AC-FT	7200	14140	15600	11840	33460	92650	53430	19690	9640	5490	3470	11320

CAL YR 1984	TOTAL 299502	MEAN 818	MAX 4900	MIN 57	CFSM .78	IN. 10.63	AC-FT 594100
WTR YR 1985	TOTAL 140122	MEAN 384	MAX 2880	MIN 38	CFSM .37	IN. 4.97	AC-FT 277900

05422000 WAPSIPINICON RIVER NEAR DE WITT, IA

LOCATION.--Lat 41°46'01", long 90°32'05", in SW1/4 NE1/4 sec.6, T.80 N., R.4 E., Clinton County, Hydrologic Unit 07080103, on left bank 5 ft upstream from bridge on U.S. Highway 61, 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 mi².

PERIOD OF RECORD.--June 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.

REMARKS.--Estimated daily discharges: Oct. 20-22, Dec. 18-20, 24-27, Jan. 1 to Mar. 1, Apr. 15-16, June 27-28, July 4, 6-8, 11-22. Records good except Oct. 20-22, Feb. 24-25, Apr. 15-16, June 27-28, July 4, 6-8, 11-22, which are fair and Dec. 18-20, 24-27, Jan. 1 to Feb. 23, Feb. 26 to Mar. 1, which are poor. U.S. Army Corps of Engineers gage-height telemeter and Data Collection Platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--51 years, 1,542 ft³/s, 8.99 in/yr, 1,117,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,900 ft³/s May 17, 1974, gage height, 13.07 ft; minimum daily, 46 ft³/s Jan. 22, 23, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	----	*14,000	*12.00	No other peak greater than base discharge.			

Minimum discharge, 215 ft³/s Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	303	2180	903	1700	515	6820	3020	1620	752	402	325	220
2	295	3090	874	1300	510	8290	2940	1550	694	394	323	222
3	288	2250	844	1000	500	6340	2780	1490	647	387	305	222
4	282	1960	778	940	495	8110	2670	1420	618	380	290	221
5	274	1650	672	930	495	10000	2770	1360	606	381	287	222
6	274	1450	462	960	490	9880	3030	1330	615	380	284	225
7	285	1340	550	1010	480	8960	3130	1290	606	374	276	224
8	296	1260	697	1060	475	6170	3120	1240	592	368	264	217
9	299	1200	828	1000	475	4220	3020	1270	555	346	257	217
10	299	1590	843	850	480	4020	2910	1230	549	333	270	217
11	305	2060	804	760	480	4270	2830	1180	555	356	294	231
12	316	1490	870	700	480	4430	2790	1450	557	356	310	261
13	315	1300	858	660	490	4240	2720	1280	565	334	305	279
14	315	1200	835	620	495	4120	2560	1210	544	314	310	293
15	316	1130	871	600	500	3870	2310	1490	570	401	288	302
16	339	1050	905	595	510	3910	2110	1350	576	325	267	297
17	546	1000	1010	590	520	4060	1950	1240	556	289	247	280
18	602	979	900	580	530	4030	1840	1170	537	279	244	273
19	2320	951	880	560	550	3520	1740	1110	551	272	240	264
20	2180	909	930	550	600	2920	1660	1070	538	268	233	251
21	1440	883	1000	535	1600	2510	1570	1020	541	260	230	251
22	1160	870	1030	530	5000	2260	1500	965	619	255	227	256
23	983	849	1070	530	10000	2090	1480	928	567	253	225	284
24	861	849	930	540	11200	1980	1480	896	556	255	223	311
25	791	829	850	550	13800	1890	1570	858	505	255	228	320
26	749	819	1000	555	11400	1880	1800	843	481	260	231	316
27	730	887	1200	560	8990	1920	1820	877	472	262	227	317
28	1050	1000	1570	555	7370	2160	1730	840	451	262	223	325
29	1140	982	2500	550	---	2270	1680	812	431	261	224	323
30	1050	941	2940	540	---	2250	1640	819	409	259	232	326
31	925	---	2490	525	---	2540	---	796	---	304	227	---
TOTAL	21328	38948	32894	22935	79430	135930	68170	36004	16815	9825	8116	7967
MEAN	688	1298	1061	740	2837	4385	2272	1161	561	317	262	266
MAX	2320	3090	2940	1700	13800	10000	3130	1620	752	402	325	326
MIN	274	819	462	525	475	1880	1480	796	409	253	223	217
CFSM	.30	.56	.46	.32	1.22	1.88	.98	.50	.24	.14	.11	.11
IN.	.34	.62	.53	.37	1.27	2.17	1.09	.57	.27	.16	.13	.13
AC-FT	42300	77250	65250	45490	157500	269600	135200	71410	33350	19490	16100	15800

CAL YR 1984	TOTAL	742081	MEAN	2028	MAX	9240	MIN	274	CFSM	.87	IN.	11.85	AC-FT	1472000
WTR YR 1985	TOTAL	478362	MEAN	1311	MAX	13800	MIN	217	CFSM	.56	IN.	7.64	AC-FT	948800

05422470 CROW CREEK AT BETTENDORF, IA

LOCATION.--Lat 41°33'03", long 90°27'15", 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 mi².

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

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

REMARKS.--Estimated daily discharges: Nov. 20-22, Dec. 6, 20-25, Jan. 1 to Feb. 19. Records fair except those for estimated discharge, which are poor.

AVERAGE DISCHARGE.--8 years, 16.1 ft³/s, 12.28 in/yr, 11,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,490 ft³/s June 15, 1982, gage height, 10.24 ft; minimum daily, 0.23 ft³/s (corrected) Sept. 10, 11, 26-28, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	----	unknown	unknown	Mar. 4	0745	*387	*5.65
Feb. 21	1800	288	5.24				

Minimum discharge, 0.10 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	103	6.6	19	5.6	84	19	11	6.7	3.2	1.5	.88
2	1.7	69	7.7	17	5.5	76	16	8.2	6.9	2.9	1.1	.93
3	1.5	54	8.7	15	5.4	96	14	7.7	6.5	2.9	1.0	.60
4	1.5	50	21	13	5.4	194	13	7.8	6.4	2.8	.98	.54
5	1.5	47	8.2	12	5.3	65	19	9.2	6.5	2.7	1.1	.40
6	1.5	42	7.8	11	5.2	52	27	8.9	6.4	2.5	1.1	.37
7	2.2	37	7.3	10	5.0	46	18	7.5	6.2	2.5	.84	.27
8	2.8	27	7.0	9.4	5.0	43	16	7.5	6.4	2.3	.85	.24
9	2.1	43	6.5	8.8	5.0	39	15	5.3	5.2	2.3	.80	.22
10	1.7	28	6.2	8.3	5.0	34	15	4.2	5.2	2.1	7.8	.30
11	2.2	22	5.7	7.7	4.9	42	13	6.5	7.3	10	1.7	.37
12	3.0	19	6.9	7.4	4.9	34	12	46	5.9	3.2	1.0	.39
13	1.6	18	7.2	7.2	4.8	34	12	10	5.5	2.6	3.2	.52
14	1.4	18	32	7.0	4.8	30	13	26	5.5	11	1.7	.60
15	2.7	16	14	6.8	4.8	27	12	53	13	12	1.3	.59
16	35	14	13	6.7	5.2	24	11	23	5.8	2.4	.95	.58
17	7.5	13	10	6.5	5.8	21	9.9	17	5.3	2.0	.87	3.1
18	46	12	9.0	6.3	8.0	20	9.9	14	4.7	1.7	.75	1.8
19	107	10	9.2	6.2	16	20	9.9	12	4.9	1.6	.65	1.5
20	7.5	9.4	9.6	6.0	80	17	9.9	11	4.5	1.7	.59	.80
21	24	8.8	10	6.2	161	16	9.9	9.5	4.6	1.5	.62	1.9
22	13	8.4	11	6.4	155	15	9.9	8.4	13	1.5	.67	3.4
23	9.2	8.0	12	6.5	141	16	11	8.5	5.6	1.4	.70	3.4
24	7.5	7.4	11	6.6	148	14	9.9	8.4	4.9	1.3	.84	3.3
25	8.1	6.8	10	6.5	114	12	9.3	8.3	4.4	2.4	1.5	2.6
26	7.8	6.2	11	6.3	99	12	9.1	8.0	4.0	1.7	2.4	3.8
27	16	18	25	6.2	87	14	8.1	22	3.7	1.3	.94	2.7
28	22	8.3	38	6.0	83	30	7.8	10	3.4	1.2	.77	2.2
29	16	7.4	31	6.0	---	17	8.1	8.7	3.5	.91	4.0	2.3
30	14	7.2	23	5.8	---	14	9.1	8.9	3.7	1.2	3.3	3.8
31	14	---	21	5.7	---	31	---	8.2	---	2.6	1.2	---
TOTAL	383.7	737.9	406.6	259.5	1179.6	1189	376.8	404.7	175.6	91.41	46.72	44.40
MEAN	12.4	24.6	13.1	8.37	42.1	38.4	12.6	13.1	5.85	2.95	1.51	1.48
MAX	107	103	38	19	161	194	27	53	13	12	7.8	3.8
MIN	1.4	6.2	5.7	5.7	4.8	12	7.8	4.2	3.4	.91	.59	.22
CFSM	.70	1.38	.74	.47	2.37	2.16	.71	.74	.33	.17	.08	.08
IN.	.80	1.54	.85	.54	2.47	2.48	.79	.85	.37	.19	.10	.09
AC-FT	761	1460	806	515	2340	2360	747	803	348	181	93	88

CAL YR 1984	TOTAL	4727.67	MEAN	12.9	MAX	107	MIN	.88	CFSM	.72	IN.	9.88	AC-FT	9380
WTR YR 1985	TOTAL	5295.93	MEAN	14.5	MAX	194	MIN	.22	CFSM	.81	IN.	11.07	AC-FT	10500

05449000 EAST BRANCH IOWA RIVER NEAR KLEMME, IA

LOCATION.--Lat 43°00'31", long 93°37'42", in NE1/4 NW1/4 sec.36, T.95 N., R.24 W., Hancock County, Hydrologic Unit 07080207, on left bank 15 ft upstream from bridge on county highway B55, 1.2 mi west of Chicago, Rock Island and Pacific Railroad crossing in Klemme, 1.5 mi upstream from Drainage ditch 9, 18.2 mi upstream from confluence with West Branch Iowa River, and at mile 341.0.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--April 1948 to September 1976, June 1977 to current year. Prior to October 1958, published as East Fork Iowa River near Klemme.

REVISED RECORDS.--WSP 1438: Drainage area. WDR IA-80-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 1,179.33 ft above NGVD. Apr. 1, 1948, to Sept. 30, 1955, nonrecording gage at site 0.6 mi upstream at datum 0.80 ft higher. Oct. 1, 1955, to Sept. 30, 1969, at present site at datum 0.31 ft lower.

REMARKS.--Estimated daily discharge during water year: Nov. 14 - 22, Dec. 9 to March 9. Records good, except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--36 years (water years 1948-76, 1978-85), 66.7 ft³/s, 6.81 in/yr, 48,320 acre-ft/yr; median of yearly mean discharges, 54 ft³/s, 5.5 in/yr, 39,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,960 ft³/s June 19, 1954, gage height, 11.2 ft, from floodmark, site and datum then in use; maximum gage height, 10.67 ft Apr. 6, 1965 (corrected), backwater from ice; minimum daily discharge, 0.2 ft³/s Feb. 22-26, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1944 reached a stage of about 10 ft, from information by local residents, former site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 6	0800	*871	*8.11	No other peak greater than base discharge.			

Minimum daily discharge, 3.3 ft³/s Jan. 25 to Feb. 4, Feb 7-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	16	11	18	3.3	14	35	77	35	35	7.0	38
2	8.0	15	11	16	3.3	14	40	67	27	29	6.1	23
3	7.7	16	17	14	3.3	13	101	62	22	24	6.5	18
4	7.6	14	19	12	3.3	12	143	59	20	23	6.5	26
5	8.3	12	23	11	3.4	11	200	55	20	17	6.2	467
6	9.4	12	25	10	3.4	11	134	49	19	14	5.3	843
7	12	13	33	9.2	3.3	35	97	43	17	12	5.5	615
8	11	12	44	8.6	3.3	110	77	40	17	12	5.4	339
9	13	16	34	8.0	3.3	330	69	40	14	11	4.7	180
10	10	22	29	7.4	3.3	187	65	41	15	9.5	4.9	130
11	9.6	19	26	7.0	3.3	142	60	45	20	9.8	4.8	101
12	9.1	18	25	6.6	3.3	105	58	38	28	13	5.8	82
13	9.0	18	24	6.2	3.4	83	55	31	35	13	7.3	66
14	8.7	18	24	5.8	3.4	68	52	34	41	9.5	4.7	55
15	17	16	24	5.5	3.5	55	50	33	55	7.7	5.3	48
16	32	20	29	5.2	3.5	51	46	32	51	7.0	4.4	45
17	50	15	34	4.8	4.3	41	43	29	45	7.2	5.9	42
18	29	14	40	4.6	8.0	37	43	29	39	7.4	6.2	36
19	23	14	30	4.3	9.8	35	40	29	34	13	4.1	32
20	19	15	22	4.0	12	31	38	35	31	8.9	3.9	48
21	16	18	14	3.8	15	29	42	30	30	8.3	4.1	51
22	14	25	13	3.6	19	27	41	29	26	7.3	7.2	54
23	13	16	12	3.5	25	30	53	29	23	6.9	11	88
24	13	13	13	3.4	22	36	61	29	20	15	6.4	177
25	14	13	14	3.3	20	32	60	27	20	26	5.0	161
26	14	13	18	3.3	18	32	129	27	26	12	4.2	164
27	15	13	23	3.3	17	32	159	24	94	8.4	4.1	143
28	13	12	27	3.3	15	33	123	22	77	7.5	5.6	121
29	12	12	33	3.3	---	33	101	22	55	7.4	218	173
30	11	11	24	3.3	---	31	87	24	44	7.5	134	368
31	12	---	20	3.3	---	25	---	42	---	7.9	62	---
TOTAL	448.2	461	735	205.6	238.7	1725	2302	1173	1000	397.2	572.1	4734
MEAN	14.5	15.4	23.7	6.63	8.52	55.6	76.7	37.8	33.3	12.8	18.5	158
MAX	50	25	44	18	25	330	200	77	94	35	218	843
MIN	7.6	11	11	3.3	3.3	11	35	22	14	6.9	3.9	18
CFSM	.11	.12	.18	.05	.06	.42	.58	.28	.25	.10	.14	1.19
IN.	.13	.13	.21	.06	.07	.48	.64	.33	.28	.11	.16	1.32
AC-FT	889	914	1460	408	473	3420	4570	2330	1980	788	1130	9390

WTR YR 1985 TOTAL 13991.8 MEAN 38.3 MAX 843 MIN 3.3 CFSM .29 IN. 3.91 AC-FT 27750

05449500 IOWA RIVER NEAR ROWAN, IA

LOCATION.--Lat 42°45'36", long 93°37'23", in NW1/4 NE1/4 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 at mile 316.4.

DRAINAGE AREA.--429 mi².

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. Prior to Oct. 14, 1948, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharge: Oct. 5-15, Nov. 18 to March 12, July 4 - July 9, July 11 - July 16, July 18 - July 22. Records good, except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--44 years (water years 1941-76, 1978-85), 216 ft³/s, 6.84 in/yr, 156,500 acre-ft/yr; median of yearly mean discharges, 200 ft³/s, 6.3 in/yr, 145,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,460 ft³/s June 21, 1954, gage height, 14.88 ft; minimum daily 2.9 ft³/s Jan. 21-23, 1959.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 7	2100	*1,880	*10.79	No other peak greater than base discharge.			

Minimum daily discharge, 23 ft³/s Jan. 29 to Feb. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	109	70	145	23	120	125	265	115	104	40	277
2	110	104	68	115	23	127	141	230	106	93	40	185
3	109	96	66	95	23	132	226	206	96	83	39	142
4	110	93	68	76	23	140	319	187	91	77	38	127
5	113	92	70	66	23	145	395	179	89	74	39	800
6	118	86	71	61	23	155	469	174	87	69	40	1660
7	122	82	72	57	23	165	367	160	81	65	49	1860
8	119	80	72	52	23	230	279	150	80	61	40	1860
9	127	82	74	49	23	330	234	143	76	57	37	1700
10	120	90	76	46	23	450	213	138	69	52	38	1260
11	100	102	76	44	23	540	200	136	67	51	39	779
12	97	104	75	40	23	430	184	137	83	49	39	537
13	94	97	71	37	23	327	173	134	97	46	44	412
14	90	93	74	36	23	266	167	127	112	46	44	334
15	98	90	72	33	23	219	162	127	115	43	44	281
16	116	83	90	32	23	188	157	126	122	42	42	247
17	145	80	115	30	23	174	147	123	116	41	44	222
18	165	88	145	28	37	159	141	117	107	40	45	203
19	138	76	145	27	58	149	138	115	100	40	45	181
20	125	66	125	26	83	143	130	115	94	44	43	185
21	116	72	110	26	150	135	134	116	87	37	43	213
22	106	73	100	25	240	129	148	113	83	37	49	229
23	100	76	94	25	200	132	199	110	79	34	55	255
24	96	81	89	25	165	139	225	109	78	35	59	446
25	97	78	82	24	140	145	238	107	78	41	57	559
26	99	75	76	24	130	137	329	103	78	58	51	588
27	97	76	71	24	125	137	457	101	93	43	49	569
28	99	74	160	24	118	146	462	97	159	38	49	484
29	94	71	335	23	---	152	373	93	151	37	351	441
30	90	73	250	23	---	149	305	93	121	37	719	719
31	90	---	175	23	---	142	---	101	---	39	528	---
TOTAL	3411	2542	3237	1361	1837	6132	7237	4232	2910	1613	2839	17755
MEAN	110	84.7	104	43.9	65.6	198	241	137	97.0	52.0	91.6	592
MAX	165	109	335	145	240	540	469	265	159	104	719	1860
MIN	90	66	66	23	23	120	125	93	67	34	37	127
CFSM	.26	.20	.24	.10	.15	.46	.56	.32	.23	.12	.21	1.38
IN.	.30	.22	.28	.12	.16	.53	.63	.37	.25	.14	.25	1.54
AC-FT	6770	5040	6420	2700	3640	12160	14350	8390	5770	3200	5630	35220

CAL YR 1984	TOTAL	212346	MEAN	580	MAX	6990	MIN	66	CFSM	1.35	IN.	18.41	AC-FT	421200
WTR YR 1985	TOTAL	55106	MEAN	151	MAX	1860	MIN	23	CFSM	.35	IN.	4.78	AC-FT	109300

05451500 IOWA RIVER AT MARSHALLTOWN, IA

LOCATION.--Lat 42°03'57", long 92°54'27", in SE1/4 SE1/4 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 at mile 222.8.

DRAINAGE AREA.--1,564 mi², including that of Burnett Creek.

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. See WSP 1728 for history of changes prior to Sept. 21, 1934.

REMARKS.--Estimated daily discharges: Dec. 5, Dec. 31 to Feb. 22 and Mar. 1. Records are good except those for estimated daily discharges, which are fair. U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corp of Engineers.

AVERAGE DISCHARGE.--67 years (water years 1903, 1915-27, 1933-85), 815 ft³/s 7.08 in/yr, 590,500 acre-ft/yr; median of yearly mean discharges, 690 ft³/s, 6.0 in/yr, 500,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft³/s June 4, 1918, gage height, 17.74 ft, from flood-mark, from rating curve extended above 19,000 ft³/s on basis of velocity-area study; maximum gage height, 19.77 ft March 19, 1979; minimum daily discharge, 4.7 ft³/s Jan. 25, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	1645	*6,870	*17.07	No other peak greater than base discharge			

Minimum discharge, 65 ft³/s Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	593	282	718	198	1100	814	968	294	319	122	297
2	163	725	273	700	194	933	836	823	288	304	113	425
3	163	613	185	620	197	1110	1160	778	288	271	108	420
4	163	497	234	580	200	6010	1450	712	293	247	111	315
5	163	443	265	505	204	5320	1500	687	287	227	120	260
6	172	412	288	495	205	2010	1420	738	270	213	116	303
7	185	392	294	450	203	1620	1310	721	256	196	108	299
8	184	382	288	405	226	1480	1260	683	246	178	104	518
9	187	368	303	360	232	1400	1180	641	235	173	107	689
10	180	368	306	325	240	1510	1080	597	224	174	127	978
11	190	372	305	290	261	1520	978	577	248	166	130	1250
12	203	372	310	278	270	1550	892	577	313	161	124	1320
13	194	375	334	280	286	1530	841	538	346	159	109	1220
14	192	388	294	282	300	1470	809	516	398	158	106	993
15	218	392	301	278	312	1270	764	501	538	158	114	732
16	282	368	416	277	320	1150	734	490	500	151	105	548
17	344	359	525	262	330	959	704	479	474	146	97	496
18	314	359	466	250	392	930	670	464	436	140	101	454
19	317	346	565	244	480	901	653	447	416	149	92	421
20	318	306	516	240	585	855	621	413	387	203	80	397
21	312	297	613	230	1070	809	597	350	359	183	76	390
22	294	297	704	226	1800	769	621	400	338	154	95	354
23	271	312	557	221	2230	756	658	395	315	142	115	430
24	261	309	490	222	3210	751	641	393	299	130	117	478
25	259	312	501	220	2420	747	658	384	282	156	102	486
26	259	306	527	210	2130	747	712	373	278	183	91	551
27	254	306	538	208	1810	782	738	363	288	142	87	651
28	252	303	1990	205	1320	804	897	347	295	121	85	707
29	247	300	1790	203	---	850	988	327	282	116	97	775
30	248	288	1140	200	---	864	1010	319	283	123	119	970
31	245	---	860	198	---	859	---	313	---	123	146	---
TOTAL	7197	11460	16460	10182	21625	43366	27196	16314	9756	5466	3324	18127
MEAN	232	382	531	328	772	1399	907	526	325	176	107	604
MAX	344	725	1990	718	3210	6010	1500	968	538	319	146	1320
MIN	163	288	185	198	194	747	597	313	224	116	76	260
CFSM	.15	.24	.34	.21	.49	.89	.58	.34	.21	.11	.07	.39
IN.	.17	.27	.39	.24	.51	1.03	.65	.39	.23	.13	.08	.43
AC-FT	14280	22730	32650	20200	42890	86020	53940	32360	19350	10840	6590	35950

CAL YR 1984	TOTAL	648201	MEAN	1771	MAX	10400	MIN	150	CFSM	1.13	IN.	15.42	AC-FT	1286000
WTR YR 1985	TOTAL	190473	MEAN	522	MAX	6010	MIN	76	CFSM	.33	IN.	4.53	AC-FT	377800

05451700 TIMBER CREEK NEAR MARSHALLTOWN, IA

LOCATION.--Lat 42°00'25", long 92°51'15", in SE1/4 SW1/4 sec.8, T.83 N., R.17 W., Marshall County, Hydrologic Unit 07080208, on left bank 20 ft downstream from bridge on U.S. Highway 30, 3.5 mi upstream from mouth, and 4.1 mi southeast of court house in Marshalltown.

DRAINAGE AREA.--118 mi².

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.

REMARKS.--Estimated daily discharges: Oct. 1-14, Dec. 3-4, 8-10, Jan. 1 to Feb. 22, and Sept 6-7, 21-30. Records fair except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--36 years, 73.0 ft³/s, 8.40 in/yr, 52,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Aug. 16, 1977, gage height, 17.69 ft; no flow for a few days in 1956 and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of 16.8 ft, discharge, 5,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	0430	1,050	10.30	Feb. 23	2300	*2,050	*13.26

Minimum discharge, 1.5 ft³/s Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	268	23	88	40	56	55	44	21	20	8.3	4.4
2	10	102	19	83	40	49	74	41	21	19	8.4	3.8
3	10	70	21	74	40	37	153	38	21	18	7.9	3.1
4	9.0	56	22	65	40	57	138	37	21	18	7.4	2.9
5	10	46	21	63	39	71	117	36	21	18	7.8	3.7
6	14	42	20	59	40	75	102	40	21	17	7.2	5.5
7	22	38	23	54	39	76	90	36	21	14	6.6	2.7
8	14	36	24	40	39	65	83	34	20	15	6.5	3.8
9	14	36	25	37	40	58	78	34	19	16	6.1	3.8
10	12	42	26	36	40	56	76	34	19	15	14	3.7
11	21	44	25	35	39	58	71	34	23	14	10	3.5
12	25	38	25	36	39	53	67	37	32	14	5.7	2.7
13	15	37	23	36	39	58	64	34	26	14	5.9	2.0
14	15	36	26	37	39	61	64	39	23	15	5.7	2.5
15	39	33	28	38	38	54	63	35	29	14	6.4	2.1
16	71	30	143	39	39	52	59	34	28	13	5.8	1.8
17	98	31	62	39	42	48	56	35	24	11	4.9	2.0
18	54	31	59	39	43	47	55	34	19	11	4.0	2.0
19	77	29	62	38	47	46	53	32	19	11	3.8	2.1
20	43	27	44	38	63	44	50	31	20	12	3.6	2.2
21	35	29	226	39	228	43	49	30	19	10	3.3	3.1
22	29	27	121	40	537	43	47	29	20	9.7	11	8.3
23	27	26	83	40	849	47	57	28	19	9.4	26	86
24	26	25	59	40	684	50	57	27	19	9.0	8.9	35
25	26	24	101	40	178	46	50	27	17	8.7	5.5	17
26	29	23	67	39	106	45	49	26	20	8.8	4.7	14
27	26	28	269	39	57	48	47	25	54	8.5	3.9	9.0
28	32	25	603	40	53	51	46	24	29	7.8	3.3	7.7
29	27	23	167	40	---	49	43	25	24	7.5	3.4	12
30	25	20	94	39	---	48	42	25	22	7.4	3.9	40
31	25	---	92	40	---	57	---	21	---	7.8	4.8	---
TOTAL	891.0	1320	2603	1410	3517	1648	2055	1006	691	393.6	214.7	292.4
MEAN	28.7	44.0	84.0	45.5	126	53.2	68.5	32.5	23.0	12.7	6.93	9.75
MAX	98	268	603	88	849	76	153	44	54	20	26	86
MIN	9.0	20	19	35	38	37	42	21	17	7.4	3.3	1.8
CFSM	.24	.37	.71	.39	1.07	.45	.58	.28	.19	.11	.06	.08
IN.	.28	.42	.82	.44	1.11	.52	.65	.32	.22	.12	.07	.09
AC-FT	1770	2620	5160	2800	6980	3270	4080	2000	1370	781	426	580

CAL YR 1984	TOTAL	55337.0	MEAN	151	MAX	1960	MIN	8.9	CFSM	1.28	IN.	17.45	AC-FT	109800
WTR YR 1985	TOTAL	16041.7	MEAN	43.9	MAX	849	MIN	1.8	CFSM	.37	IN.	5.06	AC-FT	31820

05451900 RICHLAND CREEK NEAR HAVEN, IA

LOCATION.--Lat 41°53'58", long 92°28'27", in SE1/4 NE1/4 sec.21, T.82 N., R.14 W., Tama County, Hydrologic Unit 07080208, on right bank 5 ft upstream from bridge on county highway, 0.6 mi northeast of Haven, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--56.1 mi².

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. Prior to Oct. 1, 1971, at datum 10.00 ft higher.

REMARKS.--Estimated daily discharge: Dec. 2, Dec. 6-14, and Jan.1 to Feb. 21. Records are good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--36 years, 36.0 ft³/s, 8.71 in/yr, 26,080 acre-ft/yr; median of yearly mean discharges, 31 ft³/s, 7.5 in/yr, 22,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s May 28, 1974, gage height, 24.00 ft; no flow Jan. 22 to Feb. 2, 1977.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1415	1,400	*a20.50	Mar. 4	1015	*1,890	19.50
Feb. 23	1730	1,570	18.75				

(a) ice jam

Minimum daily discharge, 0.63 ft³/s Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	36	6.0	13	6.9	14	34	16	6.9	3.1	4.3	2.5
2	6.9	13	5.6	12	7.0	10	45	15	7.4	3.2	4.2	1.7
3	9.1	8.6	5.2	11	7.4	360	58	14	6.5	2.8	3.7	1.8
4	9.8	6.6	7.2	10	7.6	909	48	13	6.1	2.6	5.2	1.3
5	10	4.4	7.1	9.6	7.8	51	42	14	6.2	1.9	4.1	1.8
6	13	3.8	6.3	9.4	7.6	43	37	14	5.7	1.9	2.4	1.5
7	14	3.8	5.8	8.6	7.5	36	34	12	5.3	2.6	2.2	1.2
8	13	3.5	6.0	8.0	7.1	33	32	11	5.0	2.9	1.1	1.5
9	13	5.0	6.3	7.7	6.4	31	31	11	3.9	4.4	1.7	1.4
10	15	4.8	6.4	7.9	6.3	30	29	11	3.8	4.3	2.6	1.4
11	17	3.8	6.6	7.7	6.3	33	28	13	4.9	3.7	1.6	1.4
12	11	3.3	6.5	8.0	5.9	30	25	13	13	4.2	1.5	1.4
13	11	3.9	7.0	8.2	5.6	31	24	11	6.1	4.6	2.1	2.4
14	13	3.9	8.3	8.3	5.7	30	24	16	5.3	3.7	1.3	2.7
15	19	3.3	10	8.0	5.8	28	23	13	7.4	2.9	1.8	2.5
16	18	4.4	44	8.2	6.0	28	21	13	5.7	3.4	1.3	2.8
17	20	3.8	20	8.5	8.0	27	20	13	4.6	2.8	1.0	2.7
18	18	3.5	20	8.4	11	26	19	11	3.6	3.0	1.0	2.4
19	20	3.3	17	8.3	38	26	18	9.9	3.5	3.5	1.3	3.0
20	12	3.4	12	8.1	67	24	17	10	3.3	3.9	1.6	3.9
21	10	3.7	46	7.8	1100	23	17	9.8	3.2	4.0	1.4	7.2
22	8.6	4.3	30	8.0	155	22	18	9.2	3.8	3.8	3.8	8.0
23	7.9	3.4	25	8.0	580	24	20	9.4	3.5	4.3	4.5	5.4
24	7.7	3.3	15	8.5	166	24	17	9.4	4.7	4.8	3.4	6.8
25	8.5	3.7	14	7.8	35	22	17	9.0	3.9	3.2	1.9	5.0
26	8.7	5.3	18	7.4	23	22	18	8.5	3.7	2.4	1.9	4.0
27	9.0	7.3	120	7.3	14	22	17	9.8	2.7	2.1	.63	3.7
28	9.2	6.2	131	7.2	12	34	17	9.4	2.5	2.2	1.0	3.0
29	6.6	6.4	24	7.1	---	29	16	8.5	1.8	2.0	2.0	4.5
30	6.2	6.0	19	7.0	---	28	15	8.2	3.0	2.8	3.0	6.3
31	6.8	---	14	6.9	---	34	---	7.4	---	3.9	2.8	---
TOTAL	357.8	175.7	669.3	261.9	2315.9	2084	781	352.5	147.0	100.9	72.33	95.2
MEAN	11.5	5.86	21.6	8.45	82.7	67.2	26.0	11.4	4.90	3.25	2.33	3.17
MAX	20	36	131	13	1100	909	58	16	13	4.8	5.2	8.0
MIN	5.8	3.3	5.2	6.9	5.6	10	15	7.4	1.8	1.9	.63	1.2
CFSM	.20	.10	.39	.15	1.47	1.20	.46	.20	.09	.06	.04	.06
IN.	.24	.12	.44	.17	1.54	1.38	.52	.23	.10	.07	.05	.06
AC-FT	710	349	1330	519	4590	4130	1550	699	292	200	143	189

CAL YR 1984	TOTAL	19240.2	MEAN	52.6	MAX	600	MIN	3.0	CFSM	.94	IN.	12.76	AC-FT	38160
WTR YR 1985	TOTAL	7413.53	MEAN	20.3	MAX	1100	MIN	.63	CFSM	.36	IN.	4.92	AC-FT	14700

05452000 SALT CREEK NEAR ELBERON, IA

LOCATION.--Lat 41°57'51", long 92°18'47", in NW1/4 NW1/4 sec.36, T.83 N., R.13 W., Tama County, Hydrologic Unit 07080208, near center of span on downstream side of bridge on U.S. Highway 30, 2.0 mi upstream from Hog Run, 3.0 mi south of Elberon, and 9.0 mi upstream from mouth.

DRAINAGE AREA.--201 mi².

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 (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.--Estimated daily discharges: Dec. 2-6, Dec.13 to Feb. 21, March 5-7 and Aug. 2-19. Records good except those for periods of estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage telemeter and data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--40 years, 133 ft³/s, 8.98 in/yr, 96,360 acre-ft/yr; median of yearly mean discharges, 110 ft³/s, 7.4 in/yr, 79,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 35,000 ft³/s June 13, 1947, gage height, 17.6 ft from rating curve extended above 17,000 ft³/s; maximum gage height, 20.00 ft June 15, 1982; minimum daily dis- 0.85 ft³/s Jan. 31, 1977.

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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1630	*7,000	a*17.37	Mar. 4	1645	4,820	16.11
Feb. 24	0915	3,200	15.30				

(a) ice jam
Minimum discharge, 6.3 ft³/s Sept. 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	301	44	64	47	176	129	69	45	29	20	9.9
2	25	177	43	60	47	157	175	65	45	26	16	9.0
3	25	120	39	58	46	552	235	63	43	26	15	9.2
4	24	98	41	52	46	3780	194	62	43	24	16	8.7
5	25	80	45	53	46	300	167	60	43	26	14	9.4
6	25	74	46	54	46	148	151	63	41	26	13	11
7	28	69	49	52	45	150	134	80	40	21	14	8.7
8	25	66	53	49	45	156	122	69	40	20	12	8.2
9	25	65	58	48	45	142	115	65	39	18	15	8.0
10	25	65	58	50	45	136	113	62	37	19	23	8.1
11	36	59	55	49	46	141	108	60	36	20	18	8.0
12	50	58	55	50	46	134	102	58	49	19	16	7.5
13	37	57	56	50	46	134	98	58	67	21	19	7.1
14	34	57	58	51	46	138	95	65	54	21	13	7.2
15	38	56	64	49	47	125	93	60	53	18	11	7.1
16	52	50	200	49	47	121	89	60	47	16	10	7.4
17	76	55	80	50	50	114	84	69	43	16	13	7.3
18	64	54	68	50	54	109	83	67	42	15	11	6.8
19	118	51	57	49	60	108	80	64	40	17	9.0	6.5
20	71	51	52	47	74	103	77	60	37	20	9.2	6.5
21	59	55	300	45	2000	99	76	57	37	17	9.3	8.4
22	52	55	130	47	3250	97	77	55	35	15	14	13
23	49	50	84	47	1450	101	99	55	34	14	23	39
24	47	48	58	48	2360	106	94	56	32	14	15	29
25	46	47	53	48	418	102	82	52	32	18	11	18
26	49	47	70	48	256	100	78	50	33	15	11	21
27	49	49	150	49	171	102	75	50	34	13	10	19
28	55	48	800	49	166	135	73	51	32	13	9.6	13
29	52	47	290	48	---	122	69	49	30	12	10	15
30	49	46	99	48	---	110	68	49	28	13	11	40
31	48	---	70	47	---	127	---	48	---	15	10	---
TOTAL	1383	2155	3325	1558	11045	8125	3235	1851	1211	577	421.1	377.0
MEAN	44.6	71.8	107	50.3	394	262	108	59.7	40.4	18.6	13.6	12.6
MAX	118	301	800	64	3250	3780	235	80	67	29	23	40
MIN	24	46	39	45	45	97	68	48	28	12	9.0	6.5
CFSM	.22	.36	.53	.25	1.96	1.30	.54	.30	.20	.09	.07	.06
IN.	.26	.40	.62	.29	2.04	1.50	.60	.34	.22	.11	.08	.07
AC-FT	2740	4270	6600	3090	21910	16120	6420	3670	2400	1140	835	748

CAL YR 1984	TOTAL	79301	MEAN	217	MAX	5300	MIN	18	CFSM	1.08	IN.	14.68	AC-FT	157300
WTR YR 1985	TOTAL	35263.1	MEAN	96.6	MAX	3780	MIN	6.5	CFSM	.48	IN.	6.53	AC-FT	69940

05452200 WALNUT CREEK NEAR HARTWICK, IA

LOCATION.--Lat 41°50'06", long 92°23'10", in SE1/4 SW1/4 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 mi².

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.

REMARKS.--Estimated daily discharges: Oct. 16, Nov. 18-19, Dec. 6, 12, 14, 23-26, Jan. 2 to Feb. 23, and Mar. 4-12. Records are good, except for periods of estimated discharge, which are poor.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--36 years, 45.0 ft³/s, 8.62 in/yr, 32,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s July 2, 1983, gage height, 16.65 ft, from rating curve extended above 2,600 ft³/s on basis of contracted-opening and flow-over-embankment measurement of peak flow; no flow at times for most years.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	----	a*3,400	*15.9	Mar. 4	unknown	1,300	10.8

(a) Ice jam, gage height and discharge are estimated.
Minimum discharge, 0.68 ft³/s Sept. 14-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	68	6.9	80	11	21	61	22	12	9.2	4.4	2.1
2	2.5	23	7.2	59	11	15	66	20	13	8.4	3.9	1.9
3	2.6	17	8.1	50	12	257	56	19	11	8.1	3.6	1.6
4	2.5	12	10	44	12	300	59	19	10	7.2	3.4	1.3
5	2.7	10	8.6	36	12	117	61	19	10	6.9	3.9	1.5
6	3.1	9.3	7.6	34	12	85	55	19	9.9	6.9	3.9	1.5
7	3.7	8.7	6.9	33	12	64	48	17	9.7	6.7	3.4	1.2
8	3.0	8.0	6.6	26	11	60	45	16	9.3	6.1	2.8	1.1
9	2.9	11	7.1	20	12	55	42	15	8.5	6.0	2.9	1.1
10	2.9	10	7.4	18	12	50	41	14	8.4	5.4	3.4	1.1
11	6.8	8.9	7.2	16	12	50	39	16	11	5.6	2.5	1.1
12	5.1	8.2	7.0	15	11	46	37	17	21	6.2	2.7	1.1
13	3.3	7.9	8.5	13	12	46	34	15	14	6.9	3.8	.95
14	3.1	7.6	11	12	11	47	32	22	13	6.2	3.1	.84
15	6.0	7.3	13	12	13	45	31	19	15	5.2	3.7	1.3
16	11	6.4	80	13	15	43	28	17	13	4.4	2.5	1.3
17	8.8	7.4	32	13	30	40	26	16	13	4.2	2.0	1.3
18	19	6.7	42	13	76	38	26	15	11	3.9	1.7	1.1
19	17	6.0	41	12	110	37	25	14	12	4.6	1.8	.96
20	7.9	6.2	27	11	300	35	24	14	12	4.6	1.5	1.6
21	6.5	8.1	100	10	2500	34	24	13	11	4.0	1.8	2.0
22	5.4	8.5	161	10	400	34	26	13	11	3.6	6.0	3.3
23	5.0	7.7	70	10	142	34	29	12	10	3.4	7.0	11
24	5.0	7.7	54	10	50	34	26	13	11	3.7	4.0	6.2
25	5.3	7.5	32	11	47	32	24	12	10	7.1	2.4	3.3
26	5.6	6.8	37	10	35	32	24	12	11	4.4	2.3	4.1
27	11	8.4	194	10	20	33	23	12	13	3.4	2.1	2.6
28	17	8.3	140	10	18	55	22	12	9.9	3.2	2.1	1.2
29	8.5	7.7	58	10	---	46	21	11	9.2	3.2	2.1	3.2
30	7.0	7.1	30	10	---	43	22	12	8.4	4.1	2.1	10
31	7.0	---	25	10	---	56	---	11	---	4.9	2.1	---
TOTAL	199.7	327.4	1246.1	641	3919	1884	1077	478	341.3	167.7	94.9	72.85
MEAN	6.44	10.9	40.2	20.7	140	60.8	35.9	15.4	11.4	5.41	3.06	2.43
MAX	19	68	194	80	2500	300	66	22	21	9.2	7.0	11
MIN	2.5	6.0	6.6	10	11	15	21	11	8.4	3.2	1.5	.84
CFSM	.09	.15	.57	.29	1.97	.86	.51	.22	.16	.08	.04	.03
IN.	.10	.17	.65	.34	2.06	.99	.57	.25	.18	.09	.05	.04
AC-FT	396	649	2470	1270	7770	3740	2140	948	677	333	188	144

CAL YR 1984	TOTAL	28395.8	MEAN	77.6	MAX	1940	MIN	2.2	CFSM	1.09	IN.	14.90	AC-FT	56320
WTR YR 1985	TOTAL	10448.95	MEAN	28.6	MAX	2500	MIN	.84	CFSM	.40	IN.	5.48	AC-FT	20730

05453000 BIG BEAR CREEK AT LADORA, IA

LOCATION.--Lat 41°44'58", long 92°10'55", in SW1/4 SW1/4 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 mi².

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; 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.--Estimated daily discharges: Nov. 9, Dec. 4-15, 24-26, Jan. 2 to Feb. 19, and Mar. 9-12. Records good except those for Nov. 9 and Mar 9-12, which are fair, and those for periods of ice effect, Dec. 4-15, 24-26, and Jan. 2 to Feb. 19, which are poor. U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--40 years, 122 ft³/s, 8.76 in/yr, 88,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft³/s Mar. 30, 1960, gage height, 14.60 ft, datum then in use; maximum gage height, 15.32 ft, datum then in use, Sept. 18, 1977; no flow for several day in 1956 and 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1945	*4,360	*22.80	Mar. 4	1015	4,280	22.22

Minimum daily discharge, 2.9 ft³/s Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	74	37	82	36	196	216	75	35	28	16	7.8
2	12	110	38	78	37	187	250	60	37	28	12	7.1
3	12	74	36	79	37	789	266	55	37	25	10	6.9
4	11	62	35	80	39	2830	231	53	33	24	9.8	5.9
5	11	51	35	79	40	451	199	54	34	22	9.8	6.4
6	13	47	36	78	41	278	175	61	33	21	9.9	6.8
7	17	45	38	74	41	239	151	53	31	20	8.8	5.7
8	17	43	38	68	40	204	137	49	30	19	7.5	5.1
9	17	158	38	60	41	187	129	49	27	19	6.7	4.8
10	15	117	39	62	41	184	126	44	25	19	9.3	7.7
11	22	74	40	54	42	170	117	52	32	19	7.1	6.4
12	28	61	48	49	42	146	109	68	60	19	7.8	6.0
13	18	56	50	43	42	143	103	49	49	21	9.1	5.1
14	15	54	51	41	42	139	97	74	37	21	8.1	5.2
15	28	48	52	35	41	125	93	71	57	20	6.7	7.2
16	58	44	93	36	53	119	89	59	62	16	5.9	5.1
17	69	46	128	37	70	107	82	57	45	15	6.1	3.6
18	56	46	98	38	120	101	80	53	39	13	10	3.8
19	158	42	90	37	210	99	77	51	37	14	7.4	2.9
20	64	33	80	33	409	91	73	55	36	15	6.6	4.1
21	49	40	135	33	3780	86	72	52	34	13	6.4	5.7
22	39	46	171	35	1210	82	78	46	36	12	13	9.5
23	34	47	89	37	983	84	91	44	32	11	27	33
24	31	42	82	39	843	85	83	45	36	10	21	43
25	32	40	87	38	373	77	71	44	32	23	13	18
26	34	39	99	37	262	76	68	42	28	18	9.8	12
27	31	45	186	38	189	79	65	41	47	11	8.7	12
28	67	45	538	37	185	127	63	42	36	9.3	8.2	5.3
29	52	41	234	37	---	130	60	40	29	7.7	8.1	6.9
30	42	39	156	37	---	109	60	41	27	8.6	8.4	47
31	38	---	141	37	---	191	---	37	---	14	7.8	---
TOTAL	1102	1709	3018	1548	9289	7911	3511	1616	1113	535.6	306.0	306.0
MEAN	35.5	57.0	97.4	49.9	332	255	117	52.1	37.1	17.3	9.87	10.2
MAX	158	158	538	82	3780	2830	266	75	62	28	27	47
MIN	11	33	35	33	36	76	60	37	25	7.7	5.9	2.9
CFSM	.19	.30	.52	.26	1.76	1.35	.62	.28	.20	.09	.05	.05
IN.	.22	.34	.59	.30	1.83	1.56	.69	.32	.22	.11	.06	.06
AC-FT	2190	3390	5990	3070	18420	15690	6960	3210	2210	1060	607	607

CAL YR 1984	TOTAL	67004.7	MEAN	183	MAX	3190	MIN	9.9	CFSM	.97	IN.	13.19	AC-FT	132900
WTR YR 1985	TOTAL	31964.6	MEAN	87.6	MAX	3780	MIN	2.9	CFSM	.46	IN.	6.29	AC-FT	63400

05453100 IOWA RIVER AT MARENGO, IA

LOCATION.-- Lat 41°48'48" long 92°03'51", in SE1/4 NE1/4 sec.24, T.81 N., R.11 W., Iowa County, Hydrologic Unit e07080208, on left bank 5 ft upstream from bridge on State Highway 411, 1.0 mi downstream from Big Bear Creek, 0.8 mi north of Marengo, 4.6 mi upstream from Hilton Creek, and at mile 139.1.

DRAINAGE AREA.--2,794 mi².

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.

REMARKS.--Estimated daily discharges: Dec. 3-5, 23-24, Dec. 31 to Mar. 6, Aug. 16-21, and Sept. 10-30. Records good except for periods of estimated discharge, which are poor.

COOPERATION.--Eight discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--29 years, 1,827 ft³/s, 8.88 in/yr , 1,324,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,800 ft³/s Mar. 31, 1960, gage height, 19.21 ft; maximum gage height, 19.79 ft July 12, 1969; minimum daily discharge, 24 ft³/s Jan. 29 to Feb. 1, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	1245	7,190	14.42	Feb. 24	----	7,000	ice jam
Feb. 21	2000	ice jam	*17.62	Mar. 4	unknown	*16,200	17.50

Minimum discharge, 168 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	764	649	1230	500	2700	1750	1430	609	549	271	203
2	325	1430	632	1240	480	2400	1820	1420	596	539	265	220
3	316	1760	582	1220	470	2550	1920	1370	586	552	254	253
4	312	1600	655	1160	465	8420	2070	1280	565	554	250	371
5	310	1390	705	1130	460	7620	2270	1200	556	525	246	456
6	308	1190	739	1150	455	8020	2370	1160	553	501	238	428
7	323	1080	733	1070	450	7500	2290	1150	548	471	232	378
8	331	993	753	1000	450	7560	2140	1150	536	443	218	351
9	343	1410	805	930	455	4580	2010	1120	515	426	209	351
10	333	1190	867	860	460	2880	1950	1090	492	403	205	477
11	386	989	867	795	465	2470	1870	1060	491	396	202	669
12	427	933	885	730	470	2360	1730	1070	562	385	224	905
13	416	911	763	700	475	2290	1650	1020	657	384	229	1210
14	407	901	760	705	480	2270	1540	1040	685	385	219	1290
15	411	878	791	710	520	2210	1490	1050	715	391	203	1280
16	496	850	1060	670	575	2050	1400	1020	769	381	183	1130
17	599	837	1480	655	620	1860	1330	976	872	361	180	929
18	873	821	1330	635	680	1700	1270	942	878	344	178	734
19	1250	803	1120	625	750	1580	1220	908	830	323	174	626
20	1100	748	1170	650	850	1490	1180	881	783	315	171	562
21	981	711	1650	680	2000	1370	1140	839	749	314	175	509
22	878	700	2670	700	3200	1310	1130	802	734	323	178	487
23	797	713	2500	695	5000	1270	1220	746	694	343	208	524
24	724	699	2360	680	6400	1260	1270	733	664	301	227	573
25	666	704	2460	635	5700	1250	1230	737	640	322	235	583
26	639	698	2260	610	4800	1230	1140	730	584	304	239	597
27	634	717	2370	595	4000	1230	1120	721	554	291	221	621
28	693	708	4290	595	3300	1350	1150	708	563	294	204	648
29	677	693	4380	575	---	1470	1170	680	610	297	201	735
30	613	667	3640	555	---	1420	1300	661	570	282	196	878
31	572	---	1530	535	---	1630	---	637	---	275	189	---
TOTAL	17473	28488	47456	24720	44930	89300	47140	30331	19160	11974	6624	18978
MEAN	564	950	1531	797	1605	2881	1571	978	639	386	214	633
MAX	1250	1760	4380	1240	6400	8420	2370	1430	878	554	271	1290
MIN	308	667	582	535	450	1230	1120	637	491	275	171	203
CFSM	.20	.34	.55	.29	.57	1.03	.56	.35	.23	.14	.08	.23
IN.	.23	.38	.63	.33	.60	1.19	.63	.40	.26	.16	.09	.25
AC-FT	34660	56510	94130	49030	89120	177100	93500	60160	38000	23750	13140	37640

CAL YR 1984	TOTAL	1122805	MEAN	3068	MAX	16000	MIN	308	CFSM	1.10	IN.	14.95	AC-FT	2227000
WTR YR 1985	TOTAL	386574	MEAN	1059	MAX	8420	MIN	171	CFSM	.38	IN.	5.15	AC-FT	766800

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 at mile 83.3.

DRAINAGE AREA.--3,115 mi².

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD (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 ft³/s. Ungated spillway is concrete overflow section 500 ft in length at elevation 712 ft above NGVD, contents, 469,000 acre-ft, surface area, 24,800 acres. Reservoir is used for flood control, low-flow augumentation, conservation and recreation. Normal operation will maintain an elevation of 670 ft Feb. 15 to June 15, surface area, 1,820 acres, 680 ft June 15 to Sept. 25, surface area, 4,900 acres, 683 ft Sep. 25 to Dec. 15, and 680 ft December 15 to Feb. 1 with a minimum release of 150 ft/s and maximum release of 10,000 ft/s Dec. 15 to May 1 and 6,000 ft³/s May 1 to Dec. 15.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 472,000 acre-ft July 21, 1969, elevation, 711.85 ft; minimum daily contents, 456 acre-ft Jan. 15, 1975; minimum elevation, 658.77 ft Mar. 10, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 62,500 acre-ft Feb. 28; maximum elevation, 692.26 ft Feb. 28; minimum daily contents, 9,540 acre-ft Apr. 28; minimum elevation, 675.05 ft Apr.29.

Capacity table (elevation, in feet, and contents, in acre-ft)

655	5,000	683	55,000	700	232,000
670	10,600	685	69,000	705	327,000
675	21,000	690	108,000	710	427,000
680	40,300	695	162,000	712	469,000

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29700	31100	27300	18000	19400	57300	11000	9940	18200	17900	18300	19100
2	29700	30800	27600	16700	19400	50300	10700	11000	18300	17800	18300	19000
3	29700	31000	27500	17200	19100	44700	11000	11600	18200	17800	18300	19000
4	29600	31100	27400	17800	19200	46700	11200	11000	18200	18000	18300	19000
5	29500	30900	27200	18600	19300	49200	10900	10000	18100	18000	18400	19100
6	29500	30200	26800	19700	19400	51300	10500	9860	18000	18100	18400	19300
7	29500	29700	26700	20500	19400	51600	10400	9940	18000	18100	18400	19600
8	29500	29300	26700	20600	19600	50100	10400	10300	18000	18000	18400	19900
9	29500	29900	26400	20200	19700	48000	10400	11100	17800	18200	18500	20000
10	29400	30100	25800	20000	19800	44600	10400	11800	17800	18100	18700	20200
11	29800	29200	25300	19700	19700	38400	10500	12600	17800	18200	18700	20400
12	29800	27700	24400	19200	19500	30900	10500	13300	17900	18200	18800	20800
13	29700	27100	23400	19100	19400	25800	10300	14000	18000	18300	18900	21700
14	29700	27000	22600	19200	19000	22000	10200	14600	18100	18500	19000	22600
15	29900	26900	21700	19500	18500	18900	10100	15300	18200	18400	18900	23500
16	30100	26900	21300	19500	18000	16900	9910	16000	18200	18200	18900	23900
17	30000	27100	21100	19400	17500	15300	10100	16400	18200	18100	18900	24300
18	31700	27300	20800	19400	17000	13900	10300	16600	18300	18000	19000	24500
19	32900	27600	20300	19800	16600	12800	10100	16800	18400	18000	18900	24500
20	32500	27800	19800	19700	16600	11600	10000	16900	18400	17800	18800	24700
21	31600	27700	20000	19500	18200	11200	10000	17100	18400	17700	18700	25000
22	30500	27600	20100	19400	21800	10900	10000	17400	18500	17700	18800	25200
23	29900	27500	20400	19400	27300	10900	10000	17600	18600	17700	18800	25200
24	29800	27400	19900	19200	38200	10300	10000	17800	18400	17700	18800	25200
25	30000	27100	18900	19100	49100	10200	9990	17800	18300	17900	19000	25200
26	29800	27400	18600	19200	59400	10400	9810	18100	18200	17900	19000	25200
27	30200	27900	19200	19400	62200	10500	9670	18000	18200	18000	19000	25200
28	29900	27800	20200	19500	62500	10300	9540	18000	18100	18000	19000	25200
29	29600	27700	22200	19700	---	10200	9660	18000	18000	18000	19100	25400
30	29100	27600	22200	19600	---	10200	9850	18200	18000	18200	19100	25400
31	31100	---	20800	19500	---	10900	---	18200	---	18300	19100	---
MEAN	30100	28500	23000	19300	25500	26300	10200	14700	18200	18000	18700	22600
MAX	32900	31100	27600	20600	62500	57300	11200	18200	18600	18500	19100	25400
MIN	29100	26900	18600	16700	16600	10200	9540	9860	17800	17700	18300	19000

CAL YR 1984 MEAN 115000 MAX 464000 MIN 18600
WTR YR 1985 MEAN 21200 MAX 62500 MIN 9540

05454000 RAPID CREEK NEAR IOWA CITY, IA

LOCATION.--Lat 41°41'19", long 91°29'15", in NE1/4 NE1/4 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 4.7 mi upstream from mouth.

DRAINAGE AREA.--25.3 mi².

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 IOWA 1967: Drainage area.

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

REMARKS.--Estimated daily discharges: Nov.21, Dec. 2-8, 18-20, 23-25, Dec. 31 to Feb. 21. Records good except for estimated discharge, which are poor.

AVERAGE DISCHARGE.--48 year, 15.9 ft³/s, 8.53 in/yr, 11,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft³/s May 23, 1965, gage height, 14.10 ft, from contracted-opening measurement of peak flow; maximum gage height, 14.93 ft July 17, 1972; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	2020	*1,620	11.04	Feb. 21	1605	1,330	*all.12
Oct. 31	2240	1,430	10.72				

(a) Ice jam
No flow Aug. 21, Sept. 7-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	325	14	32	7.8	45	34	11	2.8	1.7	1.1	.05
2	.54	71	12	27	7.6	36	29	9.0	2.9	1.5	.31	.03
3	.48	56	10	23	7.6	88	26	8.1	2.7	1.2	.15	.02
4	.43	46	9.4	25	7.4	224	24	7.6	2.5	1.1	.12	.01
5	.44	37	10	23	7.4	60	24	7.9	2.8	.94	.12	.01
6	.42	32	9.2	22	7.3	44	22	8.2	2.6	.88	.10	.01
7	.63	29	10	21	7.2	40	19	7.3	2.4	.78	.09	.00
8	.67	27	11	18	7.2	34	18	7.0	2.4	.63	.06	.00
9	.67	71	12	16	7.2	31	17	6.5	2.0	.63	.10	.00
10	.77	47	12	14	7.1	29	17	6.3	1.8	.55	2.3	.00
11	1.5	35	12	13	7.0	31	16	7.3	3.1	.57	1.1	.00
12	1.9	31	13	12	6.9	27	16	7.6	3.5	.62	.30	.00
13	1.3	28	11	11	6.9	27	16	6.4	2.6	.72	.33	.00
14	.96	27	15	10	6.9	24	15	8.0	2.6	.93	.18	.00
15	12	23	16	9.9	6.8	22	14	8.1	4.4	.97	.21	.00
16	23	20	26	9.6	7.4	22	13	7.3	2.8	.45	.14	.00
17	24	20	23	9.2	8.1	21	13	6.9	2.4	.31	.07	.00
18	294	20	18	8.8	11	20	13	6.1	2.3	.22	.04	.00
19	141	17	15	8.5	19	19	12	5.6	2.5	.23	.01	.00
20	47	16	17	8.1	21	17	12	6.0	2.0	.18	.01	.00
21	36	16	21	8.8	500	16	11	5.1	1.9	.15	.00	.00
22	29	16	17	9.5	734	16	12	4.7	4.6	.13	.07	.13
23	25	16	14	10	339	17	12	4.7	12	.08	.07	11
24	22	15	12	10	158	16	12	4.6	6.8	.07	.11	2.2
25	23	15	11	9.5	77	14	11	4.4	3.9	.50	.30	1.0
26	22	15	15	9.2	58	14	9.7	4.0	3.1	.78	.12	1.3
27	56	22	55	8.8	46	16	9.3	4.0	2.6	.57	.08	.65
28	74	17	81	8.6	44	21	9.2	4.0	2.4	.21	.06	.42
29	46	16	91	8.4	---	16	8.5	3.7	2.2	.14	.05	.44
30	37	16	49	8.2	---	16	9.8	3.6	2.0	.38	.05	.84
31	163	---	37	8.0	---	44	---	3.3	---	2.3	.05	---
TOTAL	1085.28	1142	678.6	420.1	2130.8	1067	474.5	194.3	94.6	20.42	7.80	18.11
MEAN	35.0	38.1	21.9	13.6	76.1	34.4	15.8	6.27	3.15	.66	.25	.60
MAX	294	325	91	32	734	224	34	11	12	2.3	2.3	11
MIN	.42	15	9.2	8.0	6.8	14	8.5	3.3	1.8	.07	.00	.00
CFSM	1.38	1.51	.87	.54	3.01	1.36	.62	.25	.12	.03	.01	.02
IN.	1.60	1.68	.00	.62	3.13	1.57	.70	.29	.14	.03	.01	.03
AC-FT	2150	2270	1350	833	4230	2120	941	385	188	41	15	36

CAL YR 1984	TOTAL	7644.38	MEAN	20.9	MAX	325	MIN	.12	CFSM	.83	IN.	11.24	AC-FT	15160
WTR YR 1985	TOTAL	7333.51	MEAN	20.1	MAX	734	MIN	.00	CFSM	.79	IN.	10.78	AC-FT	14550

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 50 ft upstream from bridge on county highway, 1.1 mi west of post office in Coralville, 1.5 mi downstream from Deer Creek and 2.7 mi upstream from mouth.

DRAINAGE AREA.--98.1 mi².

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

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

REMARKS.--Estimated daily discharge: Dec. 4-7, 12,17-26, Dec. 31 to Feb. 21. Records good except for periods of estimated discharge, which are fair. U.S. Army Corps of Engineers operate a Data Collection Platform at gage.

COOPERATION.--Three discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--33 years, 66.3 ft³/s, 9.18 in/yr, 48,030 acre-ft/yr; median of yearly mean discharges, 52 ft³/s 7.2 in/yr, 37,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s June 15, 1982, gage height, 14.61 ft; no flow Jan. 18 to Feb. 4, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 1	0045	1,270	9.90	Mar. 4	1045	1,260	9.70
Feb. 22	1515	*1,810	*10.70				

Minimum daily discharge, 2.4 ft³/s Sept. 8, 13-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	724	39	90	29	149	165	40	19	17	9.3	3.4
2	5.1	217	42	80	29	137	128	36	19	16	7.1	3.2
3	4.6	149	34	70	28	230	112	34	18	14	6.3	3.3
4	4.6	116	57	76	28	1010	100	33	17	13	6.5	2.8
5	3.8	89	86	74	28	323	96	32	18	12	6.9	2.5
6	3.3	75	78	72	27	187	92	36	17	12	6.6	2.8
7	2.9	68	73	70	27	165	82	31	17	11	6.1	2.5
8	3.6	61	70	68	27	144	77	29	17	10	5.2	2.4
9	3.8	298	69	64	27	128	73	28	15	10	6.3	2.5
10	4.7	382	69	54	27	122	71	25	15	9.4	48	2.8
11	46	157	67	46	27	119	69	28	19	8.5	14	3.1
12	57	119	43	39	27	107	65	51	25	7.6	9.1	2.5
13	12	102	33	35	27	101	62	32	22	7.2	13	2.4
14	7.0	92	43	34	27	97	60	48	19	6.9	8.1	2.4
15	23	82	46	33	27	89	59	53	25	16	6.2	2.4
16	80	70	80	33	30	86	56	37	20	13	5.7	2.4
17	52	67	62	32	38	79	53	35	18	11	5.3	2.4
18	207	64	49	32	60	75	50	31	17	11	4.9	3.1
19	542	59	46	31	120	74	47	28	19	10	4.9	3.1
20	132	54	48	30	240	69	44	29	17	10	4.9	2.8
21	80	52	56	32	580	65	43	27	17	9.4	4.5	3.3
22	62	51	52	33	1380	63	46	24	29	8.3	5.1	6.3
23	50	51	48	35	660	65	50	23	44	6.6	6.4	33
24	42	48	42	36	505	64	44	23	67	6.3	6.5	19
25	42	46	40	37	288	59	41	22	29	13	5.5	16
26	48	46	60	34	223	58	40	22	24	11	4.8	12
27	81	54	129	32	175	62	38	57	21	7.5	4.5	11
28	156	48	401	31	151	106	37	27	20	6.2	4.3	9.4
29	87	45	238	31	---	77	36	23	19	6.2	4.4	12
30	66	42	142	30	---	68	37	22	18	7.1	3.9	29
31	188	---	110	30	---	173	---	21	---	21	3.8	---
TOTAL	2102.7	3528	2452	1424	4862	4351	1973	987	661	328.2	238.1	205.8
MEAN	67.8	118	79.1	45.9	174	140	65.8	31.8	22.0	10.6	7.68	6.86
MAX	542	724	401	90	1380	1010	165	57	67	21	48	33
MIN	2.9	42	33	30	27	58	36	21	15	6.2	3.8	2.4
CFSM	.69	1.20	.81	.47	1.77	1.43	.67	.32	.22	.11	.08	.07
IN.	.80	1.34	.93	.54	1.84	1.65	.75	.37	.25	.12	.09	.08
AC-FT	4170	7000	4860	2820	9640	8630	3910	1960	1310	651	472	408

CAL YR 1984	TOTAL	33158.5	MEAN	90.6	MAX	816	MIN	2.9	CFSM	.92	IN.	12.57	AC-FT	65770
WTR YR 1985	TOTAL	23112.8	MEAN	63.3	MAX	1380	MIN	2.4	CFSM	.65	IN.	8.76	AC-FT	45840

05454500 IOWA RIVER AT IOWA CITY, IA

LOCATION.--Lat 41°39'24", long 91°32'27", in SE1/4 SE1/4 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 at mile 74.2.

DRAINAGE AREA.--3,271 mi².

WATER-DISCHARGE RECORDS

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. Oct. 1, 1934 to Sept. 30, 1972, at datum 10.00 ft higher. See WSP 1708 for history of changes prior to Oct. 1, 1984.

REMARKS.--Estimated daily discharges: Jan. 20 to Feb. 13, 15-17. Records excellent except for periods of estimated daily discharge, which are fair. 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 Data Collection platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--82 years, 1,714 ft³/s, 7.12 in/yr, 1,242,000 acre-ft/yr; median of yearly mean discharges, 1,460 ft³/s, 6.1 in/yr, 1,060,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,500 ft³/s June 8, 1918, gage height, 19.6 ft from graph based on gage readings, site and datum then in use; minimum daily, 29 ft³/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 ft³/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 ft³/s, estimated.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,500 ft³/s March 4, gage height, 21.50 ft; minimum discharge, 149 ft³/s Sept. 13 and 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	409	3060	1090	4150	740	8930	2580	1500	671	630	240	199
2	410	2190	938	2920	660	8900	2840	1490	670	628	231	197
3	408	2200	838	615	560	8900	2380	1540	660	538	232	196
4	407	2100	819	597	475	8660	2150	1590	660	452	231	203
5	406	2150	836	590	450	4920	2700	1600	662	452	217	208
6	409	1990	819	586	440	6210	2980	1590	661	455	198	207
7	410	1820	701	863	440	7380	2800	1400	659	452	205	193
8	409	1800	603	1570	440	8810	2610	1070	613	453	204	189
9	413	1950	936	1880	450	9240	2610	668	558	414	220	189
10	409	2250	1390	1790	480	9170	2410	669	565	371	304	179
11	458	2630	1660	1630	614	9040	2230	695	575	380	227	153
12	506	2880	1740	1640	640	8780	2230	721	589	375	213	150
13	534	2150	1730	1460	680	7830	2220	701	577	374	231	149
14	528	1480	1750	1140	775	6160	2020	737	573	423	232	150
15	585	1450	1740	936	960	5780	1840	749	694	456	237	149
16	718	1300	1790	1060	970	4520	1840	727	796	462	250	376
17	936	1070	1760	1180	990	3770	1630	801	784	366	253	659
18	1280	951	1720	1060	983	3390	1450	970	783	369	220	679
19	2310	937	1720	836	1090	3020	1560	963	786	368	213	599
20	2200	988	1560	960	1420	2740	1580	966	785	366	203	478
21	2390	1130	1260	940	3170	2200	1440	782	793	364	203	435
22	2320	1220	1240	845	4710	1870	1460	617	819	305	212	450
23	1700	1210	1430	855	4070	1870	1450	616	868	244	208	731
24	1170	1190	1710	880	3870	1860	1440	792	866	278	210	724
25	1030	1180	2120	900	3040	1680	1430	803	812	304	204	685
26	1110	1000	1510	720	2760	1510	1420	631	726	237	201	663
27	1200	842	710	660	5980	1610	1420	827	641	228	201	650
28	1540	1010	1990	640	8080	2060	1420	866	637	229	200	639
29	1600	1190	3310	640	---	2090	1300	689	637	229	201	655
30	1410	1170	4320	700	---	1850	1280	685	634	247	196	778
31	1410	---	4860	760	---	2180	---	677	---	254	200	---
TOTAL	31025	48488	50600	36003	49937	156930	58720	29132	20754	11703	6797	11912
MEAN	1001	1616	1632	1161	1783	5062	1957	940	692	378	219	397
MAX	2390	3060	4860	4150	8080	9240	2980	1600	868	630	304	778
MIN	406	842	603	586	440	1510	1280	616	558	228	196	149
AC-FT	61540	96180	100400	71410	99050	311300	116500	57780	41170	23210	13480	23630

CAL YR 1984 TOTAL 1257726 MEAN 3436 MAX 9390 MIN 377 AC-FT 2495000
WTR YR 1985 TOTAL 512001 MEAN 1403 MAX 9240 MIN 149 AC-FT 1016000

05454500 IOWA RIVER AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at Benton Street bridge at Iowa City, 0.5 mi downstream from gaging station.

PERIOD OF RECORD.--September 1906 to September 1907, water years 1944 to current year.

PERIOD OF DAILY RECORD.--
CHEMICAL ANALYSIS: September 1906 to September 1907, October 1943 to September 1954.
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: January 1944 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1943 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at times of analysis. During periods of partial ice cover, sediment samples are collected in open water channel.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 760 microsiemens Jan. 4, 1984; minimum daily, 150 microsiemens May 17, 1974.
WATER TEMPERATURES: Maximum daily, 32.0°C July 19, 1957, Aug. 24, 25, 1959, June 27, 1971; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 7,800 mg/L June 13, 1953; minimum daily mean, 1 mg/L Feb. 4, 1979, Jan. 14, 15, 29, 1984.
SEDIMENT LOADS: Maximum daily, 177,000 tons May 23, 1944; minimum daily, 0.82 ton Jan. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 660 microsiemens Feb. 19; minimum daily, 250 microsiemens Feb. 28.
WATER TEMPERATURES: Maximum daily, 28.0°C Sep. 19; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,400 mg/L Dec. 29; minimum daily mean, 4 mg/L Feb. 15.
SEDIMENT LOADS: Maximum daily, 25,000 tons Mar. 4; minimum daily, 8.3 tons Feb. 8.

SPECIFIC CONDUCTANCE, LABORATORY (MICROSIEMENS/CM DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	295	---	---	630	---	---	560	---	470	480	---
2	490	420	---	---	630	---	---	560	---	480	500	---
3	540	---	---	440	---	---	530	---	560	---	---	470
4	500	---	---	460	630	270	540	---	560	---	---	480
5	480	445	580	---	600	290	535	---	560	---	475	480
6	480	460	50	--	50	300	540	560	545	---	480	480
7	---	450	560	430	590	320	---	570	530	---	480	480
8	480	480	560	410	640	330	530	580	---	510	500	---
9	480	500	---	400	---	310	540	595	---	510	460	480
10	480	---	560	410	---	---	540	580	540	505	450	480
11	480	---	580	420	630	270	550	570	530	505	---	480
12	480	520	580	460	560	270	560	---	540	505	460	500
13	---	520	620	---	630	320	560	610	540	520	460	500
14	---	520	620	520	620	330	---	620	540	---	450	---
15	460	520	600	540	660	360	550	600	---	480	480	---
16	470	520	---	580	---	400	580	590	---	500	460	460
17	465	520	600	---	---	---	---	600	520	520	450	480
18	---	---	560	580	630	450	555	600	530	520	---	460
19	280	520	580	---	660	460	560	---	520	500	460	460
20	---	---	540	---	650	470	570	---	520	520	480	450
21	---	510	560	600	630	---	---	605	500	---	480	---
22	460	---	500	600	440	480	580	585	500	500	440	440
23	465	---	---	600	---	500	560	580	---	470	440	---
24	465	---	560	---	---	---	---	600	470	460	460	460
25	470	---	---	620	370	520	570	---	480	470	---	460
26	480	500	---	---	340	550	---	---	470	490	450	460
27	460	---	560	---	270	540	560	---	460	500	440	460
28	---	---	480	570	250	550	---	580	460	---	440	480
29	450	---	480	620	---	550	570	580	470	480	460	---
30	460	510	---	580	---	---	560	580	---	440	480	480
31	465	---	480	610	---	---	---	575	---	440	460	---

05454500 IOWA RIVER AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	11.0	---	---	.0	---	---	16.0	---	---	20.0	---
2	13.0	8.0	---	---	.0	---	---	14.0	---	25.0	22.0	---
3	16.0	---	---	1.0	---	---	10.0	---	18.0	---	---	25.0
4	16.0	---	---	1.0	.0	2.0	14.0	---	18.0	---	---	23.0
5	16.0	8.0	.0	---	2.0	.0	7.0	---	18.0	---	22.0	24.0
6	17.0	6.0	.0	---	1.0	2.0	15.0	16.0	21.0	---	24.0	25.0
7	---	14.0	.0	1.0	.0	3.0	---	22.0	22.0	---	24.0	25.0
8	16.0	15.0	.0	.0	.0	2.0	---	17.0	---	---	22.0	---
9	17.0	12.0	---	1.0	---	3.0	4.0	18.0	---	---	23.0	25.0
10	17.0	---	3.0	1.0	---	---	7.0	18.0	19.0	---	23.0	22.0
11	17.0	---	7.0	.0	2.0	5.0	7.0	19.0	18.0	---	---	20.0
12	17.0	11.0	6.0	.0	.0	2.0	8.0	---	17.0	---	23.0	19.0
13	---	11.0	2.0	---	.0	5.0	14.0	17.0	20.0	---	24.0	19.0
14	---	10.0	6.0	.0	.0	4.0	---	17.0	18.0	---	24.0	---
15	18.0	7.0	3.0	.0	.0	4.0	13.0	17.0	---	---	22.0	---
16	15.0	6.0	---	.0	---	6.0	14.0	15.0	---	20.0	22.0	19.0
17	15.0	6.0	2.0	---	---	---	---	14.0	20.0	23.0	22.0	19.0
18	---	---	.0	3.0	2.0	5.0	15.0	16.0	---	24.0	---	20.0
19	16.0	6.0	.0	.0	1.0	8.0	15.0	---	---	24.0	22.0	28.0
20	---	---	.0	---	1.0	7.0	17.0	---	---	23.0	21.0	22.0
21	---	5.5	4.0	.0	1.0	---	---	18.0	---	---	20.0	---
22	16.0	---	5.0	2.0	1.0	7.0	21.0	16.0	---	23.0	21.0	16.0
23	10.0	---	---	1.0	---	8.0	18.0	21.0	---	21.0	22.0	---
24	16.0	---	.0	---	---	---	---	16.0	---	23.0	20.0	14.0
25	14.0	---	---	1.0	.0	6.0	16.0	---	---	24.0	---	15.0
26	15.0	8.5	---	---	1.0	0.0	---	---	---	24.0	21.0	15.0
27	15.0	---	2.0	---	.0	0.0	16.0	---	---	23.0	19.0	13.0
28	---	---	5.0	.0	1.0	9.0	---	14.0	---	---	21.0	15.0
29	8.0	---	4.0	.0	---	8.0	14.0	18.0	---	---	22.0	---
30	15.0	4.5	---	1.0	---	---	16.0	---	---	24.0	21.0	15.0
31	15.0	---	2.0	.0	---	---	---	22.0	---	22.0	21.0	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	35	39	916	8230	11	32	218	2440	5	10	608	14700
2	31	34	178	1050	10	25	147	1160	8	14	465	11200
3	29	32	87	517	10	23	99	164	11	17	445	10700
4	28	31	70	397	11	24	85	137	12	15	1070	25000
5	28	31	54	313	14	32	81	129	16	19	400	5310
6	31	34	42	226	13	29	76	120	16	19	245	4110
7	30	33	35	172	12	23	75	175	15	18	172	3430
8	30	33	30	146	10	16	75	318	7	8.3	239	5690
9	30	33	64	337	19	48	70	355	7	8.5	338	8430
10	30	33	110	668	38	143	54	261	7	9.1	402	9950
11	51	63	115	817	10	45	33	145	17	28	379	9250
12	53	72	85	661	23	108	38	168	39	67	320	7590
13	42	61	54	313	12	56	31	122	9	17	259	5480
14	37	53	34	136	11	52	12	37	8	17	202	3360
15	46	73	33	129	13	61	8	20	4	10	148	2310
16	63	122	31	109	13	63	7	20	5	13	105	1280
17	80	202	25	72	28	133	7	22	7	19	68	692
18	264	1280	22	56	15	70	7	20	8	21	69	632
19	738	4750	19	48	16	74	7	16	8	24	88	718
20	402	2390	34	91	15	63	7	18	34	130	72	533
21	220	1420	39	119	17	58	6	15	347	3950	83	493
22	90	564	29	96	21	70	6	14	620	7950	88	444
23	59	271	25	82	16	62	5	12	488	5360	74	374
24	52	164	22	71	13	60	6	14	356	3720	73	367
25	61	170	22	70	14	80	6	15	270	2220	78	354
26	62	186	21	57	14	57	25	49	220	1640	110	448
27	73	237	19	43	14	27	39	69	349	5630	121	526
28	142	590	18	49	420	2260	21	36	557	12200	147	818
29	81	350	17	55	1400	12500	7	12	---	---	97	547
30	42	160	13	41	875	10200	20	38	---	---	80	400
31	88	507	---	---	280	3670	7	14	---	---	142	836
TOTAL	---	14018	---	15171	---	30164	---	6135	---	43153.9	---	135972

05454500 IOWA RIVER AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	184	1280	70	283	98	178	71	121	42	27	27	15
2	132	1010	57	229	87	157	69	117	35	22	33	18
3	80	514	67	279	78	139	58	84	33	21	35	19
4	82	476	86	369	76	135	51	62	35	22	33	18
5	85	620	79	341	76	136	75	92	35	21	30	17
6	81	652	72	309	85	152	85	104	34	18	28	16
7	68	514	75	283	90	160	80	98	48	27	25	13
8	72	507	60	173	91	151	68	83	38	21	24	12
9	82	578	48	87	88	133	50	56	37	22	24	12
10	65	423	43	78	86	131	54	54	42	34	34	16
11	60	361	76	143	103	160	61	63	29	18	32	13
12	68	409	82	160	86	137	52	53	46	26	40	16
13	75	450	76	144	85	132	50	50	38	24	42	17
14	76	415	75	149	89	138	65	74	77	48	34	14
15	77	383	75	152	87	163	64	79	57	36	29	12
16	77	383	80	157	82	176	73	91	44	30	37	38
17	85	374	74	160	80	169	110	109	60	41	33	59
18	94	368	70	183	79	167	67	67	49	29	32	59
19	106	446	70	182	82	174	55	55	41	24	38	61
20	105	448	72	188	82	174	72	71	45	25	33	43
21	102	397	72	152	80	171	70	69	38	21	31	36
22	117	461	77	128	95	210	64	53	35	20	49	60
23	124	485	82	136	105	246	64	42	45	25	70	138
24	105	408	88	188	109	255	78	59	65	37	55	108
25	90	347	114	247	94	206	73	60	54	30	43	80
26	90	345	90	153	85	167	58	37	43	23	33	59
27	92	353	78	174	81	140	63	39	35	19	25	44
28	82	314	94	220	86	148	58	36	26	14	27	47
29	70	246	78	145	92	158	55	34	30	16	23	41
30	71	245	77	142	83	142	65	43	47	25	30	63
31	---	---	89	163	---	---	56	38	28	15	---	---
TOTAL	---	14212	---	5897	---	4905	---	2093	---	781	---	1164

TOTAL LOAD FOR YEAR: 273665.9 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
03...	10:45	16.0	410	29	32	--	--	--	--	99
NOV										
06...	10:55	10.0	2120	40	229	--	--	--	--	99
APR										
05...	11:00	7.5	2720	78	573	--	--	--	--	99
MAY										
09...	09:30	20.5	665	66	119	--	--	--	--	95
23...	14:45	21.0	616	68	113	55	71	84	92	99
JUN										
20...	14:30	22.0	800	66	143	55	67	78	90	99
JUL										
02...	09:30	25.0	639	79	136	--	--	--	--	99
26...	09:15	25.0	216	52	30	--	--	--	--	97
AUG										
02...	09:15	23.5	228	33	20	--	--	--	--	99
23...	09:00	22.0	195	37	19	--	--	--	--	98
SEP										
03...	14:15	26.5	196	36	19	--	--	--	--	99
26...	14:15	17.0	650	33	58	--	--	--	--	99

05454500 IOWA RIVER AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
NOV							
06...	11:20	2120	7	1	1	6	48
MAY							
09...	10:00	665	6	--	0	7	55
JUL							
02...	13:15	639	7	--	0	6	56

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
NOV						
06...	82	94	98	99	100	--
MAY						
09...	84	91	93	96	98	100
JUL						
02...	83	91	95	97	100	--

05455000 RALSTON CREEK AT IOWA CITY, IA

LOCATION.--Lat 41°39'50", long 91°30'48", in SE1/4 NW1/4 sec. 11, T.79 N., R.6 W., Johnson County, Hydrologic Unit 07080209, on left bank 10 ft upstream from bridge on Rochester Avenue, 1.0 mi northeast of post office in Iowa City and 2.2 mi upstream from mouth.

DRAINAGE AREA.--3.01 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1924 to current year.

REVISED RECORDS.--WSP 1508: 1933, 1935-37, 1940-41 (M), 1942, 1943 (M), 1948-51, 1952 (P), 1953, 1954 (M), 1955, WDR IOWA 1967: 1965-66; WDR IA-80-1: 1965(M).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 663.27 ft above NGVD (University of Iowa bench mark).

REMARKS.--Estimated daily discharge: Dec. 18-26, Jan. 1-4, 9-13, Jan. 16 to Feb. 14. Records fair except for periods of estimated daily discharge, which are poor.

AVERAGE DISCHARGE.--61 years, 1.72 ft³/s, 7.76 in/yr, 1,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,760 ft³/s July 17, 1972, gage height, 9.01 ft; maximum gage gage height, 9.06 ft July 18, 1956; no flow at times most years.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	2040	*175	*3.99				

No flow Sept. 12 - 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	27	1.2	3.4	1.0	4.5	3.4	1.2	.17	.10	.13	.02
2	.08	6.9	1.5	3.3	.96	3.2	2.7	.78	.14	.11	.08	.02
3	.05	5.0	.97	2.9	.96	20	2.3	.65	.11	.09	.07	.02
4	.04	3.7	.84	3.0	.94	29	2.1	.59	.13	.06	.06	.02
5	.05	3.1	.90	2.9	.95	6.2	2.9	.77	.14	.06	.06	.02
6	.10	4.0	.73	2.7	.92	4.5	2.1	.83	.14	.06	.06	.01
7	.13	2.1	.79	2.1	.90	4.4	1.8	.68	.15	.05	.06	.01
8	.10	2.1	.96	1.8	.92	3.5	1.8	.63	.16	.05	.05	.01
9	.34	11	1.0	1.7	.94	3.1	1.8	.47	.13	.05	.58	.01
10	.16	4.0	1.1	1.6	.96	2.9	1.9	.52	.11	.04	1.9	.01
11	2.6	2.7	1.2	1.5	.98	3.1	1.7	.78	.19	.16	.24	.01
12	.53	2.3	1.3	1.4	1.0	2.4	1.6	.79	.42	.07	.28	.00
13	.26	2.1	1.2	1.4	1.1	2.7	1.7	.60	.22	.05	.26	.00
14	.23	2.1	3.3	1.5	1.2	2.2	1.4	1.1	.23	.80	.18	.00
15	4.7	1.8	2.6	1.4	1.3	2.0	1.4	1.0	.62	.24	.14	.00
16	13	1.5	3.6	1.4	1.5	1.9	1.4	.90	.27	.08	.14	.00
17	4.1	1.6	2.2	1.3	1.7	1.8	.94	.77	.17	.05	.20	.00
18	54	1.6	1.6	1.3	8.0	1.7	1.1	.56	.17	.04	.08	.00
19	14	1.3	1.4	1.3	26	1.7	.96	.45	.15	.04	.04	.00
20	4.6	1.2	1.3	1.3	10	1.5	.91	.68	.12	.03	.03	.00
21	4.6	1.2	3.0	1.2	116	1.6	.87	.50	.18	.03	.03	.03
22	3.2	1.2	1.5	1.2	38	1.6	1.2	.45	1.1	.03	.09	.60
23	2.7	1.3	1.2	1.2	22	1.8	1.5	.41	2.4	.02	.03	9.1
24	2.5	1.2	.90	1.2	15	1.7	1.4	.37	.43	.12	.12	.34
25	3.9	1.2	.74	1.2	8.4	1.4	1.1	.35	.18	.16	.03	.74
26	3.0	1.3	1.5	1.2	6.3	1.4	.78	.35	.14	.01	.03	.60
27	19	2.9	14	1.1	4.4	2.3	.72	.35	.14	.01	.03	.17
28	9.9	1.3	13	1.1	4.4	3.1	.78	.41	.14	.01	.03	.07
29	4.8	1.3	12	1.1	---	1.6	.68	.29	.11	.01	.03	.22
30	3.4	1.2	4.5	1.1	---	2.1	1.0	.34	.11	.19	.02	1.1
31	20	---	3.4	1.0	---	8.0	---	.24	---	.90	.02	---
TOTAL	176.12	101.2	85.43	51.8	276.73	128.9	45.94	18.81	8.87	3.72	5.10	13.13
MEAN	5.68	3.37	2.76	1.67	9.88	4.16	1.53	.61	.30	.12	.16	.44
MAX	54	27	14	3.4	116	29	3.4	1.2	2.4	.90	1.9	9.1
MIN	.04	1.2	.73	1.0	.90	1.4	.68	.24	.11	.01	.02	.00
CFSM	1.89	1.12	.92	.55	3.28	1.38	.51	.20	.10	.04	.05	.15
IN.	2.18	1.25	1.06	.64	3.42	1.59	.57	.23	.11	.05	.06	.16
AC-FT	349	201	169	103	549	256	91	37	18	7.4	10	26

CAL YR 1984	TOTAL	857.57	MEAN	2.34	MAX	54	MIN	.00	CFSM	.78	IN.	10.60	AC-FT	1700
WTR YR 1985	TOTAL	915.75	MEAN	2.51	MAX	116	MIN	.00	CFSM	.83	IN.	11.32	AC-FT	1820

05455000 RALSTON CREEK AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: October 1960 to current year.
SUSPENDED-SEDIMENT DISCHARGE: April 1952 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, 8,000 microsiemens Dec. 24, 1973; minimum daily, 120 microsiemens May 19, 20, 1977.
WATER TEMPERATURES: Maximum daily, 31.0°C July 21, 1968; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 9,300 mg/L Aug. 20, 1975; minimum daily mean, 0 mg/L on many days in 1953-59, 1963-68, 1971, 1975-77, 1980-81, 1983, 1984, 1985.
SEDIMENT LOADS: Maximum daily, 4,300 tons May 23, 1966; minimum daily, 0 ton on many days most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1600 microsiemens Feb. 18; minimum daily, 220 microsiemens Sept. 22,23.
WATER TEMPERATURES: Maximum daily, 25.0°C July 24, Aug. 13, Sep. 5, 6; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 685 mg/L Feb. 21, Mar. 4; minimum daily mean, 0 mg/L on several days during September.
SEDIMENT LOADS: Maximum daily, 215 tons Feb. 21; minimum daily, 0 ton on many days during October, June, July August, and September.

SPECIFIC CONDUCTANCE, LABORATORY (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	600	---	480	---	510	520	600	480	420	400	540	520
2	590	---	480	---	---	520	520	490	440	400	510	580
3	610	---	480	500	610	440	480	450	420	490	560	440
4	580	---	480	490	510	400	540	440	420	420	540	580
5	540	---	520	500	660	485	510	370	400	460	500	540
6	---	500	500	500	---	520	460	440	480	380	420	540
7	---	500	---	---	560	540	520	430	405	410	500	505
8	---	520	510	480	600	510	540	440	420	380	540	580
9	---	520	480	---	610	525	440	550	410	390	440	550
10	---	520	480	520	---	560	440	440	560	380	420	560
11	---	520	510	890	940	480	480	550	405	320	460	520
12	470	520	---	580	590	580	460	480	430	390	480	---
13	---	520	450	580	540	550	500	460	440	370	470	---
14	---	520	510	510	500	540	450	480	420	480	540	---
15	---	520	---	510	460	520	480	585	520	390	480	---
16	---	450	540	520	530	490	510	460	520	500	440	---
17	---	450	---	510	700	640	500	440	440	440	510	---
18	---	450	---	610	1600	540	510	560	440	430	500	---
19	---	460	760	660	700	530	450	450	410	440	540	---
20	---	460	590	560	660	500	490	400	620	460	460	---
21	---	460	---	560	340	500	530	440	420	590	460	---
22	---	460	610	480	380	520	---	440	520	520	580	220
23	---	460	620	560	410	520	520	430	240	560	460	220
24	---	460	---	840	500	580	500	440	400	450	420	320
25	510	460	---	560	540	540	520	440	500	480	450	270
26	---	460	---	510	540	535	450	400	420	530	450	360
27	---	460	230	---	565	480	460	440	405	580	520	360
28	560	460	400	560	520	575	540	420	420	580	520	450
29	620	450	---	480	---	600	540	430	420	480	580	430
30	---	450	---	590	---	610	560	660	380	540	500	420
31	---	---	---	640	---	560	---	80	---	520	590	---

05455000 RALSTON CREEK AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	10.0	4.0	.0	.0	7.0	6.0	11.0	16.0	17.0	20.0	21.0
2	7.0	5.0	4.0	.0	---	4.0	8.0	10.0	15.0	18.0	20.0	22.0
3	14.0	4.0	.0	1.0	.0	4.0	5.0	9.0	16.0	18.0	21.0	22.0
4	14.0	10.0	.0	1.0	.0	4.0	6.0	10.0	13.0	20.0	18.0	23.0
5	15.0	5.0	.0	2.0	.0	3.0	5.0	15.0	15.0	18.0	20.0	25.0
6	16.0	6.0	.0	1.0	.0	4.0	3.0	10.0	16.0	20.0	20.0	25.0
7	15.0	4.0	.0	1.0	---	5.0	7.0	11.0	20.0	20.0	21.0	22.5
8	13.0	7.0	.0	1.0	.0	7.0	3.0	20.0	20.0	20.0	22.0	23.0
9	17.0	11.0	.0	1.0	.0	6.0	1.0	12.0	20.0	20.0	22.0	22.0
10	15.0	5.0	2.0	.0	1.0	8.0	5.0	12.0	16.0	21.0	22.0	21.0
11	18.0	5.0	2.0	.0	1.0	8.5	5.0	15.0	14.0	20.0	22.0	18.0
12	18.0	5.0	1.0	---	.0	8.0	7.0	16.0	14.0	20.0	23.0	---
13	18.0	5.0	1.0	.0	1.0	7.0	10.0	18.0	15.0	24.0	25.0	---
14	17.0	5.0	1.0	.0	1.0	7.0	9.0	16.0	14.0	21.0	22.0	---
15	15.0	5.0	.0	.0	.0	9.0	5.0	12.0	20.0	19.0	23.0	---
16	11.0	4.0	4.0	.0	1.5	8.0	8.0	11.0	15.0	18.0	19.5	---
17	10.0	6.0	.0	.5	1.5	9.0	8.0	10.0	17.0	18.0	23.5	---
18	11.0	4.0	.0	.0	3.0	8.0	14.0	11.0	16.0	24.0	21.0	---
19	10.0	1.0	.0	.0	2.0	0.0	12.0	20.0	15.0	22.5	22.0	---
20	10.0	1.0	.0	.0	2.0	2.0	20.0	15.0	16.0	24.0	18.0	---
21	10.0	1.0	0	10	10	10.0	20.0	11.0	18.0	23.0	15.0	15.0
22	7.0	.0	.0	1.0	2.0	8.0	16.0	18.0	19.0	23.0	18.0	15.0
23	5.0	.0	.0	1.0	3.0	7.0	15.0	15.0	20.0	24.0	18.0	14.0
24	5.0	.0	---	.0	3.0	6.0	12.0	18.0	19.0	25.0	19.0	14.0
25	8.0	1.0	---	1.0	3.0	6.0	14.0	17.0	19.0	22.5	17.0	13.0
26	9.0	3.0	---	---	4.0	1.0	12.0	16.0	20.0	20.0	17.0	12.0
27	15.0	7.0	2.0	---	4.0	2.0	10.0	18.0	20.0	23.0	18.5	15.0
28	8.0	2.0	4.0	.0	5.0	2.0	10.0	16.0	16.0	20.0	19.5	12.0
29	5.0	4.0	---	.0	---	9.0	10.0	14.0	17.0	20.0	20.0	11.0
30	10.0	4.0	.0	.0	---	7.0	12.0	15.0	18.0	20.0	20.0	10.0
31	8.0	---	.0	.0	---	3.0	---	20.0	---	20.0	18.0	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	47	.00	534	50	62	.20	88	.81	37	.10	74	.90
2	25	.00	64	1.2	82	.33	101	.90	35	.09	47	.41
3	15	.00	62	.84	71	.19	66	.52	28	.07	422	23
4	19	.00	63	.63	70	.16	56	.45	35	.09	685	54
5	26	.00	50	.42	62	.15	38	.30	48	.12	160	2.7
6	57	.02	46	.50	77	.15	43	.31	36	.09	85	1.0
7	15	.00	45	.26	57	.12	47	.27	42	.10	105	1.2
8	31	.00	43	.24	59	.15	42	.20	58	.14	97	.92
9	60	.06	69	2.0	70	.19	50	.23	52	.13	67	.56
10	28	.01	100	1.1	43	.13	35	.15	56	.15	63	.49
11	105	1.2	72	.52	33	.11	28	.11	77	.20	64	.54
12	108	.15	70	.43	29	.10	31	.12	49	.13	48	.31
13	67	.05	69	.39	32	.10	31	.12	54	.16	39	.28
14	52	.03	68	.39	74	.66	28	.11	64	.21	32	.19
15	280	5.5	70	.34	66	.46	41	.15	65	.23	42	.23
16	487	36	72	.29	76	.74	43	.16	74	.30	73	.37
17	365	4.0	75	.32	69	.41	25	.09	53	.24	80	.39
18	671	164	88	.38	69	.30	27	.09	215	4.6	67	.31
19	244	19	107	.38	44	.17	15	.05	110	7.7	45	.21
20	92	1.1	77	.25	49	.17	37	.13	82	2.2	36	.15
21	110	1.4	59	.19	75	.61	38	.12	685	215	55	.24
22	78	.67	80	.26	41	.17	39	.13	450	46	53	.23
23	100	.73	79	.28	22	.07	30	.10	407	24	70	.34
24	122	.82	83	.27	20	.05	30	.10	220	8.9	33	.15
25	82	.86	83	.27	17	.03	23	.07	78	1.8	24	.09
26	80	.65	94	.33	16	.06	28	.09	62	1.1	27	.10
27	153	15	71	.56	442	43	32	.10	75	.89	40	.25
28	97	3.4	56	.20	385	14	33	.10	93	1.1	34	.28
29	65	.84	60	.21	100	3.2	32	.10	---	---	25	.11
30	91	.84	70	.23	75	.91	22	.07	---	---	90	.51
31	218	41	---	---	63	.58	18	.05	---	---	210	4.5
TOTAL	---	297.33	---	63.68	---	67.67	---	6.30	---	315.84	---	94.96

05455000 RALSTON CREEK AT IOWA CITY, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	65	.60	88	.29	32	.01	185	.05	52	.02	43	.00
2	67	.49	73	.15	31	.01	94	.03	25	.00	32	.00
3	99	.61	77	.14	30	.00	70	.02	19	.00	27	.00
4	56	.32	82	.13	29	.01	60	.00	37	.00	36	.00
5	106	.83	145	.30	27	.01	53	.00	54	.00	24	.00
6	98	.56	114	.26	25	.00	48	.00	58	.00	30	.00
7	90	.44	100	.18	24	.00	47	.00	44	.00	46	.00
8	87	.42	74	.13	23	.00	46	.00	40	.00	84	.00
9	72	.35	38	.05	21	.00	44	.00	76	.12	92	.00
10	55	.28	34	.05	91	.03	42	.00	116	.60	59	.00
11	70	.32	83	.17	66	.03	182	.08	49	.03	53	.00
12	74	.32	46	.10	122	.14	152	.03	42	.03	---	---
13	71	.33	61	.10	112	.07	129	.02	56	.04	---	---
14	70	.26	172	.51	129	.08	260	.56	30	.01	---	---
15	81	.31	64	.17	119	.20	352	.23	36	.01	---	---
16	61	.23	122	.30	70	.05	118	.03	57	.02	---	---
17	56	.14	93	.19	65	.03	77	.01	94	.05	---	---
18	82	.24	33	.05	75	.03	61	.00	25	.00	---	---
19	68	.18	26	.03	60	.02	55	.00	26	.00	---	---
20	40	.10	126	.23	50	.02	60	.00	67	.00	---	---
21	20	.05	166	.22	120	.06	80	.00	50	.00	39	.00
22	45	.15	133	.16	163	.48	60	.00	81	.02	91	.15
23	100	.41	82	.09	270	1.7	57	.00	57	.00	399	.7
24	62	.23	58	.06	150	.17	80	.03	86	.03	225	.21
25	75	.22	48	.05	209	.10	74	.03	98	.00	240	.48
26	99	.21	46	.04	191	.07	37	.00	60	.00	159	.26
27	70	.14	44	.04	177	.07	29	.00	50	.00	40	.02
28	63	.13	42	.05	143	.05	39	.00	39	.00	32	.00
29	60	.11	39	.03	135	.04	43	.00	32	.00	48	.03
30	84	.23	35	.03	180	.05	103	.05	24	.00	60	.18
31	---	---	34	.02	---	---	119	.29	27	.00	---	---
TOTAL	---	9.21	---	4.32	---	3.53	---	1.46	---	0.98	---	18.33

TOTAL LOAD FOR YEAR: 883.61 TONS.

05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IA

LOCATION.--Lat 41°39'05", long 91°30'27", in SW1/4 NE1/4 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, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--2.94 mi².

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

REVISED RECORDS.--WDR IOWA 1966: Drainage area.

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

REMARKS.--Estimated daily discharges: Dec. 5-7, 18-19, 23-25, Jan. 1-4, Jan. 9 to Feb. 19. Records good except for periods of estimated daily discharge, which are poor.

AVERAGE DISCHARGE.--22 years, 2.45 ft³/s, 11.3 in/yr, 1,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,070 ft³/s July 17, 1972, gage height, 9.47 ft; no flow at times most years.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	1905	*275	*5.84	No other peak greater than base discharge.			

No flow July 29, Sept. 3-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	18	1.1	3.8	.98	4.1	3.1	.77	.37	.10	.16	.02
2	.13	4.9	1.5	3.6	.97	3.3	2.6	.75	.41	.10	.10	.01
3	.11	3.9	1.1	3.4	.96	22	2.1	.68	.29	.08	.07	.00
4	.08	3.1	1.0	3.1	.94	27	2.0	.65	.30	.07	.09	.00
5	.08	2.6	.99	2.9	.93	5.9	3.3	1.5	.29	.06	.09	.00
6	.74	2.3	.98	2.8	.91	4.5	1.9	.72	.26	.07	.06	.00
7	.35	2.1	1.0	2.3	.90	4.3	1.6	.63	.24	.05	.02	.00
8	.19	1.9	1.1	1.9	.90	3.8	1.4	.60	.23	.04	.01	.00
9	.86	4.0	1.1	1.7	.90	3.3	1.3	.58	.19	.05	4.5	.00
10	.12	2.9	1.0	1.6	.91	3.2	1.4	.55	.36	.03	4.3	.00
11	3.8	2.3	1.1	1.5	.93	3.1	1.4	1.9	.59	1.1	.18	.00
12	.52	2.1	1.1	1.4	.96	2.6	1.3	.77	1.3	.22	.48	.00
13	.30	2.1	1.2	1.4	.98	3.2	1.6	.87	.25	.11	.50	.00
14	.25	1.9	3.4	1.3	.99	3.0	1.3	1.6	.58	4.2	.14	.00
15	5.5	1.8	2.0	1.2	1.0	2.9	1.2	.64	1.4	.24	.16	.00
16	13	1.7	2.4	1.2	1.3	2.8	1.1	.84	.25	.08	.08	.00
17	3.0	1.6	2.0	1.1	2.0	2.5	.93	.63	.22	.06	.05	.00
18	53	1.4	1.7	1.1	3.8	2.2	.99	.59	.62	.04	.07	.00
19	12	1.3	1.5	1.0	7.2	2.1	.91	.55	.25	.09	.02	.00
20	3.4	1.3	1.7	.98	15	2.1	.89	1.6	.17	.05	.01	.00
21	3.4	1.2	3.4	1.0	76	1.9	1.1	.52	.68	.01	.01	.47
22	2.2	1.2	1.9	1.0	25	2.0	1.7	.51	1.1	.01	.61	4.0
23	1.8	1.3	1.5	1.1	22	2.3	2.4	.56	3.2	.01	.09	10
24	1.6	1.3	1.4	1.0	14	1.9	.95	.50	.27	.14	.52	.45
25	2.9	1.3	1.3	1.1	7.0	1.8	.85	.51	.20	1.3	.12	2.7
26	1.8	2.1	3.0	1.1	5.3	1.7	.70	1.6	.17	.06	.07	.58
27	11	3.1	8.8	1.0	4.1	3.7	.66	.77	.14	.02	.04	.38
28	6.8	1.3	9.4	1.0	4.0	2.8	.60	.25	.14	.01	.03	.33
29	3.4	1.3	8.9	1.0	---	1.4	.76	.33	.13	.00	.30	1.2
30	2.6	1.2	4.5	1.0	---	3.4	1.3	.34	.12	1.4	.08	.76
31	5.1	---	4.0	.98	---	8.6	---	.30	---	4.8	.03	---
TOTAL	140.17	78.5	77.07	50.56	200.86	139.4	43.34	23.61	14.72	14.60	12.99	20.90
MEAN	4.52	2.62	2.49	1.63	7.17	4.50	1.44	.76	.49	.47	.42	.70
MAX	53	18	9.4	3.8	76	27	3.3	1.9	3.2	4.8	4.5	10
MIN	.08	1.2	.98	.98	.90	1.4	.60	.25	.12	.00	.01	.00
CFSM	1.54	.89	.85	.55	2.44	1.53	.49	.26	.17	.16	.14	.24
IN.	1.77	.99	.98	.64	2.54	1.76	.55	.30	.19	.18	.16	.26
AC-FT	278	156	153	100	398	276	86	47	29	29	26	41

CAL YR 1984	TOTAL	1051.72	MEAN	2.87	MAX	60	MIN	.00	CFSM	.98	IN.	13.31	AC-FT	2090
WTR YR 1985	TOTAL	816.72	MEAN	2.24	MAX	76	MIN	.00	CFSM	.76	IN.	10.33	AC-FT	1620

05455100 OLD MANS CREEK NEAR IOWA CITY, IA

LOCATION.--Lat. 41°36'23", long. 91°36'56", in SE1/4 SW1/4 NW1/4 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 miles southwest of Iowa City, 5.9 miles upstream of Dirty Face Creek, and 8.6 miles upstream from mouth.

DRAINAGE AREA.--201 mi².

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 September 1985.

GAGE.--Water-stage recorder. Datum of gage is 639.49 ft. above NGVD. Prior to Nov. 16, 1984, nonrecording gage at same datum.

REMARKS.--Estimated daily discharges: Oct. 1 to Nov. 17, Dec. 6, 17-21, 24-28, Jan. 2 to Feb. 21, 25-27, July 3-14, July 16 to Aug. 18. Records good except those for Oct. 1 to Nov. 17, July 3-14, July 16 to Aug. 18, which are fair and those for Dec. 6, 17-21, 24-28, Jan. 2 to Feb. 21, 25-27, which are poor.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,870 ft³/s Feb. 23, 1985, gage height, 12.22 ft.; minimum discharge 2.6 ft³/s Sept. 20, 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 13,500 ft³, June 15, 1982, gage height, 15.25 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 1	0700	1,890	10.28	Mar. 4	0945	2,150	10.90
Feb. 23	1100	*2,870	*12.22				

Minimum daily discharge, 2.6 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	1510	68	131	48	271	271	61	35	20	19	5.8
2	4.4	508	68	113	47	246	215	55	32	21	7.5	5.1
3	4.0	296	63	100	46	398	188	48	31	20	5.7	4.8
4	3.7	224	59	105	46	1810	169	49	26	18	4.4	4.0
5	3.7	176	95	110	46	1290	158	49	27	16	4.4	3.7
6	4.0	150	110	120	46	419	149	54	27	15	4.0	3.7
7	8.5	138	103	130	46	325	132	50	23	14	4.0	3.6
8	12	128	101	110	46	274	121	46	23	13	4.0	3.6
9	9.0	175	91	90	46	240	116	42	21	11	4.0	4.3
10	4.4	547	83	80	47	222	118	40	18	11	45	3.4
11	8.5	241	68	74	47	205	113	44	22	10	61	3.5
12	16	196	64	66	46	187	108	99	34	9.5	12	3.5
13	12	170	51	62	46	176	102	75	44	11	7.5	3.5
14	7.0	158	57	60	45	169	99	78	30	13	6.6	3.4
15	6.1	139	69	60	45	153	98	93	31	82	5.3	3.2
16	20	120	115	58	47	149	94	67	30	25	4.9	3.4
17	70	115	125	56	52	135	88	65	25	10	4.0	3.5
18	143	113	94	54	70	133	84	60	23	8.5	4.0	3.5
19	765	103	84	53	100	134	82	56	23	8.0	13	3.3
20	270	94	82	49	220	127	77	57	22	7.5	3.2	2.8
21	161	89	100	48	700	114	75	56	21	6.6	4.8	3.7
22	115	89	107	52	1550	112	70	48	31	5.3	3.5	7.4
23	93	87	80	56	2350	114	82	46	44	4.0	5.0	27
24	79	83	62	54	1180	113	71	44	81	4.0	14	42
25	72	82	58	54	720	104	66	43	47	60	9.0	21
26	77	80	90	52	410	102	64	42	32	46	6.9	15
27	161	86	228	51	300	103	60	68	26	8.0	6.4	23
28	326	85	646	50	262	143	60	57	24	4.4	6.0	8.5
29	168	77	492	49	---	129	57	43	23	4.0	5.8	4.8
30	125	73	271	49	---	109	58	40	21	3.4	5.9	21
31	375	---	203	48	---	233	---	38	---	8.0	6.2	---
TOTAL	3130.3	6132	3987	2244	8654	8439	3245	1713	897	497.2	297.0	249.0
MEAN	101	204	129	72.4	309	272	108	55.3	29.9	16.0	9.58	8.30
MAX	765	1510	646	131	2350	1810	271	99	81	82	61	42
MIN	3.7	73	51	48	45	102	57	38	18	3.4	3.2	2.8

WTR YR 1985 TOTAL 39484.5 MEAN 108 MAX 2350 MIN 2.8

05455500 ENGLISH RIVER AT KALONA, IA

LOCATION.--Lat 41°27'59", long 91°42'56", in SE1/4 SE1/4 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 14.5 mi upstream from mouth.

DRAINAGE AREA.--573 mi².

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 (levels by U.S. Army Corps of Engineers). Prior to Dec. 27, 1939, nonrecording gage 30 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 3-14, Dec. 21 to Feb. 24 and Mar. 28 to Apr. 3. Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers gage-height telemeter and data collection platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--46 years, 371 ft³/s, 8.79 in/yr, 268,800 acre-ft/yr; median of yearly mean discharges, 330 ft³/s, 7.8 in/yr, 239,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s Sept. 21, 1965, gage height, 21.45 ft; minimum daily, 0.66 ft³/s Feb. 5-7, 1977.

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 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 23	1415	*6,100	*a16.23	Mar. 4	2115	6,020	15.58

(a) Ice jam
Minimum daily discharge, 6.2 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	2560	150	250	125	652	410	126	66	43	38	15
2	16	1370	142	230	120	564	480	127	58	40	33	14
3	16	580	120	215	120	3560	460	113	59	36	27	13
4	15	420	100	205	120	5760	433	103	57	33	23	12
5	14	323	90	200	125	2940	404	97	52	32	21	12
6	14	259	84	210	120	970	374	100	51	30	22	12
7	17	229	78	220	120	746	327	105	49	31	19	9.6
8	20	214	74	210	120	625	289	94	48	28	16	8.8
9	21	319	73	200	115	554	267	84	44	27	17	8.4
10	23	2080	77	190	115	531	262	77	38	26	100	7.6
11	37	712	81	190	115	526	262	78	38	26	216	7.5
12	36	412	86	190	115	474	250	203	54	29	81	7.4
13	52	332	90	200	120	452	237	173	86	30	48	7.5
14	42	298	140	195	125	423	227	193	71	31	35	7.2
15	37	274	183	180	130	388	221	165	59	148	32	6.9
16	51	235	320	165	145	365	217	155	59	86	26	6.9
17	141	209	669	160	155	337	201	145	61	35	24	6.3
18	226	208	423	160	175	321	192	127	53	26	20	6.9
19	2010	203	322	155	275	309	187	111	46	22	18	6.9
20	618	183	301	135	740	288	176	102	42	20	16	6.2
21	248	159	270	130	1750	274	170	102	41	20	15	8.4
22	163	164	355	125	4400	268	167	97	48	19	14	13
23	123	175	295	130	5900	270	183	85	65	17	17	64
24	95	172	230	135	5400	264	199	81	118	15	34	67
25	86	161	306	140	2340	246	166	80	106	170	39	91
26	129	157	355	140	1100	243	146	79	65	342	32	86
27	158	168	450	135	752	266	142	77	49	132	22	72
28	558	194	1100	130	642	301	134	122	47	65	17	54
29	345	177	870	130	---	260	128	93	72	38	16	36
30	219	163	530	130	---	295	121	77	54	30	16	40
31	181	---	305	125	---	370	---	74	---	31	16	---
TOTAL	5727	13110	8669	5310	25579	23842	7432	3445	1756	1658	1070	713.5
MEAN	185	437	280	171	914	769	248	111	58.5	53.5	34.5	23.8
MAX	2010	2560	1100	250	5900	5760	480	203	118	342	216	91
MIN	14	157	73	125	115	243	121	74	38	15	14	6.2
CFSM	.32	.76	.49	.30	1.60	1.34	.43	.19	.10	.09	.06	.04
IN.	.37	.85	.56	.34	1.66	1.55	.48	.22	.11	.11	.07	.05
AC-FT	11360	26000	17190	10530	50740	47290	14740	6830	3480	3290	2120	1420

CAL YR 1984	TOTAL	180792	MEAN	494	MAX	3710	MIN	14	CFSM	.86	IN.	11.74	AC-FT	358600
WTR YR 1985	TOTAL	98311.5	MEAN	269	MAX	5900	MIN	6.2	CFSM	.47	IN.	6.38	AC-FT	195000

05455700 IOWA RIVER NEAR LONE TREE, IA

LOCATION.--Lat 41°25'15", long 91°28'25", in NW1/4 NE1/4 sec.6, T.76 N., R.5 W., Louisa County, Hydrologic Unit 07080209, on left bank 2,000 ft ,downstream from new tri-county bridge on county highway W66, 5 mi southwest of Lone Tree, 6.2 mi downstream from English River, and at mile 47.2.

DRAINAGE AREA.--4,293 mi².

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

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

REMARKS.--Estimated daily discharges: Dec. 5-10, Dec. 22 - Feb.24, April 23 to May 6, June 1-28, July 4-22, 24, Aug. 2-9, Aug. 24-26 and Sept. 17, 19, 21, 22, 28, 29, 30. Records good except those for periods of estimated record, which are poor. Flow regulated by Coralville Lake (station 05453510) 36.1 mi upstream since Sept. 17, 1958. U.S. Army Corps of Engineers gage-height telemeter and data collection platform at station.

COOPERATION.--Three discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--29 years, 2,858 ft³/s, 9.04 in/yr, 2,071,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,700 ft³/s May 19, 1974, gage height, 18.97 ft; maximum gage height, 20.27 ft Sept. 22, 1965; minimum daily discharge, 69 ft³/s; Aug. 4, 1977.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,800 ft³/s Mar. 5, gage height, 15.02 ft; maximum gage height, 16.16 ft Feb.23, backwater from ice; minimum daily discharge, 183 ft³/s Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	498	6140	1370	4000	940	9200	3060	1850	760	711	334	242
2	498	6080	1250	3400	960	10000	3380	1830	740	702	310	238
3	503	3680	1110	1200	920	10300	3580	1810	720	693	300	238
4	503	2970	1010	940	780	11700	3540	1830	720	650	295	235
5	503	2790	950	860	700	14300	3440	1850	710	550	285	230
6	514	2610	880	960	680	14100	3520	1870	700	530	260	230
7	514	2270	820	1200	670	10900	3600	1850	700	520	250	229
8	520	2190	750	1450	660	9840	3390	1620	680	520	250	222
9	520	2180	700	1800	660	10100	3350	1410	640	510	250	218
10	530	4160	770	2000	660	10400	3310	1140	620	430	354	214
11	563	4000	1640	1900	650	10600	3050	1090	620	410	412	210
12	648	3590	1860	1750	650	10600	2890	1090	660	410	416	206
13	689	3320	1850	1750	660	10500	2870	1090	700	440	395	200
14	689	2130	1890	1550	730	9760	2850	1120	640	530	363	193
15	725	1930	1910	1300	880	8460	2640	1130	710	640	346	189
16	772	1850	1990	1050	1200	7630	2490	1140	820	680	329	183
17	1200	1630	2380	1250	1300	6580	2440	1110	850	580	305	353
18	1430	1400	2310	1300	1350	5710	2250	1200	840	470	287	749
19	5190	1320	2070	1150	1300	5110	2110	1240	820	420	280	631
20	3900	1270	1950	940	1800	4660	2110	1240	810	410	275	525
21	2930	1270	1800	1250	2200	4250	2100	1210	800	400	270	498
22	2670	1430	1400	1200	4800	3760	2030	1080	860	390	261	431
23	2440	1450	1100	1150	10000	3350	2010	1000	900	360	259	519
24	1570	1430	1300	1150	14000	3110	1990	964	950	320	280	718
25	1310	1410	1700	1100	12300	2880	1970	1040	1000	364	290	714
26	1310	1400	2000	1050	5840	2710	1950	1040	890	395	280	701
27	1390	1230	1300	1000	5800	2570	1940	974	800	476	254	662
28	2380	1170	850	960	7840	2530	1910	1050	700	400	250	650
29	2440	1390	1400	940	---	2640	1900	1050	714	337	250	700
30	2040	1410	3400	930	---	2720	1880	979	716	312	245	800
31	1700	---	4300	920	---	2740	---	910	---	314	242	---
TOTAL	43089	71100	50010	43400	80930	223710	79550	39807	22790	14874	9177	12128
MEAN	1390	2370	1613	1400	2890	7216	2652	1284	760	480	296	404
MAX	5190	6140	4300	4000	14000	14300	3600	1870	1000	711	416	800
MIN	498	1170	700	860	650	2530	1880	910	620	312	242	183
AC-FT	85470	141000	99190	86080	160500	443700	157800	78960	45200	29500	18200	24060

CAL YR 1984 TOTAL 1560887 MEAN 4265 MAX 13100 MIN 463 AC-FT 3096000
WTR YR 1985 TOTAL 690565 MEAN 1892 MAX 14300 MIN 183 AC-FT 1370000

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 252.9 upstream from mouth of Iowa River.

DRAINAGE AREA.--1,054 mi².

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

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

REMARKS.--Estimated daily discharge: Dec. 16 - 27, Jan. 1 to March 10. Records good, except for periods of estimated record, which are poor. 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. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years, 732 ft³/s, 9.43 in/yr, 530,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s Apr. 7, 1965, gage height, 19.14 ft; maximum gage height, 21.64 ft Mar. 2, 1965, backwater from ice; minimum daily discharge, 60 ft³/s Nov. 23, 1977, Jan. 7, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1961, reached a stage of 21.6 ft, from floodmarks, discharge, 29,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 3,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 24	----	ice jam	*6.24	Mar. 11	1530	*2,860	5.88

Minimum discharge, 108 ft³/s Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	386	321	600	215	540	625	692	437	277	155	167
2	185	425	319	500	210	600	525	636	357	256	155	157
3	185	541	215	440	200	660	613	583	312	238	147	162
4	185	492	158	380	200	490	1220	534	291	225	143	192
5	184	426	210	330	190	370	1840	498	284	215	143	583
6	192	385	366	310	187	310	1950	480	274	206	138	1010
7	212	352	244	290	187	470	1550	450	264	197	132	551
8	212	330	280	360	187	680	1190	428	259	193	121	364
9	232	334	302	285	187	1000	955	407	247	188	120	344
10	221	421	295	210	187	1740	826	387	235	180	129	478
11	228	611	307	245	187	2410	754	380	254	172	119	479
12	226	838	312	280	187	2340	708	380	305	176	115	444
13	217	713	290	320	187	2400	671	374	334	185	123	347
14	213	617	290	370	187	2020	648	402	403	181	138	290
15	237	562	290	420	187	1530	640	401	396	173	145	255
16	285	509	400	510	187	1160	629	412	371	167	142	233
17	387	460	500	340	187	966	606	417	374	159	131	221
18	627	433	800	220	187	830	578	408	344	154	123	214
19	646	415	690	330	187	704	554	398	321	160	119	206
20	514	373	630	480	187	632	528	389	301	156	116	221
21	467	345	550	430	350	581	519	370	280	153	113	225
22	415	367	470	385	600	537	557	359	269	149	127	245
23	360	356	420	350	960	517	691	342	264	139	131	290
24	322	349	390	315	1510	514	1000	333	246	141	142	334
25	309	339	370	285	1490	513	1260	331	226	161	151	472
26	305	336	380	275	1000	500	1280	326	285	202	139	493
27	310	342	410	260	700	493	1150	306	294	198	127	577
28	307	356	675	250	480	506	981	294	341	172	129	543
29	309	349	725	240	----	546	849	282	354	153	202	555
30	329	336	991	230	----	610	757	288	308	144	236	799
31	338	----	810	220	----	732	----	454	----	156	196	----
TOTAL	9348	13098	13410	10460	10910	27901	26654	12741	9230	5626	4347	11451
MEAN	302	437	433	337	390	900	888	411	308	181	140	382
MAX	646	838	991	600	1510	2410	1950	692	437	277	236	1010
MIN	184	330	158	210	187	310	519	282	226	139	113	157
CFSM	.29	.41	.41	.32	.37	.85	.84	.39	.29	.17	.13	.36
IN.	.33	.46	.47	.37	.39	.98	.94	.45	.33	.20	.15	.40
AC-FT	18540	25980	26600	20750	21640	55340	52870	25270	18310	11160	8620	22710

CAL YR 1984	TOTAL	380844	MEAN	1041	MAX	7420	MIN	158	CFSM	.99	IN.	13.44	AC-FT	755400
WTR YR 1985	TOTAL	155176	MEAN	425	MAX	2410	MIN	113	CFSM	.40	IN.	5.48	AC-FT	307800

05458000 LITTLE CEDAR RIVER NEAR IONIA, IA

LOCATION.--Lat 43°02'05", long 92°30'05", in SW1/4 NE1/4 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, 6.4 mi upstream from mouth, and 7.6 mi downstream from Beaver Creek.

DRAINAGE AREA.--306 mi².

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.

REMARKS.--Estimated daily discharge: Dec. 28 to Jan. 5. Records are good except for periods of estimated record, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 178 ft³/s, 7.90 in/yr, 128,900 acre-ft/yr; median of yearly mean discharges, 150 ft³/s, 6.7 in/yr, 109,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s Mar. 27, 1961, gage height, 15.58 ft; minimum daily, 3.0 ft³/s Feb. 4-9, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1954, reached a stage of 11.37 ft, discharge, 4,600 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
March 8	2230	*1,470	*7.24	No other peak greater than base discharge.			

Minimum discharge, 15 ft³/s Aug.20,21,22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	93	74	135	39	324	140	185	128	77	24	33
2	37	111	69	100	41	328	156	169	93	68	23	28
3	37	113	28	88	41	295	288	153	79	59	21	25
4	37	102	47	80	41	230	569	141	72	52	20	29
5	37	90	52	76	41	153	884	133	67	48	21	103
6	37	79	47	75	40	139	614	126	62	43	20	368
7	45	73	45	74	40	283	434	117	59	39	20	191
8	48	70	48	72	41	737	334	111	56	37	20	116
9	48	69	53	67	39	1220	284	104	52	35	19	86
10	47	88	58	63	36	910	254	100	49	32	19	134
11	51	137	62	60	35	761	234	98	57	31	19	126
12	54	169	68	59	34	593	217	99	65	34	18	96
13	51	148	65	58	34	445	206	94	64	34	19	76
14	48	162	56	56	34	377	195	96	63	32	18	65
15	51	180	57	54	36	296	187	96	66	29	19	55
16	62	125	98	52	37	245	177	96	67	27	20	49
17	82	108	133	51	36	215	164	95	70	27	21	46
18	93	110	125	50	36	190	154	91	65	26	18	43
19	94	94	144	50	35	169	146	87	59	26	17	40
20	81	65	141	49	38	154	136	85	54	25	16	41
21	72	66	143	46	332	142	132	77	52	25	16	42
22	66	87	123	44	636	132	133	73	50	23	18	44
23	60	93	107	42	742	131	157	71	47	22	19	65
24	57	91	91	41	787	160	188	68	42	22	19	149
25	55	91	83	42	721	154	224	66	40	26	18	199
26	58	86	73	42	530	141	249	64	51	25	18	182
27	60	84	74	42	320	145	280	61	272	26	18	176
28	63	83	200	42	286	172	261	60	152	23	17	151
29	62	80	190	40	---	188	227	58	110	23	37	153
30	61	78	170	39	---	174	202	57	91	22	46	452
31	60	---	145	39	---	167	---	229	---	24	41	---
TOTAL	1751	3025	2869	1828	5108	9770	7826	3160	2254	1042	659	3363
MEAN	56.5	101	92.5	59.0	182	315	261	102	75.1	33.6	21.3	112
MAX	94	180	200	135	787	1220	884	229	272	77	46	452
MIN	37	65	28	39	34	131	132	57	40	22	16	25
CFSM	.18	.33	.30	.19	.59	1.03	.85	.33	.25	.11	.07	.37
IN.	.21	.37	.35	.22	.62	1.19	.95	.38	.27	.13	.08	.41
AC-FT	3470	6000	5690	3630	10130	19380	15520	6270	4470	2070	1310	6670

CAL YR 1984	TOTAL	112425	MEAN	307	MAX	4920	MIN	28	CFSM	1.00	IN.	13.67	AC-FT	223000
WTR YR 1985	TOTAL	42655	MEAN	117	MAX	1220	MIN	16	CFSM	.38	IN.	5.19	AC-FT	84610

05458500 CEDAR RIVER AT JANESVILLE, IA

LOCATION.--Lat 42°38'54", long 92°27'54", in NE1/4 SW1/4 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 207.7 upstream from mouth of Iowa River.

DRAINAGE AREA.--1,661 mi².

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, 1905-6.

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).

GAGE.--Water-stage recorder. Datum of gage is 868.26 ft above NGVD. 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.--Estimated daily discharges: Nov. 29 to March 9. Records good except for estimated daily discharges, which are poor. Diurnal fluctuation during low water caused by powerplant at Waverly, 10 mi upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--65 years (water years 1905-06, 1915-27, 1933-42, 1946-85), 860 ft³/s, 7.03 in/yr, 623,100 acre-ft/yr; median of yearly mean discharges, 750 ft³/s, 6.1 in/yr, 543,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,000 ft³/s Mar. 28, 1961, gage height, 16.33 ft; minimum daily, 28 ft³/s Oct. 21, 1922.

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 ft³/s. Flood of Mar. 16, 1929, reached a stage of about 16 ft, from information by City of Waterloo, discharge not determined.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 24	2200	ice jam	*7.20	Mar. 3	0015	*4,640	ice jam

a ice jam
Minimum discharge, 212 ft³/s Aug. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	389	706	550	1200	280	2900	1120	1240	639	520	254	346
2	380	637	520	1400	280	3900	1050	1120	666	451	248	307
3	530	675	400	1600	280	4500	1080	1020	606	429	244	286
4	379	795	355	1590	280	3500	1270	938	539	385	240	294
5	371	831	500	780	285	1600	1850	905	484	364	242	407
6	259	727	700	600	285	1200	2710	864	456	329	240	533
7	388	644	620	570	285	1000	2840	801	430	331	236	1170
8	524	613	540	560	290	1900	2500	751	403	307	230	966
9	427	572	480	530	290	2300	1990	711	403	301	226	699
10	421	612	470	500	290	3330	1650	676	400	319	252	585
11	472	601	460	480	290	3330	1450	658	408	282	235	625
12	380	842	485	470	290	3380	1310	659	437	283	236	676
13	470	1130	600	460	290	3380	1220	641	473	271	240	649
14	453	1050	350	450	290	3240	1150	651	486	284	232	588
15	447	909	560	440	290	2950	1100	652	550	290	227	474
16	560	833	490	430	295	2410	1050	646	587	259	234	433
17	526	822	540	420	300	1920	1010	643	551	261	247	404
18	565	767	550	400	300	1600	982	628	546	256	251	374
19	737	719	960	380	300	1420	1030	617	523	276	235	355
20	703	665	1250	370	360	1270	813	610	487	256	222	327
21	782	618	940	370	910	1110	870	589	451	255	218	329
22	821	596	1000	360	2150	1010	1020	589	441	247	229	339
23	670	635	1070	350	2900	971	953	566	393	236	237	423
24	617	635	1100	335	3900	953	1060	385	401	235	245	435
25	469	608	1350	320	3600	936	1170	498	382	295	238	482
26	540	597	1600	310	3400	909	1650	495	367	249	249	640
27	541	594	580	290	3050	923	1800	485	447	251	243	676
28	536	597	800	290	2700	923	1730	502	640	271	239	702
29	599	580	1110	285	---	932	1510	491	568	269	346	775
30	525	560	1090	280	---	954	1370	461	553	265	320	894
31	538	---	1120	280	---	1030	---	431	---	264	332	---
TOTAL	16019	21170	23140	17100	28460	61681	42308	20923	14717	9291	7667	16193
MEAN	517	706	746	552	1016	1990	1410	675	491	300	247	540
MAX	821	1130	1600	1600	3900	4500	2840	1240	666	520	346	1170
MIN	259	560	350	280	280	909	813	385	367	235	218	286
CFSM	.31	.43	.45	.33	.61	1.20	.85	.41	.30	.18	.15	.33
IN.	.36	.47	.52	.38	.64	1.38	.95	.47	.33	.21	.17	.36
AC-FT	31770	41990	45900	33920	56450	122300	83920	41500	29190	18430	15210	32120

CAL YR 1984	TOTAL	631943	MEAN	1727	MAX	11300	MIN	259	CFSM	1.04	IN.	14.15	AC-FT	1253000
WTR YR 1985	TOTAL	278669	MEAN	763	MAX	4500	MIN	218	CFSM	.46	IN.	6.24	AC-FT	552700

05458900 WEST FORK CEDAR RIVER AT FINCHFORD, IA

LOCATION.--Lat 42°37'50", long 92°32'24", 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 upstream from Shell Rock River, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--846 mi².

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. Prior to June 10, 1955, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharge: Nov. 19 - 21, Nov. 28 to March 10, July 22 - 24. Records good, except for estimated daily discharges, which are poor. An authorized diversion is made into Big Marsh, 16 mi upstream from gage, of 2,100 acre-ft each year between September 1 and November 15. Net effect on daily flows at gage is unknown. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--40 years, 513 ft³/s, 8.23 in/yr, 371,700 acre-ft/yr; median of yearly mean discharges, 450 ft³/s, 7.2 in/yr, 326,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s June 27, 1951, gage height, 17.28 ft, from floodmarks; minimum daily, 5.9 ft³/s Feb. 26, 27, 1959.

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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	----	ice jam	*11.15	March 5	0100	*1,820	ice jam

Minimum daily discharge, 62 ft³/s Feb. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	274	240	490	82	820	524	644	265	342	116	356
2	83	405	197	455	80	630	506	592	334	305	115	277
3	82	404	132	365	78	590	623	543	314	272	109	229
4	80	360	125	340	76	1200	857	502	276	241	105	166
5	80	322	180	315	74	1650	1040	481	251	209	104	149
6	83	292	395	290	72	1600	1010	477	232	191	102	329
7	87	270	450	270	70	1000	933	476	219	171	102	743
8	91	254	390	250	69	1000	779	451	202	157	102	961
9	95	251	335	230	68	1200	676	428	186	152	101	810
10	97	262	290	220	67	1500	615	405	178	152	105	555
11	105	307	410	205	67	1400	585	392	189	151	117	448
12	108	352	330	190	68	1120	561	387	221	150	131	371
13	109	347	260	180	67	999	537	378	305	146	125	313
14	107	335	260	175	66	862	518	375	412	144	118	270
15	113	337	265	170	66	750	500	360	430	142	113	235
16	135	348	270	165	64	663	482	361	436	138	106	208
17	174	307	290	160	62	599	462	354	433	134	101	187
18	218	287	310	150	73	547	442	341	403	129	102	178
19	237	270	340	145	84	506	428	329	371	133	100	169
20	240	237	350	140	100	479	411	321	335	134	99	161
21	225	220	360	130	170	461	394	328	311	134	98	159
22	205	219	360	125	470	447	394	318	287	136	97	161
23	186	218	355	118	650	443	441	305	262	129	97	178
24	173	224	350	110	1200	464	496	297	246	136	97	211
25	166	214	335	105	1500	497	523	289	226	139	97	287
26	163	212	320	102	1200	499	535	281	210	128	97	378
27	165	245	300	98	1000	493	627	269	247	127	95	413
28	174	245	410	95	800	517	790	259	524	127	95	450
29	172	230	540	92	---	551	794	249	483	125	116	466
30	166	210	610	88	---	558	708	237	394	119	225	543
31	169	---	640	86	---	554	---	231	---	113	421	---
TOTAL	4371	8458	10357	6054	8443	24599	18191	11660	9182	5006	3708	10361
MEAN	141	282	334	195	302	794	606	376	306	161	120	345
MAX	240	405	640	490	1500	1650	1040	644	524	342	421	961
MIN	80	210	125	86	62	443	394	231	178	113	95	149
CFSM	.17	.33	.39	.23	.36	.94	.72	.44	.36	.19	.14	.41
IN.	.19	.37	.46	.27	.37	1.08	.80	.51	.40	.22	.16	.46
AC-FT	8670	16780	20540	12010	16750	48790	36080	23130	18210	9930	7350	20550

CAL YR 1984	TOTAL	422246	MEAN	1154	MAX	7960	MIN	66	CFSM	1.36	IN.	18.57	AC-FT	837500
WTR YR 1985	TOTAL	120390	MEAN	330	MAX	1650	MIN	62	CFSM	.39	IN.	5.29	AC-FT	238800

05459000 SHELL ROCK RIVER NEAR NORTHWOOD, IA

LOCATION.--Lat 43°24'51", long 93°13'14", in NW1/4 NW1/4 sec.9, T.99 N., R.20 W., Worth County, Hydrologic Unit 07080202, on right bank 50 ft downstream from bridge on county highway A27, 1.3 mi downstream from drainage ditch 2, 2.0 mi south of Northwood, 3.7 mi upstream from Elk Creek, and 84.5 mi upstream from mouth.

DRAINAGE AREA.--300 mi².

PERIOD OF RECORD.--October 1945 to current year. Prior to April 1948 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1948 (M). WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,176.48 ft above NGVD. Prior to May 17, 1956, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharge: Dec. 1-3, Dec. 13 to March 10. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--40 years, 159 ft³/s, 7.20 in/yr, 115,200 acre-ft/yr; median of yearly mean discharges, 140 ft³/s, 6.3 in/yr, 101,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft³/s Apr. 8, 1965, gage height, 12.07 ft, backwater from ice; no flow Jan. 14-19, 26-30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 11	1230	*968	*7.16	No other peak greater than base discharge.			

Minimum discharge, 13 ft³/s July 23, 24, Aug. 9, Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	152	94	140	35	150	268	189	73	49	20	40
2	14	167	93	135	34	170	273	178	63	45	18	38
3	16	136	150	128	33	185	363	168	58	44	16	37
4	15	127	211	120	32	205	435	158	56	39	16	44
5	17	133	183	112	31	230	557	144	55	36	17	129
6	20	129	173	105	31	260	510	139	51	34	15	121
7	25	121	187	100	31	295	456	134	48	30	15	92
8	26	113	191	95	31	360	426	125	49	25	15	77
9	31	125	185	90	31	485	397	116	45	24	14	92
10	30	195	177	85	31	660	361	110	47	24	15	115
11	30	215	170	80	31	625	336	111	54	22	15	101
12	31	190	174	76	31	500	313	107	84	24	17	88
13	31	191	140	72	31	476	301	107	132	25	22	76
14	31	188	151	69	31	480	295	113	112	23	21	66
15	54	186	170	65	31	452	281	122	112	22	19	61
16	80	189	193	62	31	445	267	130	114	22	18	55
17	167	182	250	59	31	418	256	139	106	21	19	51
18	150	166	240	56	32	386	234	125	108	21	19	48
19	131	159	228	53	34	361	226	113	100	21	17	46
20	141	157	215	50	38	335	210	105	88	19	16	58
21	131	160	205	49	45	316	223	103	78	18	17	66
22	123	153	195	48	54	298	226	97	77	16	24	58
23	119	134	185	47	64	287	255	97	70	15	32	71
24	111	130	180	46	74	288	268	99	61	20	28	127
25	107	127	173	45	89	277	258	94	56	30	25	127
26	108	123	170	44	105	264	250	86	53	22	23	136
27	105	124	165	42	115	257	239	82	65	19	21	137
28	124	127	160	41	130	266	223	77	64	17	28	122
29	120	124	158	39	---	271	201	70	59	16	76	170
30	104	120	155	38	---	268	194	69	53	17	56	315
31	111	---	150	37	---	259	---	72	---	20	47	---
TOTAL	2327	4543	5471	2228	1317	10529	9102	3579	2191	780	721	2764
MEAN	75.1	151	176	71.9	47.0	340	303	115	73.0	25.2	23.3	92.1
MAX	167	215	250	140	130	660	557	189	132	49	76	315
MIN	14	113	93	37	31	150	194	69	45	15	14	37
CFSM	.25	.50	.59	.24	.16	1.13	1.01	.38	.24	.08	.08	.31
IN.	.29	.56	.68	.28	.16	1.31	1.13	.44	.27	.10	.09	.34
AC-FT	4620	9010	10850	4420	2610	20880	18050	7100	4350	1550	1430	5480

CAL YR 1984	TOTAL	126672	MEAN	346	MAX	1760	MIN	14	CFSM	1.15	IN.	15.71	AC-FT	251300
WTR YR 1985	TOTAL	45552	MEAN	125	MAX	660	MIN	14	CFSM	.42	IN.	5.65	AC-FT	90350

05459500 WINNEBAGO RIVER AT MASON CITY, IA

LOCATION.--Lat 43°09'54", long 93°11'33", in NE1/4 NW1/4 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, and 1.0 mi upstream from Willow Creek, and at mile 275.8 upstream from mouth of Iowa River.

DRAINAGE AREA.--526 mi².

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. 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.--Estimated daily discharge: Dec. 28 - March 12. Records good, except for periods of estimated record, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 264 ft³/s, 6.82 in/yr, 191,300 acre-ft/yr; median of yearly mean discharges, 220 ft³/s, 5.7 in/yr, 159,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s Mar. 30, 1933, gage height, 15.7 ft, present datum; minimum daily, 2.5 ft³/s Dec. 29-31, 1933, Aug. 5, 1934.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 11	2030	*1,700	a *6.48				

a ice jam
Minimum discharge, 20 ft³/s Aug. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	146	126	185	33	170	239	273	359	190	40	86
2	42	157	117	160	33	150	245	247	239	166	37	68
3	42	157	95	140	33	140	402	228	170	147	34	58
4	42	162	91	120	32	125	578	213	152	128	32	55
5	42	148	99	105	32	115	829	202	131	113	32	663
6	45	135	90	98	33	125	747	192	117	101	29	919
7	40	129	91	90	33	135	670	180	106	94	28	704
8	57	129	96	83	32	250	580	171	101	87	25	473
9	82	134	100	77	32	460	500	167	88	84	23	329
10	81	180	105	72	33	900	457	156	86	76	21	282
11	71	222	113	68	32	1050	426	157	122	69	21	231
12	66	236	122	64	32	920	397	165	226	67	31	188
13	60	233	113	61	32	665	362	153	346	64	29	159
14	63	216	101	57	32	591	328	155	354	61	32	139
15	90	200	99	55	32	535	308	158	357	55	29	123
16	137	166	195	53	32	517	294	160	340	51	27	112
17	254	153	308	50	32	447	273	156	308	47	28	104
18	223	161	297	48	31	417	255	149	267	44	27	98
19	206	157	281	46	31	431	231	146	234	46	26	89
20	164	115	276	44	48	383	213	136	211	44	23	108
21	140	114	257	43	94	341	209	125	192	43	23	122
22	121	128	225	41	200	306	249	120	173	41	26	130
23	113	143	191	40	180	288	322	115	155	37	53	166
24	103	140	178	39	155	295	353	115	137	42	70	288
25	104	140	150	38	135	277	350	114	124	59	60	323
26	108	137	151	37	160	258	380	108	144	53	48	344
27	112	140	156	36	135	258	387	102	300	43	39	336
28	108	135	280	35	150	269	361	98	311	39	37	299
29	117	129	370	34	---	279	328	93	261	35	61	361
30	109	132	285	34	---	277	298	91	219	36	108	757
31	114	---	210	33	---	271	---	299	---	40	111	---
TOTAL	3100	4674	5328	2086	1869	11645	11571	4944	6330	2202	1210	8114
MEAN	100	156	172	67.3	66.8	376	386	159	211	71.0	39.0	270
MAX	254	236	370	185	200	1050	829	299	359	190	111	919
MIN	40	114	55	33	31	115	209	91	86	35	21	55
CFSM	.19	.30	.33	.13	.13	.71	.73	.30	.40	.13	.07	.51
IN.	.22	.33	.38	.15	.13	.82	.82	.35	.45	.16	.09	.57
AC-FT	6150	9270	10570	4140	3710	23100	22950	9810	12560	4370	2400	16090

CAL YR 1984	TOTAL	215624	MEAN	589	MAX	4610	MIN	40	CFSM	1.12	IN.	15.25	AC-FT	427700
WTR YR 1985	TOTAL	63073	MEAN	173	MAX	1050	MIN	21	CFSM	.33	IN.	4.46	AC-FT	125100

05460000 CLEAR LAKE AT CLEAR LAKE, IA

LOCATION.--Lat 43°08'01", long 93°22'57", in SE1/4 NE1/4 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 mi².

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, 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.--Lake is formed by concrete dam on Clear Creek with ungated overflow spillway 50 ft long at elevation 1,226.84 ft above NGVD. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.94 ft July 3, 1951; minimum observed, 1.16 ft Dec. 20, 22-24, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.88 ft Apr. 20; minimum, 3.68 ft Aug. 21.

GAGE HEIGHT (FEET ABOVE DATUM) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.95	4.13	4.09	4.29	---	---	---	4.75	4.51	4.35	3.97	3.82
2	3.94	---	4.12	4.29	---	---	---	4.75	4.47	4.35	3.96	3.83
3	3.93	---	4.13	4.29	---	---	---	4.76	4.45	4.33	3.94	3.84
4	---	---	---	4.29	4.34	---	4.78	4.76	4.44	4.32	3.93	3.83
5	3.88	---	---	4.29	4.35	---	---	4.70	4.42	4.26	3.93	4.04
6	---	4.07	---	4.30	4.35	---	---	4.68	4.42	4.24	3.93	4.10
7	---	---	---	4.30	---	---	---	4.66	4.41	4.23	3.91	4.12
8	---	---	---	4.29	---	---	---	4.66	4.43	4.20	3.90	4.10
9	---	---	---	4.29	---	---	---	4.68	4.39	4.19	3.87	4.10
10	---	---	---	4.30	---	---	---	4.66	4.34	4.18	3.85	4.06
11	---	---	---	4.31	---	4.59	---	4.63	4.37	4.15	3.81	4.04
12	3.99	---	---	4.31	---	---	---	4.67	4.40	4.13	3.82	4.03
13	---	4.13	---	4.32	---	---	---	4.59	4.40	4.13	3.83	4.00
14	---	4.14	---	4.31	---	---	---	4.59	4.42	4.11	3.81	4.00
15	---	4.20	---	4.31	---	---	4.73	4.63	4.46	4.10	3.79	3.98
16	---	4.13	---	4.31	---	---	---	4.60	4.45	4.07	3.77	3.98
17	---	4.12	4.18	4.32	---	---	---	4.57	4.48	4.06	3.79	3.98
18	---	4.10	4.18	4.34	---	4.65	4.73	4.58	4.41	4.05	3.77	3.97
19	---	4.09	4.18	4.33	---	4.65	4.73	4.60	4.39	4.10	3.73	3.99
20	---	4.09	4.17	4.33	---	4.65	4.70	4.60	4.38	4.08	3.73	4.03
21	---	4.09	4.22	4.33	---	4.65	4.68	4.57	4.37	4.08	3.71	4.00
22	---	4.09	4.23	4.32	---	---	4.69	4.56	4.38	4.05	3.74	4.01
23	---	4.08	4.23	4.32	---	4.69	4.74	4.56	4.33	4.02	3.78	4.09
24	---	4.08	4.23	4.32	---	---	4.74	4.54	4.28	4.04	3.78	4.10
25	---	4.07	4.23	4.32	4.42	4.69	4.71	4.55	4.28	4.07	3.74	4.08
26	---	4.10	4.24	4.31	---	---	4.75	4.53	4.30	4.05	3.74	4.10
27	---	4.13	4.25	---	---	---	4.75	4.49	4.40	4.05	3.74	4.08
28	---	4.13	4.26	---	---	---	4.74	4.47	4.38	4.03	3.73	4.08
29	---	4.10	4.27	---	---	---	4.78	4.46	4.37	4.00	3.85	4.13
30	---	4.11	4.27	---	---	---	4.77	4.48	4.36	3.97	3.84	4.18
31	---	---	4.28	4.35	---	---	---	4.58	---	3.97	3.83	---
MEAN	---	---	---	---	---	---	---	4.61	4.40	4.13	3.82	4.02
MAX	---	---	---	---	---	---	---	4.76	4.51	4.35	3.97	4.18
MIN	---	---	---	---	---	---	---	4.46	4.28	3.97	3.71	3.82

05462000 SHELL ROCK RIVER AT SHELL ROCK, IA

LOCATAION.--Lat 42°39'10", long 92°35'45", in NE1/4 NW1/4 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 10.4 mi upstream from mouth.

DRAINAGE AREA.--1,746 mi².

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.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation at low stages caused by power plant upstream at Greene. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--32 years, 995 ft³/s, 7.74 in/yr, 720,900 acre-ft/yr; median of yearly mean discharges, 830 ft³/s, 6.5 in/yr, 601,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,500 ft³/s Mar. 28, 1961, gage height, 16.26 ft; minimum daily, 38 ft³/s Feb. 9, 1977.

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 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	0100	*4,280	*9.71	No other peak greater than base discharge.			

Minimum discharge, 185 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	597	499	648	278	865	921	1050	888	661	239	308
2	299	604	500	552	271	902	862	957	875	579	239	280
3	298	630	371	535	264	888	1060	861	662	524	234	254
4	290	621	302	584	262	1610	1590	795	543	484	227	249
5	289	585	313	617	258	866	2320	755	478	454	224	354
6	295	554	300	598	257	761	2700	716	443	422	218	1420
7	316	535	399	578	258	2060	2350	664	413	388	218	1820
8	345	525	447	539	252	2330	2030	625	395	349	212	1350
9	338	520	441	498	252	2890	1780	591	375	334	213	967
10	354	577	451	475	251	2730	1610	562	358	320	240	731
11	386	748	458	445	251	2810	1470	540	371	310	213	654
12	381	809	456	390	251	2580	1350	547	402	300	193	574
13	357	781	429	407	251	2240	1240	545	612	293	199	492
14	337	761	383	418	249	1940	1160	545	910	297	217	442
15	349	797	432	382	242	1750	1100	546	983	285	217	403
16	416	722	494	378	242	1640	1040	557	1010	274	210	369
17	523	628	615	386	250	1510	966	561	952	266	213	344
18	674	655	718	389	260	1370	916	561	870	260	207	325
19	737	601	787	324	270	1260	856	561	775	285	198	306
20	676	568	787	283	293	1150	804	545	698	267	191	294
21	612	515	836	322	1230	1070	754	523	630	266	187	309
22	577	498	798	342	3170	1020	750	490	586	258	198	342
23	531	512	639	334	2020	999	857	480	545	247	202	408
24	501	547	463	330	2300	1000	1060	467	502	242	208	431
25	489	536	412	324	1840	998	1150	461	470	256	244	620
26	490	527	474	313	1330	948	1220	445	449	264	237	753
27	491	523	576	311	968	922	1450	426	810	273	220	804
28	492	521	964	307	830	911	1480	409	882	264	206	822
29	496	518	1250	295	---	975	1310	395	913	246	273	804
30	496	507	1310	296	---	959	1170	387	766	244	240	1060
31	488	---	948	291	---	991	---	466	---	243	286	---
TOTAL	13625	18022	18252	12891	18850	44945	39326	18033	19566	10155	6823	18289
MEAN	440	601	589	416	673	1450	1311	582	652	328	220	610
MAX	737	809	1310	648	3170	2890	2700	1050	1010	661	286	1820
MIN	289	498	300	283	242	761	750	387	358	242	187	249
CFSM	.25	.34	.34	.24	.39	.83	.75	.33	.37	.19	.13	.35
IN.	.29	.38	.39	.27	.40	.96	.84	.38	.42	.22	.15	.39
AC-FT	27030	35750	36200	25570	37390	89150	78000	35770	38810	20140	13530	36280

CAL YR 1984	TOTAL	662223	MEAN	1809	MAX	10500	MIN	277	CFSM	1.04	IN.	14.11	AC-FT	1314000
WTR YR 1985	TOTAL	238777	MEAN	654	MAX	3170	MIN	187	CFSM	.37	IN.	5.09	AC-FT	473600

05463000 BEAVER CREEK AT NEW HARTFORD, IA

LOCATION.--Lat 42°30'50", long 92°37'55", in SE1/4 SE1/4 sec.28, T.90 N., R.15 W., Butler County, Hydrologic Unit 07080205, on downstream side of center bridge pier of bridge on county highway T55, 0.2 mi north of New Hartford, and 8 mi upstream from mouth.

DRAINAGE AREA.--347 mi².

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. Prior to July 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharge: Oct. 1-2, 6-10, 13-17, 24-28, Nov. 29 to March 8. Records good except for estimated daily discharges, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--40 years, 200 ft³/s, 7.83 in/yr, 144,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s June 13, 1947, gage height, 13.5 ft, from graph based on gage readings, from rating curve extended above 14,000 ft³/s; minimum daily, 2.3 ft³/s Jan. 20-24, 1956, Jan. 24, 1977.
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EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
March 5	----	*3,930	a*10.56	No other peak greater than base discharge.			

a ice jam
Minimum daily discharge, 27 ft³/s Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	167	78	185	37	240	175	110	57	59	77	140
2	30	255	70	165	36	185	241	101	56	55	70	113
3	27	163	63	144	36	155	373	94	54	47	79	96
4	36	133	62	118	35	1350	432	90	53	44	75	80
5	60	110	59	115	34	3300	372	95	61	43	76	67
6	87	100	54	94	34	1720	312	140	59	40	72	126
7	125	91	56	88	33	640	263	143	52	39	70	103
8	115	81	58	78	32	520	229	124	51	37	67	78
9	103	84	60	66	32	406	208	112	48	40	60	65
10	112	99	62	58	31	329	199	110	47	42	72	57
11	178	104	64	56	31	314	190	110	61	42	75	53
12	187	103	60	53	30	306	179	113	112	40	71	49
13	140	99	58	50	31	272	169	101	199	40	69	45
14	120	95	55	48	33	261	161	106	176	38	69	43
15	142	91	58	48	35	232	154	104	161	36	70	40
16	152	88	79	48	36	211	144	102	139	34	68	39
17	199	85	145	48	38	194	132	98	125	37	69	38
18	81	82	150	47	43	180	130	91	110	37	69	37
19	73	78	155	47	50	173	125	84	100	73	67	35
20	73	75	160	46	60	166	118	82	89	202	66	32
21	60	74	160	46	185	162	113	78	79	97	57	27
22	53	77	155	45	480	160	113	76	73	70	64	32
23	51	78	150	44	600	165	158	71	66	56	80	52
24	54	87	142	43	690	180	180	67	59	49	72	141
25	56	86	135	42	740	178	157	69	53	93	68	144
26	55	108	130	41	520	206	148	65	52	179	73	152
27	58	92	128	40	335	216	141	63	72	94	73	149
28	54	87	365	40	262	236	135	61	87	93	63	128
29	49	86	390	39	---	223	125	59	73	80	105	136
30	48	80	118	38	---	209	117	60	65	67	262	426
31	48	---	130	38	---	205	---	59	---	81	217	---
TOTAL	2655	3038	3609	2058	4539	13294	5693	2838	2489	1984	2545	2723
MEAN	85.6	101	116	66.4	162	429	190	91.5	83.0	64.0	82.1	90.8
MAX	199	255	390	185	740	3300	432	143	199	202	262	426
MIN	27	74	54	38	30	155	113	59	47	34	57	27
CFSM	.25	.29	.33	.19	.47	1.24	.55	.26	.24	.18	.24	.26
IN.	.28	.33	.39	.22	.49	1.43	.61	.30	.27	.21	.27	.29
AC-FT	5270	6030	7160	4080	9000	26370	11290	5630	4940	3940	5050	5400

CAL YR 1984	TOTAL	110507	MEAN	302	MAX	2400	MIN	26	CFSM	.87	IN.	11.85	AC-FT	219200
WTR YR 1985	TOTAL	47465	MEAN	130	MAX	3300	MIN	27	CFSM	.37	IN.	5.09	AC-FT	94150

05463500 BLACK HAWK CREEK AT HUDSON, IA

LOCATION.--Lat 42°24'28", long 92°27'47", in SW1/4 NE1/4 sec.27, T.88 N., R.14 W., Black Hawk County, Hydrologic Unit 07080205, on left bank 35 ft downstream 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 9.6 mi upstream from mouth.

DRAINAGE AREA.--303 mi².

PERIOD OF RECORD.--April 1952 to current year.

REVISED RECORDS.--WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 865.03 ft above NGVD.

REMARKS.--Estimated daily discharges: Nov. 29 to March 8. Records good, except for estimated daily discharges, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--33 years, 172 ft³/s, 7.71 in/yr, 124,600 acre-ft/yr; median of yearly mean discharges, 150 ft³/s, 6.7 in/yr, 109,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s July 9, 1969, gage height, 18.23 ft; minimum daily, 0.12 ft³/s Jan. 26, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
March 4	----	*2,300	a*14.80	No other peak greater than base discharge.			

a ice jam
Minimum daily discharge, 17 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	236	58	265	37	190	154	114	61	49	39	46
2	30	378	57	260	36	160	195	107	60	47	35	36
3	29	204	55	230	35	175	395	101	58	44	32	32
4	28	161	56	180	34	1650	430	96	56	41	31	29
5	28	129	57	140	34	2250	355	121	56	39	31	38
6	29	115	59	105	33	1100	299	186	53	37	29	71
7	37	109	61	96	33	450	247	178	51	35	27	79
8	35	103	63	82	33	370	213	155	50	34	25	51
9	33	100	66	77	33	285	190	138	45	34	24	40
10	33	101	68	73	33	246	179	127	45	33	29	35
11	37	95	68	69	33	247	166	122	56	31	27	33
12	49	93	70	64	33	248	153	122	86	31	24	29
13	41	91	55	62	33	229	144	109	198	33	24	27
14	38	90	52	59	32	229	137	123	169	33	24	25
15	44	88	60	57	32	200	132	130	143	30	23	24
16	59	72	125	54	31	182	126	120	121	28	23	22
17	95	88	260	52	31	166	116	117	110	27	22	21
18	82	83	150	51	38	152	114	111	97	25	22	20
19	104	76	190	49	51	145	109	105	91	84	21	18
20	81	68	180	48	76	136	104	102	82	134	20	17
21	67	80	195	47	440	130	102	92	74	69	20	18
22	59	79	290	46	560	126	115	87	72	49	24	22
23	56	81	190	46	840	130	171	84	64	40	34	34
24	54	72	135	45	960	145	179	82	59	36	29	83
25	53	70	105	44	940	146	173	80	55	54	24	124
26	55	68	110	43	400	140	158	75	53	139	22	117
27	54	69	107	41	170	145	144	72	69	79	21	122
28	60	66	510	41	165	164	134	70	60	54	21	94
29	57	64	560	40	---	191	123	66	54	45	34	87
30	55	63	155	39	---	177	118	66	51	40	68	246
31	52	---	175	38	---	175	---	64	---	40	64	---
TOTAL	1564	3192	4342	2543	5206	10479	5375	3322	2299	1494	893	1640
MEAN	50.5	106	140	82.0	186	338	179	107	76.6	48.2	28.8	54.7
MAX	104	378	560	265	960	2250	430	186	198	139	68	246
MIN	28	63	52	38	31	126	102	64	45	25	20	17
CFSM	.17	.35	.46	.27	.61	1.12	.59	.35	.25	.16	.10	.18
IN.	.19	.39	.53	.31	.64	1.29	.66	.41	.28	.18	.11	.20
AC-FT	3100	6330	8610	5040	10330	20790	10660	6590	4560	2960	1770	3250

CAL YR 1984	TOTAL	110234	MEAN	301	MAX	2040	MIN	26	CFSM	.99	IN.	13.53	AC-FT	218600
WTR YR 1985	TOTAL	42349	MEAN	116	MAX	2250	MIN	17	CFSM	.38	IN.	5.20	AC-FT	84000

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 Avenue bridge in Waterloo, 1.1 mi downstream from Black Hawk Creek, and at mile 187.9 upstream from mouth of Iowa River.

DRAINAGE AREA.--5,146 mi².

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.

REMARKS.--Estimated daily discharges: Dec. 2 to March 2. Records good, except for estimated daily discharges, which are poor. Slight diurnal fluctuation during low flow caused by powerplant upstream from station. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE--45 years 3,036 ft³/s 8.01 in/yr, 2,200,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,700 ft³/s Mar. 29, 1961, gage height, 21.86 ft; minimum daily, 152 ft³/s Jan. 28, 1959.

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 ft³/s. Flood of Apr. 2, 1933, reached a stage of about 19.5 ft from information by City of Waterloo, discharge, 61,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	----	ice jam	*8.75	March 5	1200	*10,400	8.42

Minimum daily discharge, 590 ft³/s Feb. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	834	2130	1500	2700	740	5000	3620	4120	1790	2070	834	1410
2	846	2600	1430	2620	720	4600	3520	3790	2440	1850	823	1210
3	856	2470	1100	2600	700	4340	3840	3460	2320	1660	808	1070
4	982	2400	700	2400	680	7710	4900	3170	2060	1590	795	966
5	866	2330	740	2100	670	10100	5610	3170	1820	1390	790	1180
6	851	2170	770	1980	640	9800	6870	3120	1660	1270	770	1400
7	882	1960	800	1750	640	5960	7210	2900	1580	1200	763	3350
8	1090	1870	1100	1550	630	5480	6680	2720	1490	1150	735	3820
9	1100	1810	1250	1400	620	6750	5770	2620	1420	1080	766	3290
10	1040	1850	1300	1300	610	7640	5230	2480	1360	1050	810	2550
11	1380	1870	1380	1250	600	8480	4820	2400	1470	1020	779	2130
12	1260	2120	1450	1200	600	7940	4490	2380	1620	970	770	1990
13	1270	2410	1280	1190	600	8000	4190	2280	1860	929	783	1810
14	1250	2490	1050	1120	600	7420	3990	2370	2400	914	740	1610
15	1350	2430	1120	1100	600	6870	3610	2380	2690	906	728	1420
16	1470	2190	1550	1080	600	6080	3570	2330	2770	873	717	1250
17	1720	2130	1700	1020	610	5370	3420	2310	2760	850	720	1130
18	1930	2040	1480	980	600	4470	3300	2250	2600	836	731	1030
19	2210	1940	1480	980	590	4480	3190	2210	2450	1090	714	961
20	2220	1850	1900	960	610	4040	2940	2160	2240	999	698	911
21	2140	1620	2350	950	1280	3740	2890	2070	2080	1010	685	873
22	2130	1550	2300	940	3200	3490	3060	1980	1940	901	704	920
23	1910	1620	2120	920	6400	3330	3170	1960	1790	852	717	1180
24	1780	1650	1700	890	7600	3340	3480	1770	1620	816	713	1180
25	1640	1620	1650	880	8600	3160	3680	1770	1550	1160	713	1480
26	1540	1590	1400	850	7600	3270	4140	1760	1500	1020	729	1820
27	1630	1620	1500	830	6200	3280	4530	1730	1600	1000	739	2040
28	1630	1560	2300	800	5100	3320	4890	1660	2190	920	723	2140
29	1580	1560	3900	800	---	3410	4850	1650	2490	888	1160	2350
30	1660	1540	3700	780	---	3510	4480	1600	2280	850	991	2590
31	1540	---	3300	760	---	3610	---	1600	---	856	1270	---
TOTAL	44587	58990	51300	40680	58640	167990	129940	74170	59840	33970	24418	51061
MEAN	1438	1966	1655	1312	2094	5419	4331	2393	1995	1096	788	1702
MAX	2220	2600	3900	2700	8600	10100	7210	4120	2770	2070	1270	3820
MIN	834	1540	700	760	590	3160	2890	1600	1360	816	685	873
CFSM	.28	.38	.32	.25	.41	1.05	.84	.47	.39	.21	.15	.33
IN.	.32	.43	.37	.29	.42	1.21	.94	.54	.43	.25	.18	.37
AC-FT	88440	117000	101800	80690	116300	333200	257700	147100	118700	67380	48430	101300

CAL YR 1984	TOTAL	2004867	MEAN	5478	MAX	23800	MIN	700	CFSM	1.06	IN.	14.49	AC-FT	3977000
WTR YR 1985	TOTAL	795586	MEAN	2180	MAX	10100	MIN	590	CFSM	.42	IN.	5.75	AC-FT	1578000

05464500 CEDAR RIVER AT CEDAR RAPIDS, IA

LOCATION.--Lat 41°58'14", long 91°40'01", in SE1/4 NW1/4 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 112.7 upstream from mouth of Iowa River.

DRAINAGE AREA.--6,510 mi².

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. Prior to Aug. 20, 1920, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Jan. 2-3, Jan. 16 to Feb. 27. Records good except those for estimated discharge, which are fair. U.S.G.S. gage-height telemeter and U.S. Army Corps of Engineers data collection platform at station.

AVERAGE DISCHARGE.--83 years, 3,467 ft³/s, 7.23 in/yr, 2,512,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft³/s Mar. 31, 1961, gage height, 19.66 ft; maximum gage height, 20.0 ft Mar. 18, 1929; minimum discharge 53 ft³/s Jan. 6, 1950, caused by construction operations upstream; minimum daily, 212 ft³/s Dec. 10, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1851 reached a stage of about 20 ft, discharge, 65,000b ft³/s, estimated.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	0915	a*18,000	*8.23	Mar. 4	2345	15,600	7.30

(a)Ice jam
Minimum discharge, 730 ft³/s Dec. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1190	2400	2340	3410	1900	12500	4610	4580	1860	2360	1030	1110
2	1210	3420	2320	3600	1880	11100	4710	4060	1830	2220	985	1250
3	1210	3610	2100	3400	1860	8590	4950	3910	2110	1970	953	1350
4	1480	3560	1450	2980	1810	12100	5300	3640	2540	1900	936	1240
5	1190	3260	1050	2430	1760	14900	5620	3540	2310	1770	928	1150
6	1280	3100	995	2720	1700	14900	6550	3510	2130	1670	902	1110
7	1330	2960	778	3030	1630	14300	7390	3570	1810	1550	877	1230
8	1240	2810	893	3290	1610	10700	8010	3340	1850	1450	837	1530
9	1160	2820	1570	3360	1590	6620	7680	3150	1770	1400	833	3170
10	1400	2740	2310	2900	1600	7640	6900	3010	1690	1330	904	3140
11	1440	2620	2350	2750	1610	8100	5880	3010	1680	1290	926	2800
12	1570	2500	2420	3150	1530	9110	5380	2980	1740	1150	921	2180
13	1770	2620	2290	3330	1510	9310	5010	2820	1840	1220	916	2070
14	1560	2850	2100	2500	1510	9110	4700	2800	1920	1220	926	1950
15	1590	3070	2010	3520	1520	8810	4330	2770	2230	1170	892	1830
16	1650	3050	2720	3300	1500	8010	4170	2760	2550	1110	830	1680
17	1830	2940	3280	3050	1490	7020	3940	2680	2700	1080	823	1550
18	2320	2830	3060	2800	1480	6060	3830	2610	2760	1040	801	1290
19	2560	2770	2320	2900	1470	5340	3680	2550	2720	1050	789	1300
20	2650	2690	2080	3000	1550	4730	3530	2500	2700	1170	783	1240
21	2660	2610	2400	2900	4500	4630	3540	2450	2470	1300	770	1220
22	2520	2510	3310	2500	16000	4290	3480	2380	2330	1210	805	1240
23	2420	2380	3070	2300	14600	4110	3610	2300	2180	1150	823	1440
24	2480	2360	3070	2200	13000	3950	4060	2020	1890	1060	848	1480
25	2180	2390	2620	2210	12200	3990	3790	2150	1900	1140	837	1750
26	2090	2410	1570	2290	13300	3930	3960	2020	1800	1130	817	1660
27	2070	2470	1490	2300	13800	3880	4120	2010	1730	1210	802	1850
28	2080	2460	2630	2200	14000	4090	4530	1980	1710	1160	815	2070
29	2120	2410	5310	2000	---	4190	4690	1950	1810	1120	818	2350
30	2040	2360	6530	1900	---	4100	4800	1930	2340	1060	878	2750
31	2040	---	4950	1910	---	4530	---	1910	---	1060	1150	---
TOTAL	56330	82980	77386	86130	133910	234640	146750	86890	62900	41720	27155	51980
MEAN	1817	2766	2496	2778	4783	7569	4892	2803	2097	1346	876	1733
MAX	2660	3610	6530	3600	16000	14900	8010	4580	2760	2360	1150	3170
MIN	1160	2360	778	1900	1470	3880	3480	1910	1680	1040	770	1110
CFSM	.28	.42	.38	.43	.73	1.16	.75	.43	.32	.21	.13	.27
IN.	.32	.47	.44	.49	.77	1.34	.84	.50	.36	.24	.16	.30
AC-FT	111700	164600	153500	170800	265600	465400	291100	172300	124800	82750	53860	103100

CAL YR 1984 TOTAL 2712326 MEAN 7411 MAX 30800 MIN 778 CFSM 1.14 IN. 15.50 AC-FT 5380000
WTR YR 1985 TOTAL 1088771 MEAN 2983 MAX 16000 MIN 770 CFSM .46 IN. 6.22 AC-FT 2160000

05465000 CEDAR RIVER NEAR CONESVILLE, IA

LOCATION.--Lat 41°24'36", long 91°17'06", in SW1/4 SW1/4 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, 10.7 mi upstream from mouth, and at mile 39.8 upstream from mouth of Iowa River.

DRAINAGE AREA.--7,785 mi².

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. 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.-- Estimated daily discharges during water year: Dec. 6 to Feb. 28. Records good except those for estimated daily discharge, which are poor. U.S. Army Corps of Engineers data collection platform at gage.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--46 years, 4,738 ft³/s, 8.26 in/yr, 3,433,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,800 ft³/s Apr. 2, 1961, gage height, 16.62 ft; maximum gage height, 16.85 ft Apr. 12, 1965; minimum daily discharge, 250 ft³/s Nov. 28, 1955, result of freezeup.

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.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	----	*28,000	a*16.56	Mar. 6	1500	19,200	12.67

a Ice jam
Minimum daily discharge, 1,040 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1480	5550	2880	5100	2150	16500	6170	5510	2580	2110	1380	1100
2	1430	6610	2840	3600	2000	14800	6370	5380	2510	2400	1310	1230
3	1440	5010	2810	3800	2000	13300	6280	5000	2450	2370	1270	1230
4	1430	5000	2630	3200	1950	15500	6380	4570	2430	2230	1250	1310
5	1440	4730	2330	2900	1850	17900	6610	4440	2710	2060	1230	1360
6	1600	4270	1600	2700	1800	18900	6940	4310	2880	1980	1220	1310
7	1460	3900	1150	2900	1750	17800	7450	4300	2710	1920	1200	1260
8	1520	3710	1500	3100	1700	16800	7940	4270	2530	1840	1180	1220
9	1530	3580	1650	3150	1700	14100	8250	4120	2320	1760	1150	1240
10	1440	4210	1700	3000	1650	9630	8360	3910	2300	1700	1350	1670
11	1440	4180	2150	2850	1550	9390	8040	3760	2250	1660	1370	2610
12	1590	3600	2500	3000	1550	9780	7230	3740	2230	1650	1210	2650
13	1650	3320	2300	3200	1500	10400	6610	4050	2190	1640	1230	2380
14	1730	3170	2350	2400	1500	10900	6260	3800	2210	1530	1250	2030
15	1820	3320	2200	3500	1500	10600	5860	3850	2300	1760	1200	1950
16	1820	3490	2100	3400	1600	10300	5490	3830	2390	1660	1180	1860
17	1990	3500	2550	3250	1650	9560	5150	3640	2650	1480	1140	1770
18	2300	3410	3000	3050	1700	8690	4970	3540	2850	1410	1100	1670
19	5260	3300	3500	2900	1800	7780	4840	3410	2950	1390	1090	1580
20	5420	3200	3000	2600	2050	7080	4660	3320	2970	1360	1070	1430
21	3790	3090	2600	2500	2700	6310	4480	3230	2890	1360	1050	1460
22	3420	3010	2300	2400	8800	6090	4410	3130	2870	1440	1040	1460
23	3190	2950	2850	2700	12000	5760	4430	3050	2750	1440	1050	1650
24	2930	2860	3400	2600	17500	5490	4520	2970	2570	1400	1090	1710
25	2870	2790	2500	2600	23500	5240	4770	2850	2370	1390	1100	1680
26	2840	2800	1800	2550	27000	5060	4620	2810	2180	1380	1100	1720
27	2640	3010	1750	2400	23000	5060	4640	2900	2130	1370	1080	1830
28	3010	3150	2550	2450	18000	5160	4710	2810	2030	1370	1050	1760
29	3260	3020	3600	2500	---	5320	5010	2730	1970	1380	1050	1890
30	2910	2960	5000	2450	---	5340	5240	2690	1950	1380	1060	2120
31	2790	---	6600	2300	---	5510	---	2620	---	1460	1050	---
TOTAL	73440	110700	81690	91050	167450	310050	176690	114540	74120	51280	36100	50140
MEAN	2369	3690	2635	2937	5980	10000	5890	3695	2471	1654	1165	1671
MAX	5420	6610	6600	5100	27000	18900	8360	5510	2970	2400	1380	2650
MIN	1430	2790	1150	2300	1500	5060	4410	2620	1950	1360	1040	1100
CFSM	.30	.47	.34	.38	.77	1.28	.76	.47	.32	.21	.15	.21
IN.	.35	.53	.39	.44	.80	1.48	.84	.55	.35	.25	.17	.24
AC-FT	145700	219600	162000	180600	332100	615000	350500	227200	147000	101700	71600	99450

CAL YR 1984	TOTAL	2987790	MEAN	8163	MAX	29000	MIN	1150	CFSM	1.05	IN.	14.28	AC-FT	5926000
WTR YR 1985	TOTAL	1337250	MEAN	3664	MAX	27000	MIN	1040	CFSM	.47	IN.	6.39	AC-FT	2652000

05465500 IOWA RIVER AT WAPELLO, IA
(National stream-quality accounting network station)

LOCATION.--Lat 41°10'48", long 91°10'57", in NW1/4 SE1/4 sec.27, T.74 N., R.3 W., Louisa County, Hydrologic Unit 07080209, on right bank 30 ft downstream from bridge on State Highway 99 at east edge of Wapello, 13.0 mi downstream from Cedar River, and at mile 16.0.

DRAINAGE AREA.--12,499 mi².

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.

GAGE.--Water-stage recorder. Datum of gage is 538.17 ft above NGVD; 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.--Estimated daily discharge: Dec. 6 to Feb. 24. Records good except those for periods of estimated record which are poor. Flow regulated by Coralville Lake (station 05453510) 67.3 mi upstream, since Sept. 17, 1958. U.S. Army Corps of Engineers data collection platform at gage.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--71 years, 7,001 ft³/s, 7.61 in/yr, 5,072,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft³/s June 18, 1947, gage height, 16.14 ft, datum then in use; maximum gage height, 28.63 ft Apr. 22, 1973; minimum daily discharge, 300 ft³/s Nov. 28, 1955, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,400 ft³/s Feb. 25, gage height, 23.37 ft; minimum daily discharge, 1,490 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2110	9430	4360	11000	3500	26300	8880	7390	3650	2850	1850	1520
2	2050	15200	4270	8300	3200	25200	9870	7620	3590	2850	1840	1650
3	1990	9990	4130	6000	3000	24300	10200	7700	3510	2940	1840	1740
4	1980	8690	3910	4950	2900	28600	9930	7530	3430	2990	1810	1750
5	1980	7980	3770	4400	2800	31300	9510	7250	3410	2960	1780	1860
6	2080	7490	3000	4000	2700	32900	9990	7020	3560	2810	1770	1860
7	2070	6850	2400	3900	2600	30800	10500	6820	3670	2680	1770	1790
8	2030	6310	2800	4200	2550	26600	10800	6690	3620	2580	1750	1720
9	2070	6120	3000	4950	2500	25500	11000	6410	3490	2520	1720	1710
10	2040	6440	3300	5300	2500	21800	11200	5910	3280	2430	1730	1790
11	2000	9050	3650	5200	2500	19800	11100	5480	3170	2360	1770	2470
12	2110	7550	4150	5000	2450	20100	10400	5840	3100	2290	1730	2990
13	2220	7060	3950	4800	2450	19900	9770	5380	3090	2250	1690	2900
14	2330	6250	3900	4900	2400	19700	9370	5730	3050	2180	1670	2540
15	2570	5360	4100	5000	2400	17800	8960	5490	3050	2150	1640	2300
16	2720	5370	4200	5000	2400	16800	8420	5480	3080	2450	1600	2200
17	2980	5330	4300	4950	2500	15000	8040	5310	3200	2280	1590	2130
18	3850	5050	4700	4750	2700	13400	7700	5080	3340	2070	1570	2300
19	7730	4780	5600	4400	2900	12000	7300	5040	3480	1960	1550	2320
20	11100	4620	4900	4000	3150	11000	7140	4920	3580	1940	1520	2180
21	7650	4520	4300	3900	5200	10100	7090	4830	3620	1930	1500	2070
22	6600	4480	3950	3950	8600	9180	6870	4680	3640	1920	1490	2060
23	6110	4500	3700	4150	16000	8640	6790	4350	3650	1920	1500	2260
24	5410	4450	4250	4250	26000	8310	6840	4210	3640	1920	1530	2640
25	4630	4350	4700	4200	42600	8080	6880	4120	3630	1880	1540	2640
26	4500	4290	4750	4000	37500	7750	6980	4130	3520	1850	1560	2530
27	4430	4390	3800	3900	23300	7450	7010	4000	3320	1880	1570	2630
28	4760	4390	2800	3850	26400	7590	7040	3950	3180	1870	1540	2600
29	6140	4390	4200	3800	---	8010	7080	4000	3040	1860	1520	2610
30	5580	4430	6000	3800	---	8260	7220	3960	2920	1850	1530	2800
31	5100	---	8400	3700	---	8220	---	3790	---	1860	1550	---
TOTAL	120920	189110	129240	148500	239700	530390	259880	170110	101510	70280	51020	66560
MEAN	3901	6304	4169	4790	8561	17110	8663	5487	3384	2267	1646	2219
MAX	11100	15200	8400	11000	42600	32900	11200	7700	3670	2990	1850	2990
MIN	1980	4290	2400	3700	2400	7450	6790	3790	2920	1850	1490	1520
AC-FT	239800	375100	256300	294500	475400	1052000	515500	337400	201300	139400	101200	132000

CAL YR 1984 TOTAL 4446180 MEAN 12150 MAX 34900 MIN 1980 AC-FT 8819000
WTR YR 1985 TOTAL 2077220 MEAN 5691 MAX 42600 MIN 1490 AC-FT 4120000

05465500 IOWA RIVER AT WAPELLO, IA--Continued
(National stream-accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1978 to current year.
WATER TEMPERATURES: 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 DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 810 microsiemens Jan. 23, 1978-Jan. 20, 1981; minimum daily, 250 microsiemens Sept. 18, 1978, July 20, 1982.
WATER TEMPERATURES: Maximum daily, 32.0°C July 15, 1980; 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, 413,000 tons July 19, 1982; minimum daily, 5.4 tons Jan. 21, 1981.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,670 mg/L Feb. 24; minimum daily mean, 4 mg/L Jan 22, Feb. 12.
SEDIMENT LOADS: Maximum daily, 183,000 tons Feb. 25; minimum daily, 26 tons Feb. 12.

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	71	404	744	21900	32	377	328	9740	13	123	520	36900
2	67	371	1300	53400	31	357	297	6660	13	112	297	20200
3	62	333	584	16300	32	357	246	3990	12	97	165	10800
4	59	315	232	5440	32	338	207	2770	10	78	240	18500
5	58	310	172	3710	29	295	193	2290	9	68	245	20700
6	84	472	143	2890	25	202	168	1810	8	58	154	13700
7	101	564	119	2200	20	130	129	1360	7	49	118	9810
8	78	428	98	1670	25	189	101	1150	6	41	104	7470
9	90	503	86	1420	39	316	85	1140	6	40	96	6610
10	84	463	204	3550	54	481	73	1040	5	34	88	5180
11	76	410	708	17300	69	680	62	870	5	34	135	7220
12	80	456	390	7950	105	1180	50	675	4	26	229	12400
13	104	623	170	3240	81	864	42	544	6	40	312	16800
14	139	874	119	2010	66	695	35	463	8	52	300	16000
15	165	1140	115	1660	60	664	30	405	11	71	257	12400
16	108	793	98	1420	57	646	27	364	15	97	229	10400
17	90	724	92	1320	55	639	20	267	19	128	213	8630
18	225	2340	81	1100	74	939	17	218	19	139	197	7130
19	1100	25000	61	787	76	1150	13	154	12	94	181	5860
20	1490	45300	45	561	60	794	10	108	25	213	164	4870
21	555	11500	44	537	50	580	6	63	62	870	149	4060
22	258	4600	42	508	45	480	4	43	730	17000	134	3320
23	168	2770	41	498	40	400	24	269	1370	59200	123	2870
24	130	1900	39	469	37	425	40	459	1670	117000	115	2580
25	110	1380	36	423	34	431	45	510	1590	183000	109	2380
26	103	1250	32	371	30	385	41	443	610	61800	105	2200
27	99	1180	52	616	30	308	34	358	212	13300	103	2070
28	131	1680	48	569	40	302	25	260	602	42900	108	2210
29	359	5950	40	474	109	1240	23	236	---	---	126	2730
30	248	3740	35	419	205	3320	20	205	---	---	138	3080
31	179	2460	---	---	275	6240	16	160	---	---	144	3200
TOTAL	---	120233	---	154712	---	25404	---	39024	---	496664	---	282280

05465500 IOWA RIVER AT WAPELLO, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	147	3520	157	3130	165	1630	128	985	89	445	112	460
2	133	3540	163	3350	149	1440	130	1000	85	422	106	472
3	119	3280	167	3470	135	1280	143	1140	82	407	104	489
4	120	3220	166	3370	122	1130	161	1300	79	386	102	482
5	123	3160	160	3130	114	1050	165	1320	77	370	117	588
6	120	3240	153	2900	124	1190	163	1240	74	354	108	542
7	114	3230	142	2610	126	1250	157	1140	69	330	108	522
8	139	4050	129	2330	110	1080	148	1030	66	312	100	464
9	128	3800	122	2110	85	801	139	946	65	302	105	485
10	120	3630	118	1880	70	620	131	859	63	294	145	701
11	156	4680	118	1750	59	505	127	809	65	311	161	1070
12	180	5050	292	4600	51	427	123	761	69	322	135	1090
13	173	4560	240	3490	45	375	119	723	66	301	113	885
14	147	3720	262	4050	41	338	115	677	65	293	110	754
15	121	2930	178	2640	41	338	113	656	67	297	103	640
16	105	2390	188	2780	43	358	181	1200	67	289	93	552
17	112	2430	200	2870	51	441	154	948	60	258	98	564
18	152	3160	182	2500	69	622	144	805	64	271	122	758
19	119	2350	185	2520	108	1010	140	741	79	331	104	651
20	119	2290	186	2470	139	1340	134	702	68	279	110	647
21	123	2350	175	2280	157	1530	130	677	66	267	110	615
22	119	2210	165	2080	169	1660	127	658	67	270	89	495
23	112	2050	169	1980	174	1710	121	627	70	283	93	567
24	104	1920	185	2100	172	1690	115	596	73	302	121	862
25	104	1930	192	2140	164	1610	110	558	70	291	120	855
26	117	2200	185	2060	157	1490	107	534	86	362	116	792
27	133	2520	172	1860	147	1320	104	528	112	475	125	888
28	142	2700	171	1820	138	1180	101	510	107	445	126	885
29	150	2870	184	1990	132	1080	99	497	79	324	118	832
30	154	3000	193	2060	129	1020	94	470	72	297	128	968
31	---	---	184	1880	---	---	92	462	106	444	---	---
TOTAL	---	91980	---	80200	---	31515	---	25099	---	10334	---	20575

TOTAL LOAD FOR YEAR: 1378020 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT 1984												
30...	10:30	5640	484	8.2	11.0	66	8.2	76	750	--	K8900	56
DEC												
11...	10:30	3650	573	8.4	0.0	12	14.2	100	744	180	150	70
MAR 1985												
01...	12:00	26300	294	7.6	3.0	150	13.9	106	745	K800	12000	49
MAY												
01...	11:30	7410	494	8.6	17.0	18	10.5	111	750	K80	130	81
JUL												
09...	11:30	2510	408	8.9	27.0	18	10.9	139	750	K22	K20	53
AUG												
27...	10:30	1530	483	9.2	21.0	23	10.8	123	750	--	K15	49

K Results based on colony count outside ideal range.

05465500 IOWA RIVER AT WAPELLO, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1984												
30...	230	58	20	15	12	0.4	4.6	171	41	25	0.2	12
DEC												
11...	270	70	23	19	13	0.5	2.6	200	44	29	0.2	10
MAR 1985												
01...	130	36	10	6.6	9	0.3	5.7	82	22	12	0.2	9.5
MAY												
01...	260	65	23	13	10	0.4	2.5	176	28	24	0.2	2.9
JUL												
09...	170	31	22	19	19	0.7	2.7	115	51	28	0.3	0.4
AUG												
27...	200	43	22	30	24	1	2.9	149	47	46	0.3	330

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 1984												
30...	300	280	0.41	4570	4.20	0.12	0.15	2.6	0.18	--	0.22	0.54
DEC												
11...	362	320	0.49	3570	5.00	<0.01	0.01	1.5	0.09	--	0.11	0.23
MAR 1985												
01...	187	150	0.25	13300	4.20	0.73	0.94	4.0	0.26	--	0.26	0.68
MAY												
01...	301	260	0.41	6020	4.70	0.02	0.03	1.8	0.02	--	0.03	0.25
JUL												
09...	233	220	0.32	1580	0.92	0.03	0.04	3.5	0.01	1.0	0.01	0.33
AUG												
27...	282	610	0.38	1160	<0.10	0.06	0.08	1.6	0.10	0.86	0.09	0.28

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)
OCT 1984												
30...	1070	16300	--	98	1	30	110	<0.5	1	<1	<3	9
DEC												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 1985												
01...	531	37700	--	74	<1	110	76	2	1	<1	<3	5
MAY												
01...	150	3000	95	--	1	<10	110	<0.5	<1	<1	<3	1
JUL												
09...	140	949	98	--	--	--	--	--	--	--	--	--
AUG												
27...	81	335	96	--	2	<10	94	<0.5	<1	<1	<3	5

DATE	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 1984												
30...	18	19	9	6	<0.1	<10	8	<1	<1	150	<6	10
DEC												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 1985												
01...	93	<1	<4	20	<0.1	<10	1	<1	<1	74	<6	140
MAY												
01...	<3	6	10	5	<0.1	<10	2	1	<1	160	<6	12
JUL												
09...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
27...	5	<1	8	2	0.4	10	3	<1	<1	160	<6	5

05470000 SOUTH SKUNK RIVER NEAR AMES, IA

LOCATION.--Lat 42°04'05", long 93°37'02", in NW1/4 SW1/4 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, and at mile 228.1 upstream from mouth of Skunk River.

DRAINAGE AREA.--315 mi².

PERIOD OF RECORD.--July 1920 to September 1927, October 1932 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 Iowa 1967: 1965. WDR IA-74-1: 1973 (P).

GAGE.--Water-stage recorder. Concrete control since July 21, 1934. Datum of gage is 893.61 ft above NGVD (Iowa Highway Commission benchmark). Prior to Aug. 25, 1921, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE--60 years (water years 1921-27, 1933-85), 160 ft³/s, 6.90 in/yr, 115,900 acre-ft/yr; median of yearly mean discharges, 120 ft³/s, 5.2 in/yr, 86,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,630 ft³/s June 10, 1954, gage height, 13.66 ft; maximum gage height, 13.90 ft May 20, 1944; no flow at times in 1934, 1937, 1953-57, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	0715	*1,980	*5.75	No other peak greater than base discharge.			

Minimum discharge, 1.2 ft³/s Aug. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	166	35	84	27	160	118	120	43	21	3.6	142
2	20	170	34	128	25	129	165	105	41	19	3.6	102
3	25	90	21	126	23	294	351	97	38	17	3.1	80
4	19	68	26	100	21	1760	453	90	36	15	2.8	65
5	16	51	25	84	18	637	383	95	36	12	2.6	169
6	25	42	20	80	16	337	309	201	33	10	2.0	323
7	30	39	21	77	15	296	247	222	32	8.4	1.7	208
8	32	38	24	61	16	247	205	172	30	7.7	1.5	132
9	30	42	28	51	16	224	179	146	27	7.0	2.2	97
10	22	63	30	49	15	241	167	129	26	6.0	2.0	82
11	28	77	32	45	14	261	154	123	42	5.3	1.3	74
12	31	77	33	41	14	239	140	117	65	5.3	2.0	63
13	33	71	27	40	15	191	133	98	90	5.5	2.3	55
14	23	67	23	39	18	169	123	92	117	5.2	2.5	48
15	37	62	26	36	24	147	118	90	116	4.6	3.4	43
16	44	51	74	35	24	129	110	85	132	4.2	3.3	40
17	54	49	127	33	19	111	100	81	115	3.5	3.4	36
18	50	49	100	33	31	101	97	74	93	3.2	2.8	32
19	51	45	109	30	52	107	91	71	81	3.9	2.4	28
20	46	36	99	30	95	90	85	69	70	5.1	1.9	24
21	34	34	132	28	318	87	81	64	62	5.1	1.9	26
22	26	40	112	27	635	85	82	60	59	5.1	542	29
23	20	47	89	26	377	91	94	59	47	5.7	1060	58
24	17	41	59	25	447	101	106	60	40	6.6	632	86
25	16	41	58	22	449	105	123	58	34	22	409	118
26	17	40	65	23	294	101	139	55	32	11	269	164
27	18	41	85	22	135	116	160	52	40	5.3	176	156
28	21	40	338	22	133	134	158	47	39	4.0	123	133
29	19	37	408	23	---	141	138	44	30	3.3	153	198
30	18	36	268	21	---	131	136	46	24	3.4	217	633
31	18	---	180	24	---	136	---	48	---	3.6	183	---
TOTAL	858	1750	2708	1465	3286	7098	4945	2870	1670	244.0	3816.3	3444
MEAN	27.7	58.3	87.4	47.3	117	229	165	92.6	55.7	7.87	123	115
MAX	54	170	408	128	635	1760	453	222	132	22	1060	633
MIN	16	34	20	21	14	85	81	44	24	3.2	1.3	24
CFSM	.09	.19	.28	.15	.37	.73	.52	.29	.18	.02	.39	.37
IN.	.10	.21	.32	.17	.39	.84	.58	.34	.20	.03	.45	.41
AC-FT	1700	3470	5370	2910	6520	14080	9810	5690	3310	484	7570	6830

CAL YR 1984	TOTAL	127029.1	MEAN	347	MAX	4240	MIN	6.1	CFSM	1.10	IN.	15.00	AC-FT	252000
WTR YR 1985	TOTAL	34154.3	MEAN	93.6	MAX	1760	MIN	1.3	CFSM	.30	IN.	4.03	AC-FT	67750

05470500 SQUAW CREEK AT AMES, IA

LOCATION.--Lat 42°01'21", long 93°37'45", in NE1/4 NW1/4 sec.10, T.83 N., R.24 W., Story County, Hydrological Unit 07080105, on left bank 65 ft downstream from Lincoln Way Bridge in Ames, 0.2 mi, downstream from College Creek, and 2.4 mi, upstream from mouth.

DRAINAGE AREA.--204 mi².

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 Iowa. 1966: 1965, WDR IA-71-1: 1970 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 881.00 ft above NGVD (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.--Estimated daily discharges: Jan. 13, 19-22, 25-26, Jan. 30 to Feb. 4, Sept. 25-29. Records good except for estimated daily discharges which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--28 years (water years 1920-27,1966-85), 128 ft³/s, 8.52 in/yr, 92,740 acre-ft/yr; median of yearly mean discharges, 98 ft³/s, 6.5 in/yr, 71,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s June 27, 1975, gage height, 14.00 ft, on basis of contracted-opening measurement; no flow at times most years.

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 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	0645	*2,030	*6.97	No other peak greater than base discharge.			

No flow for part of each day Aug. 11-13, 18-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	141	16	41	6.3	98	48	84	22	26	3.0	97
2	.54	78	15	89	5.8	103	72	79	20	22	2.1	64
3	2.4	45	8.1	90	5.4	365	229	71	17	18	3.9	47
4	1.4	35	9.5	70	4.8	1480	268	59	16	15	2.1	39
5	.76	27	9.2	48	4.4	263	204	69	16	13	3.8	126
6	1.5	23	7.4	47	4.4	179	149	90	14	9.6	2.7	261
7	7.0	20	6.6	46	4.0	150	111	93	13	7.7	1.4	131
8	3.5	20	7.2	39	3.8	135	90	78	12	6.3	.70	84
9	2.1	28	9.8	30	3.6	130	79	68	10	6.2	1.7	62
10	1.8	34	12	29	3.6	134	85	61	14	4.6	1.3	55
11	2.6	37	14	29	3.8	131	87	72	26	3.5	.00	46
12	2.6	40	15	30	4.0	102	79	62	45	3.2	.00	39
13	2.3	37	9.8	28	4.0	85	78	45	58	3.9	.00	35
14	5.9	35	7.1	25	4.3	71	69	45	63	4.8	1.3	34
15	56	34	12	25	3.7	60	62	43	69	3.7	.13	28
16	44	25	57	24	4.9	55	59	39	59	2.8	.07	25
17	30	28	105	22	9.2	48	54	37	51	2.6	2.0	23
18	31	25	110	20	30	45	54	33	41	2.2	.00	19
19	21	22	61	17	93	44	52	32	37	9.4	.00	19
20	14	17	55	15	87	40	51	30	33	4.0	.00	15
21	9.8	16	88	12	391	37	48	27	31	3.4	.00	17
22	7.6	18	81	10	461	36	52	25	29	2.7	623	22
23	6.4	23	50	8.6	264	44	62	25	23	1.2	1210	43
24	5.8	19	47	8.0	415	45	91	28	21	1.1	479	71
25	6.7	19	70	7.8	327	42	100	25	17	117	242	262
26	6.1	19	30	7.4	172	42	103	24	22	26	130	146
27	6.3	20	59	7.2	78	54	115	23	346	11	78	82
28	6.6	20	478	7.5	91	53	105	21	90	6.1	52	61
29	5.5	18	277	7.9	---	51	94	19	51	3.4	116	86
30	5.3	18	107	7.2	---	46	89	23	35	5.1	181	555
31	17	---	77	6.9	---	53	---	22	---	3.1	133	---
TOTAL	314.20	941	1910.7	854.5	2489.0	4221	2839	1452	1301	348.6	3270.20	2594
MEAN	10.1	31.4	61.6	27.6	88.9	136	94.6	46.8	43.4	11.2	105	86.5
MAX	56	141	478	90	461	1480	268	93	346	117	1210	555
MIN	.54	16	6.6	6.9	3.6	36	48	19	10	1.1	.00	15
CFSM	.05	.15	.30	.14	.44	.67	.46	.23	.21	.05	.51	.42
IN.	.06	.17	.35	.16	.45	.77	.52	.26	.24	.06	.60	.47
AC-FT	623	1870	3790	1690	4940	8370	5630	2880	2580	691	6490	5150

CAL YR 1984	TOTAL	88637.20	MEAN	242	MAX	4740	MIN	.54	CFSM	1.19	IN.	16.16	AC-FT	175800
WTR YR 1985	TOTAL	22535.20	MEAN	61.7	MAX	1480	MIN	.00	CFSM	.30	IN.	4.11	AC-FT	44700

05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IA

LOCATION.--Lat 41°21'19", long 92°39'31", in NW1/4 SW1/4 sec.25, T.76 N., R.16 W., Mahaska County, Hydrologic Unit 07080105, on right bank 400 ft upstream from bridge on U.S. Highway 63, 0.3 mi downstream from Painter Creek, 4.0 mi north of Oskaloosa, 52.0 mi. upstream from confluence with North Skunk River, and at mile 147.3 upstream from mouth of Skunk River.

DRAINAGE AREA.--1,635 mi².

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.

GAGE.--Water-stage recorder. Datum of gage is 685.50 ft above NGVD. Prior to Nov. 21, 1947, nonrecording gage at site 400 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 4-16, Dec. 20-28, Jan. 1 to Feb. 22, Mar. 3-4, 6-14, and Sept. 4-8, 11-25. Records good except those for estimated discharges, which are poor. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE.--40 years, 947 ft³/s, 7.87 in/yr, 686,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s June 15, 1947, gage height, 21.26 ft, from floodmarks; maximum gage height, 22.52 ft Feb. 3, 1973, backwater from ice; minimum daily discharge, 1.8 ft³/s Oct. 11-13, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 25.8 ft, from floodmarks, discharge, 37,000 ft³/s, from rating curve extended above 18,000 ft³/s on basis of velocity-area study.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	unknown	ice jam	*21.06	Mar. 4	1530	9,130	18.37
Feb. 23	0200	*12,600	20.55				

Minimum daily discharge, 52 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	793	384	1100	240	1680	996	549	277	289	86	504
2	147	1480	375	940	240	1580	1040	540	269	263	85	480
3	143	1120	355	800	240	2570	1090	522	266	240	82	418
4	142	897	350	700	240	8210	1250	503	266	219	80	363
5	163	737	340	620	240	8350	1540	482	263	197	78	331
6	161	634	340	560	240	4840	1560	464	258	178	77	302
7	163	586	335	520	240	2740	1350	461	249	160	75	352
8	205	555	330	480	240	2150	1170	463	238	146	73	507
9	204	1120	330	440	240	1810	1060	474	227	134	71	449
10	156	803	330	410	240	1600	985	482	218	123	70	371
11	228	656	330	380	240	1500	934	484	213	115	70	325
12	249	608	340	360	240	1420	899	485	213	110	68	295
13	214	586	360	340	240	1300	855	470	216	107	67	278
14	249	581	380	320	240	1170	813	451	218	104	66	264
15	576	560	480	310	240	1090	782	437	223	102	64	249
16	649	515	720	290	240	1010	751	417	228	99	62	234
17	972	496	827	285	250	942	714	399	235	95	60	219
18	964	497	658	280	300	883	683	377	239	93	58	212
19	1000	481	727	270	450	848	654	350	240	93	56	196
20	651	455	790	270	1000	840	629	339	237	91	55	184
21	553	433	1000	270	3000	826	606	338	231	91	53	172
22	478	425	1200	270	5800	789	590	331	226	90	52	163
23	425	426	1100	265	11900	783	610	322	219	89	770	280
24	394	425	1000	265	10200	804	608	312	212	86	1900	450
25	386	426	950	260	6260	805	580	307	205	86	1580	395
26	394	420	900	260	3670	788	567	302	197	87	996	429
27	387	438	1300	250	2500	772	566	298	406	87	720	436
28	436	421	2000	250	1860	882	564	297	540	86	572	437
29	383	408	2400	250	---	879	559	294	396	88	479	486
30	362	400	2100	245	---	826	554	290	323	87	412	759
31	349	---	1320	245	---	929	---	284	---	86	426	---
TOTAL	11934	18382	24351	12505	51030	55616	25559	12524	7748	3921	9363	10540
MEAN	385	613	786	403	1823	1794	852	404	258	126	302	351
MAX	1000	1480	2400	1100	11900	8350	1560	549	540	289	1900	759
MIN	142	400	330	245	240	772	554	284	197	86	52	163
CFSM	.24	.37	.48	.25	1.11	1.10	.52	.25	.16	.08	.18	.21
IN.	.27	.42	.55	.28	1.16	1.27	.58	.28	.18	.09	.21	.24
AC-FT	23670	36460	48300	24800	101200	110300	50700	24840	15370	7780	18570	20910

CAL YR 1984	TOTAL	734607	MEAN	2007	MAX	12200	MIN	142	CFSM	1.23	IN.	16.71	AC-FT	1457000
WTR YR 1985	TOTAL	243473	MEAN	667	MAX	11900	MIN	52	CFSM	.41	IN.	5.54	AC-FT	482900

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IA

LOCATION.--Lat 41°18'03", long 92°12'16", in NE1/4 SE1/4 sec.14, T.75 N., R.12 W., Keokuk County, Hydrologic Unit 07080106, on right bank 20 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, and 16.2 mi upstream from confluence with South Skunk River.

DRAINAGE AREA.--730 mi².

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. Prior to June 10, 1953, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges during water year: Oct. 20, 21, Dec. 4-12, Dec. 19 to Feb. 26, Mar. 4,5 and Aug. 19-22. Records good except for periods of estimated record, which are poor. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE.--40 years, 443 ft³/s, 8.24 in/yr, 321,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s Mar. 31, 1960, gage height, 25.33 ft; minimum daily, 0.1 ft³/s Oct. 7 to Nov. 15, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 22.8 ft, from floodmark, discharge, 14,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 25	unknown	4,000	*a17.78	Mar. 7	0200	*4,750	17.56

(a) ice jam

Minimum discharge, 8.7 ft³/s Sept. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	1590	183	470	125	856	715	167	89	83	29	30
2	36	891	172	460	115	795	692	163	81	68	33	27
3	34	817	159	480	110	1110	725	165	74	60	32	26
4	33	565	150	570	105	3470	742	145	77	56	30	26
5	33	455	145	620	105	3380	706	135	87	50	28	24
6	34	378	140	550	110	3950	632	130	75	46	21	22
7	39	323	135	490	110	3580	549	134	72	43	18	20
8	41	291	140	430	110	1110	475	137	71	40	17	19
9	47	273	145	350	110	837	424	124	67	40	15	19
10	50	1210	155	310	110	730	395	114	62	37	759	17
11	59	648	180	280	110	708	382	110	59	34	135	16
12	56	404	185	260	115	673	362	157	67	32	55	15
13	63	344	173	250	115	616	340	188	71	32	36	14
14	87	310	227	245	115	580	322	180	82	35	34	14
15	76	292	218	225	115	555	303	227	96	73	43	14
16	197	262	447	205	115	516	291	241	86	73	43	12
17	318	231	1030	195	115	476	266	181	89	46	28	11
18	613	216	742	190	130	438	240	159	95	32	21	11
19	1160	220	430	185	240	410	221	149	76	27	18	9.6
20	712	205	380	170	475	391	258	138	68	26	17	8.8
21	395	182	420	145	940	365	216	140	62	25	18	10
22	298	165	450	130	2150	343	180	144	67	24	19	17
23	248	175	730	125	2600	331	225	128	77	22	22	38
24	200	188	430	135	2950	333	217	113	72	22	64	67
25	177	182	410	140	3500	332	242	107	66	36	129	114
26	175	175	405	150	3700	315	212	106	68	93	131	135
27	191	190	530	145	1860	303	190	104	61	99	92	128
28	383	210	1400	135	1020	336	183	104	88	49	64	104
29	301	218	1800	130	---	415	169	104	126	32	48	95
30	287	200	1250	130	---	444	162	100	125	27	39	131
31	260	---	640	130	---	522	---	96	---	29	32	---
TOTAL	6641	11810	14001	8430	21475	29220	11036	4390	2356	1391	2070	1194.4
MEAN	214	394	452	272	767	943	368	142	78.5	44.9	66.8	39.8
MAX	1160	1590	1800	620	3700	3950	742	241	126	99	759	135
MIN	33	165	135	125	105	303	162	96	59	22	15	8.8
CFSM	.29	.54	.62	.37	1.05	1.29	.50	.19	.11	.06	.09	.05
IN.	.34	.60	.71	.43	1.09	1.49	.56	.22	.12	.07	.11	.06
AC-FT	13170	23430	27770	16720	42600	57960	21890	8710	4670	2760	4110	2370

CAL YR 1984	TOTAL	263229	MEAN	719	MAX	4170	MIN	33	CFSM	.98	IN.	13.41	AC-FT	522100
WTR YR 1985	TOTAL	114014.4	MEAN	312	MAX	3950	MIN	8.8	CFSM	.43	IN.	5.81	AC-FT	226100

05473400 CEDAR CREEK NEAR OAKLAND MILLS, IA

LOCATION.--Lat. 40°55'20", long 91°40'10", in SE1/4 NW1/4 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 4.3 mi upstream from mouth.

DRAINAGE AREA.--530 mi².

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 above NGVD.

REMARKS.--Estimated daily discharges: Dec. 5 to Feb. 22 and Mar. 3 to Apr. 3. Records good except those for periods of estimated record, which are fair. 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.

AVERAGE DISCHARGE.--8 years, 396 ft³/s, 10.1 in/yr, 286,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,560 ft³/s Apr. 3, 1983, gage height, 19.68 ft; minimum daily, 1.0 ft³/s July 9, 1977 and Sept. 14, 1983.

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.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	0445	4,980	15.71	Feb. 24	0630	*7,350	18.58
Nov. 2	0330	7,110	18.35	May 12	0330	3,620	13.44
Feb. 22	1115	ice jam	*18.89				

Minimum discharge, 1.3 ft³/s Sept. 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	6160	79	245	54	1060	410	44	64	18	409	5.7
2	12	6570	76	225	53	777	330	50	42	16	99	5.6
3	11	2180	71	210	50	1250	255	55	29	15	45	4.9
4	9.4	742	56	220	49	2000	214	46	22	14	24	4.1
5	9.0	516	48	230	49	3200	224	35	21	13	18	3.9
6	8.4	350	45	210	49	1300	416	31	19	13	85	3.7
7	9.2	262	42	190	49	720	268	31	18	11	63	2.8
8	8.7	223	41	180	50	530	175	30	17	13	25	4.1
9	7.8	223	39	150	50	450	139	27	16	11	17	3.2
10	7.1	196	43	130	49	410	115	23	16	8.8	26	2.4
11	19	179	48	125	49	380	113	240	17	8.2	58	2.4
12	16	142	55	125	50	355	116	2430	24	9.0	56	3.1
13	40	115	70	110	50	335	109	575	19	9.6	34	3.6
14	33	106	330	105	50	315	102	489	19	12	24	3.2
15	42	105	305	100	51	290	100	438	20	14	17	2.5
16	152	103	220	100	50	275	94	203	22	15	13	2.2
17	556	91	200	95	50	255	88	126	21	15	11	2.1
18	1060	81	145	89	58	240	78	94	19	10	9.0	1.9
19	4740	78	115	82	150	230	73	70	18	8.9	8.5	1.8
20	2620	77	100	76	520	215	74	58	15	7.9	7.9	1.9
21	646	67	110	70	1600	200	68	51	22	14	6.7	4.1
22	732	58	130	65	4700	195	63	44	1190	16	6.9	6.2
23	343	62	100	63	6640	190	60	41	341	12	7.6	13
24	184	70	92	65	7120	185	54	34	127	9.7	6.9	418
25	135	67	89	67	4570	180	54	31	110	15	6.4	196
26	169	67	92	68	1740	175	51	29	55	47	7.1	67
27	318	102	105	67	1330	170	47	28	37	33	6.7	55
28	896	129	370	62	1270	200	46	59	29	16	6.3	69
29	787	119	720	58	---	240	43	58	22	11	6.5	38
30	336	92	600	56	---	285	40	67	19	14	6.1	30
31	1410	---	290	55	---	340	---	147	---	544	5.8	---
TOTAL	15331.6	19332	4826	3693	30550	16960	4019	5684	2410	974.1	1122.4	961.4
MEAN	495	644	156	119	1091	547	134	183	80.3	31.4	36.2	32.0
MAX	4740	6570	720	245	7120	3200	416	2430	1190	544	409	418
MIN	7.1	58	39	55	49	170	40	23	15	7.9	5.8	1.8
CFSM	.93	1.22	.29	.22	2.06	1.03	.25	.35	.15	.06	.07	.06
IN.	1.08	1.36	.34	.26	2.14	1.19	.28	.40	.17	.07	.08	.07
AC-FT	30410	38350	9570	7330	60600	33640	7970	11270	4780	1930	2230	1910

CAL YR 1984	TOTAL	166955.1	MEAN	456	MAX	6570	MIN	4.8	CFSM	.86	IN.	11.72	AC-FT	331200
WTR YR 1985	TOTAL	105863.5	MEAN	290	MAX	7120	MIN	1.8	CFSM	.55	IN.	7.43	AC-FT	210000

05474000 SKUNK RIVER AT AUGUSTA, IA
(National stream-quality accounting network station)

LOCATION.--Lat 40°45'13", long 91°16'40", in NE1/4 NE1/4 sec.26, T.69 N., R.4 W., Des Moines County, Hydrologic Unit 07080107, on left bank 300 ft upstream from bridge on State Highway 394 at Augusta, 2.0 mi upstream from Long Creek, and at mile 12.5.

DRAINAGE AREA.--4,303 mi².

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. 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.--Estimated daily discharges during water year: Dec. 7-12 and Dec. 22 to Feb. 23. Records good except those for periods of estimated record, which are fair. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--71 years (water years 1915-85), 2,440 ft³/s, 7.70 in/yr, 1,768,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft³/s Apr. 23, 1973, gage height, 27.05 ft; minimum daily, 7 ft³/s Aug. 27 to Sept. 1, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD,--Flood of June 1, 1903, reached a stage of about 21 ft, discharge, about 45,000 ft³/s. Stage and discharge for flood of April 1973 are believed to be the greatest since 1851.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1445	18,400	14.38	Feb. 24	0830	24,300	16.96
Nov. 2	0715	23,400	16.52	Mar. 5	0630	*27,000	17.98
Feb. 22	----	ice jam	*20.14				

Minimum discharge, 133 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	339	19200	1210	3500	710	15700	3680	1240	845	640	1140	584
2	348	22200	1150	2700	680	9360	3510	1240	701	608	708	491
3	307	13200	1090	2500	670	7950	3280	1220	622	523	365	420
4	275	6460	987	2300	650	24700	3130	1190	552	434	269	436
5	258	4570	866	2200	620	26400	3190	1120	513	370	245	470
6	251	3320	472	2300	570	22600	3700	1050	500	323	227	427
7	256	2810	440	2500	550	15900	3770	985	540	289	258	380
8	256	2450	430	2350	540	11700	3580	946	531	263	262	325
9	260	2210	430	2200	530	11400	3300	928	487	242	190	281
10	272	2090	500	2000	520	9070	3090	910	450	221	313	245
11	285	2080	700	1900	520	6660	2930	904	428	202	455	244
12	380	3190	900	1600	520	6320	2740	5080	453	207	1830	387
13	439	2400	1120	1500	520	5500	2570	3510	469	214	1160	350
14	395	1930	2300	1450	520	4810	2430	2550	424	214	621	287
15	443	1780	2960	1350	520	4330	2280	2810	441	215	411	244
16	749	1660	2370	1300	540	3920	2140	2080	437	188	298	213
17	1970	1570	2080	1200	570	3590	1990	1700	463	273	237	196
18	2900	1480	2260	1200	610	3290	1840	1430	474	387	211	186
19	16300	1370	2750	1150	740	3040	1700	1230	468	294	199	175
20	12500	1290	2260	1000	1050	2830	1590	1090	473	222	189	166
21	6130	1240	1800	910	4700	2640	1510	1000	485	206	167	166
22	4440	1180	1750	860	20000	2460	1450	917	2400	195	151	166
23	3000	1140	1800	840	21000	2350	1420	869	1670	198	146	200
24	2170	1110	1850	800	24200	2270	1360	847	873	187	141	558
25	1750	1090	3300	780	23400	2170	1320	788	641	229	137	1310
26	1620	1090	3400	780	18000	2090	1310	736	557	274	227	715
27	1750	1310	3500	770	15500	2040	1300	707	462	240	1500	572
28	3250	1400	3400	780	15900	2170	1250	716	396	218	1570	623
29	3310	1330	4700	770	---	2170	1190	771	361	263	1170	597
30	2860	1310	6600	750	---	2220	1180	890	336	319	903	555
31	4330	---	5200	730	---	2910	---	893	---	1080	714	---
TOTAL	73793	109460	64575	46970	154850	224560	69730	42347	18452	9738	16414	11969
MEAN	2380	3649	2083	1515	5530	7244	2324	1366	615	314	529	399
MAX	16300	22200	6600	3500	24200	26400	3770	5080	2400	1080	1830	1310
MIN	251	1090	430	730	520	2040	1180	707	336	187	137	166
CFSM	.55	.85	.48	.35	1.29	1.68	.54	.32	.14	.07	.12	.09
IN.	.64	.95	.56	.41	1.34	1.94	.60	.37	.16	.08	.14	.10
AC-FT	146400	217100	128100	93160	307100	445400	138300	84000	36600	19320	32560	23740

CAL YR 1984	TOTAL	1636178	MEAN	4470	MAX	22800	MIN	251	CFSM	1.04	IN.	14.14	AC-FT	3245000
WTR YR 1985	TOTAL	842858	MEAN	2309	MAX	26400	MIN	137	CFSM	.54	IN.	7.29	AC-FT	1672000

05474000 SKUNK RIVER AT AUGUSTA, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on State Highway 394, 300 ft downstream from gage.

PERIOD OF RECORD.--Water years 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, 190 microsiemens Aug. 10, 1977.
WATER TEMPERATURES: Maximum daily, 34.0°C July 20, 1980; 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, 1.5 tons Feb. 8, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 640 microsiemens Feb. 9,10; minimum daily, 200 microsiemens Oct. 19, Nov. 1, Mar. 5.
TEMPERATURES: Maximum daily, 31.0°C Sep. 7, 8; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 5,620 mg/L May 12; minimum daily mean, 8 mg/L Feb. 17.
SEDIMENT LOADS: Maximum daily, 233,000 tons Mar 4; minimum daily, 12 tons Dec. 8, Feb. 17.

SPECIFIC CONDUCTANCE LABORATORY (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	540	200	560	380	570	320	460	480	540	480	430	450
2	540	220	560	420	---	360	480	460	530	480	340	480
3	490	240	550	---	---	360	500	470	520	480	360	500
4	540	320	560	---	630	220	500	500	480	460	370	520
5	520	400	560	---	630	200	500	500	480	420	390	520
6	540	410	580	520	---	230	500	480	490	440	430	520
7	530	450	590	540	600	260	500	445	470	520	450	440
8	530	480	600	540	---	270	520	450	420	490	470	500
9	510	500	580	560	640	300	530	440	430	460	500	520
10	520	520	600	560	640	350	535	450	440	420	360	550
11	520	520	580	580	610	360	540	500	520	400	450	520
12	520	540	520	600	600	340	540	240	520	440	400	520
13	520	400	550	600	610	440	540	320	550	460	300	480
14	540	400	460	590	630	460	540	490	540	480	330	460
15	500	460	410	600	600	480	550	420	520	440	320	450
16	540	500	440	---	620	500	550	500	500	480	340	540
17	440	520	460	600	610	490	550	500	460	480	340	510
18	320	540	490	600	480	---	550	540	460	520	360	500
19	200	540	480	---	580	520	530	550	460	540	400	440
20	260	550	460	---	560	520	510	560	440	520	400	440
21	300	560	480	---	380	540	510	560	440	520	390	440
22	310	570	480	610	240	520	520	560	340	460	410	420
23	380	570	480	580	210	530	530	560	280	460	440	460
24	420	560	520	---	210	540	490	580	340	460	440	530
25	460	570	550	---	220	540	480	600	460	440	450	440
26	485	560	560	620	250	550	480	560	460	420	480	410
27	500	560	550	580	265	520	490	560	440	500	560	340
28	440	550	520	---	280	440	460	560	420	500	320	410
29	410	540	410	620	---	530	460	570	440	520	320	460
30	450	560	390	580	---	540	480	540	420	540	400	480
31	340	---	370	580	---	510	---	570	---	320	440	---

05474000 SKUNK RIVER AT AUGUSTA, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	10.0	6.0	.0	.0	6.0	6.0	18.0	25.0	28.0	25.0	26.0
2	16.0	10.0	4.0	.0	.0	6.0	10.0	19.0	25.0	27.5	25.0	28.0
3	17.0	10.0	4.0	.0	.0	5.0	12.0	20.0	25.0	29.0	24.0	28.0
4	19.0	10.0	1.0	.0	.0	4.0	12.0	20.0	25.0	29.0	23.0	27.0
5	19.0	9.0	1.0	.0	.0	4.0	9.0	20.0	23.0	29.0	23.0	29.0
6	19.0	9.0	.0	.0	.0	4.0	10.0	21.0	23.0	28.0	27.0	29.0
7	19.0	9.0	3.0	.0	.0	4.0	10.0	22.5	26.0	28.0	29.0	31.0
8	18.0	9.0	3.0	.0	.0	5.0	9.0	23.0	29.0	30.0	29.0	31.0
9	20.0	13.0	2.0	.0	.0	6.0	10.0	23.0	28.0	30.0	30.0	27.0
10	20.0	7.0	3.0	.0	.0	6.0	9.5	24.0	23.0	30.0	27.0	27.0
11	18.0	7.0	3.0	.0	.0	7.0	13.0	24.0	20.0	30.0	27.0	21.0
12	18.0	7.0	3.0	.0	.0	8.0	17.0	23.0	20.0	29.0	27.0	21.0
13	20.0	8.0	3.0	.0	.0	8.0	16.0	18.0	21.0	29.0	27.0	20.0
14	20.0	8.0	3.0	.0	.0	8.0	14.0	20.0	19.0	29.0	25.0	19.0
15	18.0	8.0	3.0	.0	---	8.0	15.0	20.0	24.0	29.0	25.0	19.0
16	17.0	6.0	6.0	.0	---	8.0	18.0	16.0	25.0	29.0	27.0	22.0
17	15.0	6.0	4.0	.0	.0	8.0	19.0	18.0	25.0	28.0	29.0	22.0
18	14.0	5.0	3.0	.0	.0	10.0	21.0	21.0	22.0	29.0	29.0	26.0
19	14.0	4.0	3.0	.0	.0	10.0	21.0	22.0	24.0	29.0	28.0	26.0
20	12.0	4.0	1.5	.0	.0	12.0	23.0	21.0	25.0	29.0	25.0	22.0
21	12.0	4.0	3.0	.0	2.0	12.0	23.0	23.0	25.0	29.0	26.0	22.0
22	12.0	4.0	3.0	.0	1.0	10.0	22.0	22.0	23.0	29.0	26.0	20.0
23	12.0	5.0	4.0	.0	1.0	9.0	21.0	23.0	24.0	28.0	23.0	20.0
24	11.0	5.0	.0	.0	1.0	9.0	20.0	24.0	26.0	28.0	23.0	17.0
25	11.0	8.0	.0	.0	2.0	8.0	20.0	25.0	27.0	28.0	23.0	15.0
26	13.0	9.0	.0	.0	2.0	12.0	22.0	28.0	30.0	28.0	23.0	15.0
27	14.0	6.0	.0	.0	2.0	13.0	22.0	22.0	26.0	29.0	23.0	15.0
28	12.0	6.0	.0	.0	4.0	14.0	23.0	23.0	26.0	29.0	23.0	17.0
29	12.0	6.0	3.0	.0	---	11.0	20.0	23.0	26.0	29.0	23.0	17.0
30	12.0	6.0	4.0	.0	---	11.0	19.0	25.0	26.0	25.0	26.0	13.0
31	12.0	---	4.0	.0	---	7.0	---	25.0	---	23.0	26.0	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	35	32	3050	151000	17	56	1190	11200	35	67	820	34800
2	40	38	1390	83300	18	56	620	4520	43	79	730	18400
3	40	33	2100	74800	16	47	107	722	38	69	1460	38700
4	42	31	730	12700	11	29	25	155	24	42	3490	233000
5	45	31	640	7900	12	28	35	208	10	17	2710	193000
6	40	27	585	5240	10	13	47	292	17	26	1650	101000
7	40	28	359	2720	11	13	55	371	15	22	1450	62200
8	37	26	200	1320	10	12	60	381	12	17	1250	39500
9	37	26	154	919	13	15	66	392	9	13	940	28900
10	31	23	139	784	14	19	45	243	14	20	670	16400
11	27	21	159	893	20	38	56	287	16	22	960	17300
12	30	31	840	7230	28	68	75	324	16	22	820	14000
13	32	38	500	3240	24	73	121	490	17	24	505	7500
14	29	31	410	2140	600	3730	59	231	17	24	345	4480
15	51	61	319	1530	525	4200	43	157	17	24	279	3260
16	150	303	155	695	225	1440	60	211	12	17	241	2550
17	440	2340	132	560	140	786	59	191	8	12	265	2570
18	645	5050	63	252	125	763	54	175	44	72	193	1710
19	2420	108000	55	203	318	2360	43	134	25	50	175	1440
20	1770	59700	37	129	282	1720	17	46	30	85	164	1250
21	1270	21000	24	80	196	953	12	29	610	7740	142	1010
22	760	9110	22	70	169	799	20	46	1480	79900	121	804
23	420	3400	19	58	130	632	29	66	1420	84300	117	742
24	260	1520	22	66	105	524	40	86	1800	109000	106	650
25	160	756	19	56	56	499	18	38	1360	78900	74	434
26	131	573	16	47	30	275	11	23	1260	61200	72	406
27	158	747	40	141	42	397	18	37	1030	43100	94	518
28	428	3760	48	181	280	2570	29	61	760	32600	214	1250
29	413	3690	33	119	1460	18500	43	89	---	---	142	832
30	320	2470	20	71	1850	33000	35	71	---	---	97	581
31	1490	26900	---	---	1750	24600	36	71	---	---	230	1810
TOTAL	---	249796	---	358444	---	98215	---	21347	---	497464	---	830997

05474000 SKUNK RIVER AT AUGUSTA, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	478	4750	94	315	181	413	80	138	545	1490	77	114
2	350	3320	93	311	152	288	101	166	229	367	63	79
3	270	2390	95	313	145	244	96	136	185	139	58	63
4	225	1900	78	251	125	186	68	80	157	84	59	68
5	192	1650	72	218	105	145	64	64	117	57	65	81
6	241	2410	72	204	88	119	69	60	99	45	78	90
7	249	2530	77	205	95	139	59	46	98	51	91	93
8	260	2510	60	153	71	102	59	42	118	61	77	68
9	220	1960	60	150	59	78	57	37	116	43	72	55
10	180	1500	65	160	75	91	42	25	247	161	91	60
11	135	1070	77	188	91	105	35	19	185	197	99	65
12	115	851	5620	98100	100	122	41	23	557	2630	105	110
13	100	694	3170	33600	103	130	45	26	249	733	65	61
14	82	538	1190	8190	110	126	38	22	277	417	77	60
15	83	511	820	6220	113	135	48	28	180	173	100	66
16	74	428	480	2700	108	127	54	27	162	110	100	58
17	55	296	305	1400	102	128	58	43	138	74	89	47
18	47	233	231	892	97	124	56	59	106	50	79	40
19	63	289	170	565	88	111	64	49	95	43	72	34
20	90	386	142	418	93	119	64	35	84	36	81	36
21	89	363	126	340	210	275	73	34	75	28	88	39
22	84	329	114	282	2450	17100	85	36	77	26	81	36
23	80	307	96	225	1870	8430	84	34	70	23	74	40
24	85	312	71	162	765	1800	80	29	67	21	118	178
25	85	303	62	132	232	402	82	37	76	23	308	1090
26	72	255	109	217	117	176	83	45	84	44	205	396
27	63	221	144	275	91	114	74	35	343	1320	165	255
28	61	206	127	246	66	71	81	35	328	1330	141	237
29	63	202	128	266	44	43	79	41	260	772	109	176
30	74	236	485	1170	39	35	80	51	160	367	95	142
31	---	---	385	928	---	---	1040	2680	101	182	---	---
TOTAL	---	32950	---	158796	---	31478	---	4182	---	11097	---	3937

TOTAL LOAD FOR YEAR: 2298703 TONS.

05474000 SKUNK RIVER AT AUGUSTA, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
OCT								
26...	12:00	12.0	1620	124	542	--	--	--
FEB								
27...	14:00	1.5	15100	891	36300	51	54	56
MAR								
04...	16:00	4.0	26300	3680	261000	41	43	48
MAY								
07...	13:00	20.0	937	90	228	--	--	--
12...	20:00	23.0	6520	7990	141000	44	55	70
JUN								
22...	19:30	23.0	2000	2070	11200	44	56	71
JUL								
02...	11:15	26.0	620	119	199	--	--	--
SEP								
06...	12:00	27.0	431	81	94	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT							
26...	--	--	--	--	--	--	99
FEB							
27...	62	84	87	94	98	100	--
MAR							
04...	59	79	81	91	100	--	--
MAY							
07...	--	--	--	--	--	--	99
12...	87	99	100	--	--	--	--
JUN							
22...	86	--	--	--	--	--	100
JUL							
02...	--	--	--	--	--	--	99
SEP							
06...	--	--	--	--	--	--	97

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	BED NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	MAT. SIEVE DIAM. % FINER THAN 8.00 MM
OCT										
26...	12:00	1620	4	0	2	52	85	94	98	100
FEB										
27...	14:00	15100	3	0	6	73	97	99	100	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT 1984												
26...	12:00	1620	466	8.4	12.0	35	9.6	90	751	1400	1000	65
DEC												
20...	12:30	2180	442	7.8	0.0	150	14.3	100	750	2600	K14000	60
FEB 1985												
27...	14:00	15100	238	7.8	1.5	290	12.9	94	750	1500	K15000	50
MAY												
07...	13:00	937	474	8.9	20.0	10	--	--	749	K15	K15	78
JUL												
02...	11:15	620	505	8.9	26.0	22	12.8	161	751	K73	K56	52
SEP												
06...	12:00	431	514	8.8	27.0	30	8.3	106	750	K48	120	62

K Results based on colony count outside ideal range.

05474000 SKUNK RIVER AT AUGUSTA, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT 1984												
26...	230	58	20	11	9	0.3	5.8	--	47	16	0.3	15
DEC												
20...	200	50	18	12	11	0.4	3.5	139	45	16	<0.1	11
FEB 1985												
27...	120	31	9.3	5.2	8	0.2	6.0	66	23	11	0.2	10
MAY												
07...	240	52	26	14	11	0.4	2.5	159	58	19	0.3	3.5
JUL												
02...	240	53	25	16	13	0.5	3.0	183	57	22	0.3	4.3
SEP												
06...	250	68	20	12	9	0.3	4.5	190	40	20	0.4	15

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT 1984												
26...	281	270	0.38	1230	4.90	0.09	0.12	2.1	0.04	--	0.18	0.29
DEC												
20...	269	240	0.37	1580	5.60	0.26	0.33	2.2	0.11	--	0.13	0.52
FEB 1985												
27...	162	140	0.22	6600	4.30	0.62	0.8	2.9	0.13	--	0.15	0.72
MAY												
07...	266	270	0.36	673	2.60	0.03	0.04	2.1	<0.01	--	0.01	0.17
JUL												
02...	285	290	0.39	477	0.36	0.04	0.05	2.1	0.03	0.77	0.04	0.25
SEP												
06...	322	290	0.44	375	4.00	0.05	0.06	2.1	0.13	0.74	0.15	0.24

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)
OCT 1984												
26...	124	542	99	--	1	20	120	<0.5	<1	<1	<3	<1
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 1985												
27...	891	36300	--	84	<1	250	83	2	3	<1	<3	7
MAY												
07...	90	228	99	--	<1	<10	100	<0.5	<1	<1	<3	3
JUL												
02...	119	199	99	--	--	--	--	--	--	--	--	--
SEP												
06...	81	94	97	--	4	<10	130	<0.5	<1	<1	<3	4

DATE	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 1984												
26...	10	1	10	11	0.1	<10	1	1	<1	170	<6	14
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 1985												
27...	170	<1	<4	56	0.2	<10	7	<1	<1	80	<6	45
MAY												
07...	7	2	12	5	<0.1	<10	2	2	<1	180	<6	10
JUL												
02...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
06...	25	<1	10	19	0.3	<10	2	2	7	190	7	14

05474500 MISSISSIPPI RIVER AT KEOKUK, IA
(National stream-quality accounting network station)

LOCATION.--Lat 40°23'37", long 91°22'27", in SE1/4 SW1/4 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 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1878 to current year.

GAGE.--Water-stage recorder. Datum of gage is 477.41 ft above NGVD (levels by U.S. Army Corps of Engineers); Jan. 1, 1978, 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 NGVD.

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 Union Electric Co.

AVERAGE DISCHARGE.--107 years, 63,790 ft³/s, 7.28 in/yr, 46,220,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 344,000 ft³/s Apr. 24, 1973; maximum gage height, 23.35 ft Apr. 24, 1973; minimum daily discharge, 5,000 ft³/s Dec. 27, 1933.

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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 207,000 ft³/s Mar. 6; minimum daily, 28,200 ft³/s Dec. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42000	143000	63200	108000	46900	179000	147000	120000	83900	56900	53000	42900
2	44100	142000	61900	75000	48400	167000	145000	116000	80500	56100	51800	45700
3	45500	141000	65200	50200	46400	165000	152000	117000	74700	55800	50000	44400
4	47700	130000	66700	46400	46000	204000	157000	117000	71100	53400	45700	46400
5	49500	126000	68000	47200	45600	205000	159000	119000	70100	54200	38800	48900
6	48700	124000	59600	49900	45500	207000	162000	122000	67700	57300	36800	41800
7	44100	121000	36500	65400	44500	200000	167000	122000	69700	61300	36500	42200
8	41500	120000	28200	75100	43000	184000	171000	126000	69300	64200	36800	50500
9	41500	120000	36200	78100	42300	169000	173000	125000	66800	64300	37600	52000
10	41600	119000	38700	76100	42300	163000	176000	124000	64600	64000	36500	55000
11	41500	119000	41800	70800	41800	167000	178000	123000	63600	64800	36800	59400
12	41000	124000	46100	67000	42200	159000	174000	125000	63600	64700	36800	65500
13	37100	120000	55300	61300	40400	154000	168000	129000	68100	63700	36100	66400
14	38700	106000	64400	58200	39900	150000	164000	122000	71100	65800	36500	64900
15	44000	92400	67300	58600	39000	144000	160000	120000	70900	61300	44000	65300
16	46400	89600	67800	60700	38300	140000	154000	118000	70400	62700	47600	66100
17	51600	89500	67000	59600	39100	143000	149000	115000	64800	61100	48500	72000
18	59900	94100	74100	57300	39100	140000	142000	110000	63600	54500	49600	75500
19	84900	91800	79700	55400	39000	139000	135000	104000	59700	50200	49000	75600
20	96300	91000	81000	52200	38600	137000	128000	99400	57900	48700	50900	73800
21	97500	88200	74900	48400	43600	136000	122000	98200	59500	40400	54300	74500
22	91800	82400	67000	48500	80000	132000	119000	97200	66300	40800	54400	75000
23	82100	75600	64300	46000	113000	128000	117000	87700	58400	43300	49500	70200
24	78200	64300	64400	45000	133000	126000	118000	90800	57800	41800	44300	70000
25	84500	63800	51000	44800	151000	124000	119000	88500	60600	34600	40300	69200
26	90200	65500	43200	46400	191000	124000	122000	86200	58400	32800	40300	71800
27	93200	67300	43000	46200	205000	125000	123000	89200	56700	35600	42900	67900
28	101000	69300	53800	46500	189000	127000	119000	85700	58300	44400	46700	70700
29	101000	66400	80200	46400	---	129000	118000	85400	56700	48300	45700	70600
30	102000	64100	98900	47600	---	136000	117000	86300	58600	48500	43400	70300
31	107000	---	121000	48800	---	137000	---	86600	---	52200	43300	---
TOTAL	2016100	3010300	1930400	1787100	1953900	4740000	4355000	3355200	1963400	1647700	1364400	1864500
MEAN	65040	100300	62270	57650	69780	152900	145200	108200	65450	53150	44010	62150
MAX	107000	143000	121000	108000	205000	207000	178000	129000	83900	65800	54400	75600
MIN	37100	63800	28200	44800	38300	124000	117000	85400	56700	32800	36100	41800
CFSM	.55	.84	.52	.48	.59	1.28	1.22	.91	.55	.45	.37	.52
IN.	.63	.94	.60	.56	.61	1.48	1.36	1.05	.61	.52	.43	.58
AC-FT	3999000	5971000	3829000	3545000	3876000	9402000	8638000	6655000	3894000	3268000	2706000	3698000

CAL YR 1984 TOTAL 35066800 MEAN 95810 MAX 192000 MIN 22700 CFSM .81 IN. 10.96 AC-FT69554992
WTR YR 1985 TOTAL 29988000 MEAN 82160 MAX 207000 MIN 28200 CFSM .69 IN. 9.37 AC-FT59481000

05474500 MISSISSIPPI RIVER AT KEOKUK, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at public access 0.5 mi downstream from discharge station.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1977 to September 1981.
WATER TEMPERATURES: December 1977 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 612 microsiemens Jan. 21, 1980; minimum daily, 310 microsiemens Apr. 7, 1981.
WATER TEMPERATURES: Maximum daily, 28.0°C July 13-23, 1980; minimum daily, 0.0° C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 1984												
15...	11:30	92400	364	7.9	6.5	62	11.3	93	751	1000	2000	48
FEB 1985												
20...	11:00	38600	472	8.0	0.0	2.6	13.5	93	754	640	80	55
MAY												
21...	11:30	98300	358	8.0	19.5	28	9.1	100	753	K54	K43	31
AUG												
29...	11:00	45700	348	8.2	23.0	3.8	7.1	84	750	K15	K67	35

DATE	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1984												
15...	190	46	18	8.8	9	0.3	3.0	141	30	15	0.1	10
FEB 1985												
20...	250	60	24	12	9	0.3	2.5	194	39	18	0.2	14
MAY												
21...	200	49	19	7.9	8	0.3	3.0	170	39	12	0.2	5.8
AUG												
29...	180	39	19	9.7	11	0.3	2.3	141	25	11	0.2	2.9

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
NOV 1984												
15...	200	220	0.27	49900	1.90	0.12	0.15	0.3	0.09	--	0.09	0.31
FEB 1985												
20...	304	290	0.41	31700	2.50	0.31	0.4	1.4	0.10	--	0.10	0.14
MAY												
21...	226	240	0.31	60000	<0.10	1.60	2.1	4.2	0.25	2.5	0.24	0.83
AUG												
29...	209	190	0.28	25800	0.13	0.09	0.12	0.9	0.08	0.43	0.12	0.14

K Results based on colony count outside ideal range.

05474500 MISSISSIPPI RIVER AT KEOKUK, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
NOV 1984												
15...	193	48100	99	<1	20	56	<0.5	<1	<1	<3	2	63
FEB 1985												
20...	8	834	60	<1	10	57	<0.5	<1	<1	<3	2	61
MAY												
21...	68	18000	95	<1	<10	59	0.5	2	<1	<3	1	9
AUG												
29...	12	1480	89	2	<10	42	<0.5	<1	<1	3	4	7

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
NOV 1984											
15...	3	6	4	<0.1	<10	1	<1	<1	87	<6	12
FEB 1985											
20...	2	7	38	<0.1	<10	6	1	<1	110	<6	4
MAY											
21...	2	10	8	<0.1	<10	5	1	<1	99	<6	16
AUG											
29...	<1	9	3	<0.1	<10	2	<1	<1	88	<6	8

05476500 DES MOINES RIVER AT ESTHERVILLE, IA

LOCATION.--Lat 43°23'51", long 94°50'38", in SW1/4 SE1/4 sec.10, T.99 N., R.34 W., Emmet County, Hydrologic Unit 07100002, on right bank in city park, 1,200 ft downstream from bridge on State Highway 9 at Estherville, 0.1 mi upstream from School Creek, 2.3 mi upstream from Brown Creek, and at mile 404.2.

DRAINAGE AREA.--1,372 mi².

PERIOD OF RECORD.--October 1951 to current year. Prior to November 1951, monthly discharge only, published in WSP 1728.

REVISED RECORDS.--WSP 1438: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,247.55 ft above NGVD.

REMARKS.--Estimated daily discharges: Jan. 26 to Feb. 19, and June 24 to July 1. Records good except for estimated discharges which are poor.

AVERAGE DISCHARGE.--34 years, 372 ft³/s, 3.68 in/yr, 269,500 acre-ft/yr; median of yearly mean discharges, 250 ft³/s, 2.5 in/yr, 181,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s Apr. 12, 1969, gage height, 17.68 ft, from floodmark; no flow Jan. 16-18, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 13	1700	2,480	7.88	Apr. 30	0800	*2,930	*8.77
Mar. 18	2300	2,640	8.21				

Minimum daily discharge, 23 ft³/s Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	351	226	132	45	136	1000	2810	1110	1050	185	162
2	58	337	199	133	44	128	968	2610	1090	1170	175	155
3	56	304	89	121	40	121	1110	2410	1060	1250	167	162
4	54	294	134	116	36	120	1350	2240	1060	1240	158	200
5	53	327	169	115	32	103	1560	2130	1060	1160	152	219
6	60	310	208	119	29	84	1300	2090	1020	1020	144	232
7	63	300	209	117	31	83	1170	2000	974	899	133	274
8	63	299	196	115	27	111	1060	1840	925	821	106	356
9	64	318	183	108	24	222	992	1660	864	755	87	493
10	75	338	200	101	23	623	935	1530	809	686	87	527
11	85	295	206	91	25	1540	897	1420	771	628	87	527
12	88	283	206	90	28	2060	844	1330	761	572	104	532
13	88	273	197	95	30	2110	816	1340	735	524	118	463
14	99	332	173	87	33	1790	798	1320	716	494	146	443
15	148	366	162	83	40	1730	768	1340	958	469	143	470
16	162	327	414	84	36	1900	752	1480	1110	437	126	451
17	215	300	367	83	31	1880	729	1540	997	403	131	427
18	321	226	309	75	30	2400	709	1510	896	379	124	413
19	419	239	281	83	39	2220	705	1500	796	355	117	396
20	494	190	245	125	56	1840	675	1510	691	329	112	378
21	576	233	262	130	100	1790	694	1460	656	302	101	388
22	546	341	247	111	109	1710	1160	1370	610	280	96	382
23	526	310	234	97	99	1660	2190	1280	557	260	109	385
24	504	335	194	84	90	1580	2730	1220	520	250	136	409
25	484	299	190	73	90	1480	2840	1200	510	259	139	424
26	469	287	172	64	101	1390	2820	1130	525	247	133	432
27	445	277	168	54	90	1360	2720	1060	540	234	122	415
28	436	264	199	49	106	1320	2770	984	580	222	131	406
29	423	245	182	50	---	1220	2870	954	640	214	156	402
30	381	211	173	47	---	1130	2910	982	780	202	183	426
31	368	---	150	48	---	1070	---	1130	---	193	187	---
TOTAL	7885	8811	6544	2880	1464	36911	42842	48380	24321	17304	4095	11349
MEAN	254	294	211	92.9	52.3	1191	1428	1561	811	558	132	378
MAX	576	366	414	133	109	2400	2910	2810	1110	1250	187	532
MIN	53	190	89	47	23	83	675	954	510	193	87	155
CFSM	.19	.21	.15	.07	.04	.87	1.04	1.14	.59	.41	.10	.28
IN.	.21	.24	.18	.08	.04	1.00	1.16	1.31	.66	.47	.11	.31
AC-FT	15640	17480	12980	5710	2900	73210	84980	95960	48240	34320	8120	22510

CAL YR 1984	TOTAL	487274	MEAN	1331	MAX	8480	MIN	53	CFSM	.97	IN.	13.21	AC-FT	966500
WTR YR 1985	TOTAL	212786	MEAN	583	MAX	2910	MIN	23	CFSM	.42	IN.	5.77	AC-FT	422100

05476750 DES MOINES RIVER AT HUMBOLDT, IA

LOCATION.--Lat 42°43'12", long 94°13'06", in SE1/4 SW1/4 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, about 700 ft below dam, 3.2 mi below dam 3.2 mi upstream from Indian Creek, 3.9 mi upstream from East Fork Des Moines River, and at mile 334.3.

DRAINAGE AREA.--2,256 mi².

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. Prior to Oct. 3, 1966, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 31 to Mar. 4. Records good except for estimated daily discharges, which are poor. Daily nonrecording gage readings available in district office for period Mar. 7, 1940, to Sept. 30, 1964. 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. U.S. Army Corp of Engineers data collection platform at site.

AVERAGE DISCHARGE.--21 years, 928 ft³/s, 5.59 in/yr, 672,300 acre-ft/yr; median of yearly mean discharges, 750 ft³/s, 4.5 in/yr, 543,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s Apr. 14, 1969, gage height, 15.40 ft; minimum daily, 13 ft³/s Nov. 12, 1976, Jan. 12 to Feb. 2, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1947, reached a stage of 12.2 ft, discharge, 11,000 ft³/s at present site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 13	0645	2,830	6.64	Apr. 28	1745	*4,280	*7.84
Apr. 7	0230	3,190	6.96				

Minimum daily discharge, 125 ft³/s Feb. 11,12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	566	490	580	142	320	1490	3780	1430	1120	311	408
2	210	559	478	520	139	330	1470	3750	1520	1210	297	369
3	202	583	325	460	135	320	1630	3780	1440	1290	285	333
4	196	514	281	420	132	310	2030	3620	1400	1340	282	325
5	193	486	265	400	132	294	2500	3350	1380	1340	276	515
6	193	471	277	385	130	352	3020	3090	1350	1300	265	1300
7	216	484	302	375	129	457	3120	2870	1360	1200	256	1580
8	218	476	402	345	128	597	2660	2710	1290	1080	220	1270
9	221	503	470	325	127	835	2210	2580	1240	997	211	1070
10	221	662	445	310	126	1810	1940	2420	1190	921	204	983
11	216	874	432	290	125	2180	1780	2250	1150	837	187	963
12	222	786	423	305	125	2560	1660	2110	1150	768	186	905
13	227	700	398	310	126	2790	1560	1920	1200	717	206	855
14	249	674	325	270	127	2620	1490	1860	1240	683	236	822
15	301	696	391	270	128	2560	1450	1900	1210	640	216	725
16	324	704	504	245	130	2500	1400	1910	1230	615	225	706
17	348	698	641	235	130	2380	1340	1950	1450	592	240	700
18	369	653	1050	230	130	2410	1290	1990	1420	542	226	672
19	414	602	801	220	140	2400	1230	2010	1290	515	207	638
20	544	534	749	208	150	2540	1200	1990	1170	485	199	645
21	601	506	696	200	170	2660	1240	2010	1060	471	200	603
22	653	490	630	190	210	2420	1920	2020	961	443	345	603
23	679	510	560	183	250	2230	2320	1950	900	404	380	635
24	663	582	524	170	290	2130	2960	1870	836	404	315	638
25	668	582	519	165	290	2070	3480	1810	768	408	285	700
26	655	593	475	160	300	1950	3810	1730	717	376	269	734
27	647	572	484	152	290	1870	4130	1650	746	362	260	766
28	621	546	822	148	290	1830	4240	1520	917	352	258	783
29	602	539	1090	152	---	1810	4150	1420	1090	336	283	795
30	594	520	1030	149	---	1730	3940	1370	1070	324	345	943
31	586	---	700	145	---	1650	---	1330	---	321	416	---
TOTAL	12264	17665	16979	8517	4721	52915	68660	70520	35175	22393	8091	22984
MEAN	396	589	548	275	169	1707	2289	2275	1173	722	261	766
MAX	679	874	1090	580	300	2790	4240	3780	1520	1340	416	1580
MIN	193	471	265	145	125	294	1200	1330	717	321	186	325
CFSM	.18	.26	.24	.12	.07	.76	1.01	1.01	.52	.32	.12	.34
IN.	.20	.29	.28	.14	.08	.87	1.13	1.16	.58	.37	.13	.38
AC-FT	24330	35040	33680	16890	9360	105000	136200	139900	69770	44420	16050	45590

CAL YR 1984	TOTAL	795446	MEAN	2173	MAX	10800	MIN	155	CFSM	.96	IN.	13.12	AC-FT	1578000
WTR YR 1985	TOTAL	340884	MEAN	934	MAX	4240	MIN	125	CFSM	.41	IN.	5.62	AC-FT	676100

05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IA

LOCATION.--Lat 42°43'26", long 94°11'30", in NW1/4 SE1/4 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, 3.4 mi upstream from confluence with Des Moines River, and at mile 333.8 upstream from mouth of Des Moines River.

DRAINAGE AREA.--1,308 mi².

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. Prior to Oct. 1, 1954, nonrecording gage at site 8 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 13 to Mar. 8. Records good except for estimated daily discharges, which are poor. U. S. Army Corps of Engineers data collection platform at site.

COOPERATION.--Two discharge measurements were provided by the U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--45 years, 550 ft³/s, 5.71 in/yr, 398,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft³/s June 21, 1954, gage height, 16.95 ft, from flood-mark, site and datum then in use; minimum daily, 4.8 ft³/s Jan. 11-14, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1954, reached a stage of 24.02 ft, discharge, 17,400 ft³/s at present site. Flood of September 1938 reached a stage of 17.4 ft, discharge, about 22,000 ft³/s, site and datum in use during the period 1940-54.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 9	1445	2,270	11.71	Sept. 7	0230	2,280	11.73
Apr. 27	2100	*2,560	*12.10				

Minimum discharge, 25 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	131	281	580	74	200	657	2000	447	413	50	428
2	35	130	306	430	76	178	655	1810	452	392	48	316
3	35	131	146	350	78	182	746	1660	511	348	44	236
4	33	137	154	300	82	220	1030	1550	530	309	43	188
5	37	137	175	255	84	150	1400	1470	485	276	43	837
6	37	137	174	225	86	180	1670	1390	442	246	42	2060
7	47	137	190	200	88	225	1780	1290	413	218	35	2240
8	47	133	174	175	90	440	2000	1180	390	187	32	1930
9	48	135	161	160	94	770	2230	1080	367	165	29	1770
10	49	170	164	140	96	960	2220	984	343	149	30	1710
11	63	272	174	130	100	1040	2020	924	337	136	28	1520
12	66	467	170	120	102	1160	1730	873	335	125	29	1140
13	62	576	150	115	108	1270	1480	786	380	118	32	825
14	64	572	140	110	112	1420	1300	752	546	113	42	639
15	95	515	150	105	122	1560	1190	731	721	112	42	528
16	107	449	200	96	122	1600	1100	734	789	108	34	449
17	126	416	260	96	115	1560	1030	746	795	101	37	395
18	139	371	370	90	130	1500	979	753	792	94	40	353
19	148	331	540	88	138	1390	921	758	773	91	37	312
20	153	306	660	86	150	1230	868	755	698	102	30	296
21	151	322	720	84	180	1080	829	757	604	103	27	339
22	162	248	600	82	195	988	1250	733	531	95	102	393
23	152	257	520	78	210	941	1590	700	473	85	118	436
24	139	259	450	77	220	887	1970	724	418	82	108	475
25	134	247	350	74	220	835	2150	664	364	89	94	605
26	129	237	320	74	224	793	2270	621	330	82	79	699
27	123	234	300	72	188	766	2450	580	357	68	67	770
28	118	227	520	70	192	730	2540	540	387	61	60	800
29	114	225	750	72	---	707	2370	503	383	57	82	870
30	115	214	850	72	---	700	2180	486	400	54	461	1260
31	128	---	725	74	---	710	---	467	---	52	495	---
TOTAL	2892	8123	10844	4680	3676	26372	46605	29001	14793	4631	2440	24819
MEAN	93.3	271	350	151	131	851	1554	936	493	149	78.7	827
MAX	162	576	850	580	224	1600	2540	2000	795	413	495	2240
MIN	33	130	140	70	74	150	655	467	330	52	27	188
CFSM	.07	.21	.27	.12	.10	.65	1.19	.72	.38	.11	.06	.63
IN.	.08	.23	.31	.13	.10	.75	1.33	.82	.42	.13	.07	.71
AC-FT	5740	16110	21510	9280	7290	52310	92440	57520	29340	9190	4840	49230

CAL YR 1984	TOTAL	513571	MEAN	1403	MAX	9180	MIN	33	CFSM	1.07	IN.	14.61	AC-FT	1019000
WTR YR 1985	TOTAL	178876	MEAN	490	MAX	2540	MIN	27	CFSM	.37	IN.	5.09	AC-FT	354800

05480500 DES MOINES RIVER AT FORT DODGE, IA

LOCATION.--Lat 42°30'22", long 94°12'04", in NW1/4 SW1/4 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 at mile 314.6.

DRAINAGE AREA.--4,190 mi².

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. See WSP 1728 for history of changes prior to Dec. 8, 1949.

REMARKS.--Estimated daily discharges: Jan. 11 to Mar. 3. Records good except for estimated daily discharges, which are poor. Occasional minor regulation caused by dam 0.8 mi upstream from gage. U. S. Army Corps of Engineers rain-gage and data collection platform and City of Fort Dodge gage-height telemeter at station.

COOPERATION.--One discharge measurement provided by U. S. Army Corps of Engineers.

AVERAGE DISCHARGE.--53 years (water years 1914-27, 1947-85), 1,540 ft³/s, 4.99 in/yr, 1,116,000 acre-ft/yr; median of yearly mean discharges, 1,250 ft³/s, 4.1 in/yr, 906,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,600 ft³/s Apr. 8, 1965, gage height, 17.79 ft; maximum gage height, 19.62 ft, from floodmark, June 23, 1947, present site and datum; minimum daily discharge, 14 ft³/s Nov. 3, 1955.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	2030	7,410	7.10	Apr. 27	2300	*8,030	*7.26

Minimum daily discharge, 210 ft³/s Feb. 7,8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	748	767	2120	230	560	2470	6520	2230	1710	383	878
2	262	703	842	2030	230	800	2390	6190	2330	1790	367	739
3	254	737	514	1800	225	1300	2830	6010	2300	1830	349	614
4	245	681	393	1420	220	1450	3540	5710	2250	1840	338	535
5	243	656	459	1210	220	707	4280	5330	2190	1820	333	1080
6	251	625	479	847	220	786	5160	4910	2090	1730	319	3050
7	290	637	516	847	210	798	5430	4530	2020	1590	300	3920
8	289	629	613	898	210	1010	5270	4250	1910	1380	281	3370
9	287	658	672	842	215	1720	4980	4000	1820	1220	269	2950
10	286	836	668	603	220	3040	4610	3760	1700	1120	266	2770
11	274	1200	657	770	220	3690	4220	3550	1670	1020	246	2600
12	281	1330	783	1000	220	3800	3750	3380	1640	937	230	2210
13	286	1380	813	920	225	4230	3430	3120	1660	878	243	1810
14	343	1340	672	820	220	4250	3160	2960	1910	826	275	1550
15	495	1300	682	650	220	4270	2960	2990	2080	767	278	1330
16	485	1240	958	600	220	4280	2840	3000	2200	720	268	1180
17	532	1190	1230	490	220	4090	2700	3050	2420	681	286	1120
18	534	1120	2140	450	220	4030	2590	3090	2420	646	277	1050
19	571	1030	1860	420	220	3920	2460	3100	2290	640	264	964
20	662	902	1970	420	320	3810	2380	3100	2080	599	252	984
21	761	825	1660	415	600	3820	2310	3070	1870	591	240	942
22	820	807	1700	390	680	3580	2980	3050	1680	558	633	1010
23	870	786	1680	370	560	3340	4100	3000	1510	522	645	1110
24	843	878	1200	340	580	3210	5150	3310	1370	496	531	1140
25	846	873	1520	330	530	3110	6040	3320	1220	523	456	1330
26	824	891	1400	320	540	2970	6870	3070	1150	491	393	1500
27	796	866	1000	310	470	2890	7800	2850	1130	456	358	1610
28	777	826	3550	285	510	2840	7950	2620	1360	433	333	1680
29	743	803	3220	260	---	2820	7530	2430	1690	411	400	1810
30	726	780	2860	235	---	2750	7020	2330	1670	399	610	2340
31	733	---	2220	230	---	2690	---	2240	---	396	932	---
TOTAL	15872	27277	39698	22642	8975	86561	129200	113840	55860	29020	11355	49176
MEAN	512	909	1281	730	321	2792	4307	3672	1862	936	366	1639
MAX	870	1380	3550	2120	680	4280	7950	6520	2420	1840	932	3920
MIN	243	625	393	230	210	560	2310	2240	1130	396	230	535
CFSM	.12	.22	.31	.17	.08	.67	1.03	.88	.44	.22	.09	.39
IN.	.14	.24	.35	.20	.08	.77	1.15	1.01	.50	.26	.10	.44
AC-FT	31480	54100	78740	44910	17800	171700	256300	225800	110800	57560	22520	97540

CAL YR 1984	TOTAL	1698055	MEAN	4639	MAX	26500	MIN	243	CFSM	1.11	IN.	15.08	AC-FT	3368000
WTR YR 1985	TOTAL	589476	MEAN	1615	MAX	7950	MIN	210	CFSM	.39	IN.	5.23	AC-FT	1169000

05481000 BOONE RIVER NEAR WEBSTER CITY, IA

LOCATION.--Lat 42°26'01", long 93°48'12", in NW1/4 SE1/4 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, and 3.2 mi downstream from Brewers Creek.

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. Prior to June 26, 1940, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 14-18, Dec. 2-27, Jan. 2 to Feb. 27, Mar. 31. Records good except for estimated daily discharges which are poor. U. S. Army Corps of Engineers rain-gage and gage-height telemeters at station.

COOPERATION.--Three discharge measurements provided by U. S. Army Corps of Engineers.

AVERAGE DISCHARGE.--45 years, 412 ft³/s, 6.63 in/yr, 298,500 acre-ft/yr; median of yearly mean discharges, 340 ft³/s, 5.5 in/yr, 246,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s June 22, 1954, gage height, 18.55 ft; no flow Feb. 7, 1977.

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 ft³/s. Flood of June 18, 1932, reached a stage of 16.0 ft, discharge, 15,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 9	1145	*3,880	*7.57	No other peak greater than base discharge.			

Minimum discharge, 15 ft³/s Aug. 16-18, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	105	82	600	104	460	212	824	197	176	23	1000
2	22	130	83	900	105	258	263	724	202	144	22	865
3	22	89	84	680	106	308	503	626	206	117	20	644
4	22	78	86	450	106	744	675	591	198	101	20	437
5	22	72	73	300	108	768	704	561	142	86	20	430
6	24	61	76	200	108	451	755	536	143	74	20	1180
7	28	62	65	160	109	395	769	482	135	62	20	2080
8	31	62	54	135	110	336	638	442	131	55	18	3050
9	28	72	54	118	110	424	517	416	120	51	18	3770
10	28	107	68	110	112	552	468	394	118	48	20	2840
11	26	115	71	105	114	750	426	388	126	43	16	1770
12	30	122	74	102	118	636	390	387	137	40	17	1280
13	30	136	74	105	120	442	361	357	165	38	17	1000
14	38	164	85	105	123	420	343	347	196	35	17	774
15	96	131	96	105	128	336	329	323	237	32	18	598
16	132	104	115	102	135	285	313	310	257	32	16	488
17	152	97	190	102	150	241	296	299	264	30	16	420
18	153	84	300	102	170	212	276	280	267	27	16	364
19	135	82	450	102	200	201	266	272	243	32	16	316
20	93	75	490	105	245	177	253	283	181	31	16	326
21	74	65	460	105	500	162	236	269	171	26	16	304
22	64	71	420	108	1400	151	249	267	144	25	288	345
23	55	74	380	108	1200	154	318	274	126	27	268	451
24	52	68	340	108	940	165	431	295	114	25	167	538
25	50	70	370	108	1000	165	491	295	99	26	126	813
26	50	81	420	105	750	169	883	292	96	23	91	921
27	56	94	370	105	600	189	1330	297	167	23	61	882
28	59	90	946	102	493	197	1290	259	213	26	47	811
29	57	84	825	102	---	216	1150	228	231	26	70	843
30	52	81	766	102	---	208	975	223	226	25	192	1220
31	58	---	723	102	---	204	---	223	---	24	871	---
TOTAL	1761	2726	8690	5843	9464	10376	16110	11764	5252	1530	2563	30760
MEAN	56.8	90.9	280	188	338	335	537	379	175	49.4	82.7	1025
MAX	153	164	946	900	1400	768	1330	824	267	176	871	3770
MIN	22	61	54	102	104	151	212	223	96	23	16	304
CFSM	.07	.11	.33	.22	.40	.40	.64	.45	.21	.06	.10	1.21
IN.	.08	.12	.38	.26	.42	.46	.71	.52	.23	.07	.11	1.36
AC-FT	3490	5410	17240	11590	18770	20580	31950	23330	10420	3030	5080	61010

CAL YR 1984	TOTAL	376938	MEAN	1030	MAX	10800	MIN	21	CFSM	1.22	IN.	16.61	AC-FT	747700
WTR YR 1985	TOTAL	106839	MEAN	293	MAX	3770	MIN	16	CFSM	.35	IN.	4.71	AC-FT	211900

05481300 DES MOINES RIVER NEAR STRATFORD, IA

LOCATION.--Lat 42°15'04", long 93°59'52", in NW1/4 NE1/4 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 at mile 276.7.

DRAINAGE AREA.--5,452 mi².

PERIOD OF RECORD.--April 1920 to current year in reports of Geological Survey. Published as "near Boone" 1920-67. Monthly discharge only for some periods, published in WSP 1308. December 1904 to April 1920 (fragmentary gage heights during high-water periods only) in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1925-27, 1934. WSP 1708: 1955.

GAGE.--Water-stage recorder. Datum of gage is 894.00 ft above NGVD. Prior to May 1, 1920, nonrecording gage 16.6 mi downstream at datum 23.49 ft lower. Oct. 9, 1924, to Jan. 10, 1933, nonrecordinga gage 17.6 mi downstream at datum 28.53 ft lower. Jan. 11, 1933, to Sept. 30, 1934, nonrecording gage 17.9 mi downstream at datum 22.25 ft lower. Oct. 1, 1934 to Feb. 6, 1935, nonrecording gage and Feb. 7, 1935 to Sept. 30, 1967, water-stage recorder 17.9 mi downstream at datum 21.84 ft lower.

REMARKS.--Estimated daily discharges: Dec. 5 to Mar. 9. Records good except for estimated daily discharges, which are poor. Occasional minor regulation caused by dam at Fort Dodge. U. S. Army Corps of Engineers rain-gage and gage-height telemeters at station.

COOPERATION.--Three discharge measurements provided by U. S. Army Corps of Engineers.

AVERAGE DISCHARGE.--65 years, 1,951 ft³/s, 4.86 in/yr, 1,413,000 acre-ft/yr; median of yearly mean discharges, 1,630 ft³/s, 4.1 in/yr, 1,181,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,400 ft³/s June 22, 1954, gage height, 25.35 ft, from graph based on hourly gage readings, site and datum then in use; no flow for a short time on Jan. 9, 25, 1938, caused by manipulation of gates in control dam, site then in use; minimum unregulated daily discharge, 13 ft³/s Jan. 23, 24, 1977.

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 ft³/s. Flood of June 22, 1954, reached a stage of 29.7 ft, from floodmark, present site and datum, discharge, 54,200 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 28	1345	*9,560	*12.91	No other peak greater than base discharge.			

Minimum discharge, 274 ft³/s Oct. 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	974	988	3600	650	1300	3000	7970	2420	2040	463	2160
2	286	987	974	4000	640	1500	2880	7360	2450	2000	447	2060
3	289	950	969	3300	640	1400	3420	7000	2480	1990	430	1730
4	289	924	543	2600	640	2400	4240	6710	2420	1970	410	1380
5	278	859	600	2000	640	2700	5050	6490	2380	1930	401	1330
6	274	818	980	1600	640	1700	5870	6160	2280	1880	391	2620
7	285	775	960	1300	640	1550	6470	5620	2190	1780	377	5560
8	332	787	1050	1000	640	1550	6400	5170	2110	1640	355	6580
9	327	812	1200	900	640	1720	6020	4810	2000	1460	334	6870
10	316	941	1220	820	630	2800	5670	4510	1900	1320	332	6440
11	314	1160	1180	790	630	4470	5270	4220	1950	1220	322	5190
12	310	1470	1110	760	630	4640	4800	4000	1970	1140	308	4210
13	310	1570	1120	740	630	4800	4360	3690	1960	1070	298	3440
14	321	1640	1220	700	630	4850	3980	3400	2060	998	309	2840
15	490	1620	1180	690	625	4750	3700	3270	2310	940	335	2440
16	637	1560	1300	680	625	4730	3510	3290	2500	866	333	2080
17	726	1480	1600	680	625	4590	3330	3270	2590	814	324	1870
18	744	1420	2300	670	620	4410	3170	3300	2730	769	346	1740
19	720	1340	2450	660	620	4330	3060	3320	2730	786	322	1650
20	715	1240	2700	660	620	4200	2920	3360	2540	736	307	1630
21	767	1110	2900	660	620	4150	2820	3290	2290	692	298	1650
22	828	1080	2600	660	2200	4090	2930	3280	2050	659	1790	1570
23	871	1060	2400	660	2100	3810	4220	3240	1860	619	3130	1700
24	903	1050	2100	660	1880	3600	5180	3480	1680	584	1950	2080
25	893	1120	2000	660	1680	3460	6340	3750	1490	604	1400	2290
26	920	1110	2010	660	1500	3360	7300	3630	1360	581	1070	2710
27	895	1100	2090	650	1350	3300	8600	3350	2460	540	845	2760
28	911	1090	2800	650	1200	3230	9470	3070	1990	502	698	2730
29	884	1040	3950	650	---	3190	9240	2820	2020	483	708	2900
30	853	1020	3950	650	---	3170	8650	2680	2150	479	919	4080
31	844	---	3600	650	---	3160	---	2570	---	480	1420	---
TOTAL	17818	34107	56044	35360	25185	102910	151870	132080	65320	33572	21372	88290
MEAN	575	1137	1808	1141	899	3320	5062	4261	2177	1083	689	2943
MAX	920	1640	3950	4000	2200	4850	9470	7970	2730	2040	3130	6870
MIN	274	775	543	650	620	1300	2820	2570	1360	479	298	1330
CFSM	.11	.21	.33	.21	.16	.61	.93	.78	.40	.20	.13	.54
IN.	.12	.23	.38	.24	.17	.70	1.04	.90	.45	.23	.15	.60
AC-FT	35340	67650	111200	70140	49950	204100	301200	262000	129600	66590	42390	175100

CAL YR 1984	TOTAL	2190844	MEAN	5986	MAX	35900	MIN	274	CFSM	1.10	IN.	14.95	AC-FT	4346000
WTR YR 1985	TOTAL	763928	MEAN	2093	MAX	9470	MIN	274	CFSM	.38	IN.	5.21	AC-FT	1515000

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, 4.2 mi upstream from Beaver Creek, and at mile 213.7.

DRAINAGE AREA.--5,823 mi².

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD (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 833 ft, contents, 74,000 acre-ft, surface area, 5,400 acres. Flood pool elevation at 890 ft, contents, 676,000 acre-ft, surface area, 16,700 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 655,000 acre-ft June 22, 1984; maximum elevation, 889.25 ft June 22, 1984; minimum daily contents, 45,000 acre-ft May 15, 1985; minimum elevation, 832.61 ft Jan. 19, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 56,000 acre-ft Nov. 13; maximum elevation, 839.39 ft Sept. 9; minimum daily contents, 45,000 acre-ft May 15; minimum elevation, 835.94 ft May 5.

Capacity table (elevation, in feet, and contents, in acre-feet)

805	360	833	74,000	884	570,000
810	2,300	840	116,000	890	676,000
815	7,700	850	190,000	900	938,000
820	19,000	860	278,000	910	1,320,000
830	58,600	880	511,000	915	1,530,000

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53600	55500	54800	47600	47200	46500	45700	45800	45500	45200	46300	52400
2	53600	55400	54600	47100	46500	46500	45700	45600	45200	45700	46400	52500
3	53700	55500	54800	46400	47100	47100	45900	45300	45100	45600	46400	52300
4	53800	55600	54300	47200	47100	48200	47000	45100	45400	45500	46600	52200
5	53900	55600	53600	47200	47200	47700	47800	45600	45500	45600	46700	52500
6	54000	55500	52700	47200	47200	47300	47400	46100	45600	45900	46800	52500
7	54100	55500	52300	47200	47300	47000	47300	46200	45700	46200	46900	53700
8	54200	55400	52100	47000	47400	46700	47100	45900	45600	46400	46900	55400
9	54200	55300	51300	46900	47400	46400	46400	45700	45400	46200	46900	55600
10	54400	55400	51500	47000	47400	47100	46000	45800	45400	46000	47000	55400
11	54500	55600	50900	47000	47500	47700	45600	46000	45700	46000	47000	54200
12	54500	55800	50900	46800	47500	49000	45800	46100	45900	46000	47000	52400
13	54500	56000	50800	46700	47500	48700	46200	45800	46000	46100	47000	51200
14	54600	55200	50000	46800	47600	47600	46100	45200	46100	46100	47100	51300
15	55000	55000	48800	46700	47600	46900	45900	45000	46200	46000	47200	51800
16	55300	54600	48200	46800	47600	46500	46400	45200	46500	45800	47200	52000
17	55300	54700	47200	47000	47600	46300	46800	45500	46500	45800	47400	51700
18	55300	54900	47100	47200	47800	46400	46800	45800	46200	46000	47400	51500
19	55100	55000	47700	47300	48000	46300	46200	46100	46100	46300	47500	51400
20	54800	55100	48300	47300	48100	46100	45800	46200	45900	46400	47500	51700
21	54800	55100	48900	47200	48100	46000	45600	45900	45700	46500	47700	52200
22	54900	55000	48400	47200	47400	46100	45600	45700	45700	46400	48200	52400
23	55000	54800	47600	47200	47400	46300	46300	45700	45700	46400	50300	51700
24	54900	54600	47200	47300	47800	46300	46800	45800	45700	46500	53100	51200
25	54900	54400	46700	47300	47600	46300	47300	46300	45500	46800	52900	51200
26	54900	54400	46500	47300	46900	46500	47600	46600	45700	46600	52100	51500
27	55000	54600	47000	47300	46000	46200	47600	46100	45600	46200	52000	51800
28	54900	54800	47500	47200	46500	46100	47600	45800	45800	45900	52000	52300
29	54900	54900	47700	47100	---	46000	47400	45800	45500	45900	52200	52900
30	54900	55000	48100	47300	---	46100	46600	45800	45300	46000	52200	52300
31	55500	---	48600	47200	---	46000	---	45700	---	46200	52200	---
MEAN	54600	55100	49900	47100	47400	46800	46500	45800	45700	46100	48500	52400
MAX	55500	56000	54800	47600	48100	49000	47800	46600	46500	46800	53100	55600
MIN	53600	54400	46500	46400	46000	46000	45600	45000	45100	45200	46300	51200

CAL YR 1984 MEAN 186000 MAX 655000 MIN 46500
WTR YR 1985 MEAN 48800 MAX 56000 MIN 45000

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA

LOCATION.--Lat 41°40'50", long 93°40'05", near center of 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, 2.3 mi upstream from Beaver Creek, and mile 211.4.

DRAINAGE AREA.--5,841 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 787.42 ft above NGVD (levels by U. S. Army Corps of Engineers). Prior to Aug. 6, 1970, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Saylorville Lake (Station 05481630) 2.3 mi upstream since Apr. 12, 1977. U. S. Army Corps of Engineers satellite telemeter at station.

COOPERATION.--Four discharge measurements provided by U. S. Army Corps of Engineers.

AVERAGE DISCHARGE.--24 years, 2,863 ft³/s, 6.66 in/yr, 2,074,000 acre-ft/yr; median of yearly mean discharges, 2,280 ft³/s, 5.3 in/yr, 1,650,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,400 ft³/s Apr. 10, 1965, gage height, 24.02 ft; minimum daily, 13 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,220 ft³/s Apr. 29, gage height, 12.80 ft; minimum daily discharge, 205 ft³/s Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	1730	1100	3330	491	1230	3140	8540	2660	2250	352	1290
2	278	1690	983	2970	487	1140	2850	7180	2650	1640	319	1960
3	283	1400	886	1480	484	1160	2730	6740	2390	2140	321	2210
4	296	1270	876	961	381	1900	2750	6430	2190	2130	319	1790
5	305	1250	1070	1680	300	2680	3590	5790	2190	1920	319	1290
6	310	1240	1540	1680	297	2630	5140	5520	2200	1630	318	1560
7	316	1240	1120	1670	308	2250	5640	5520	2200	1510	287	2230
8	322	1240	849	1660	296	1920	5990	5330	2220	1680	256	3730
9	331	1240	851	1350	290	1900	6290	4870	2230	1780	255	5780
10	338	1210	824	1130	290	1890	5790	4280	2000	1600	254	6220
11	344	1190	728	1120	294	2230	5390	4010	1800	1310	256	6170
12	429	1190	921	1130	291	3080	4730	3980	1810	1190	259	5810
13	489	1480	1110	986	279	4500	3950	3950	1830	1180	259	4870
14	494	1980	1500	875	274	5560	3930	3950	1970	1170	235	3180
15	576	2130	1800	875	270	5220	3720	3500	2170	1160	205	2350
16	766	2130	1810	765	269	4880	3060	2960	2260	988	220	2350
17	1030	1750	1800	699	272	4530	2600	2830	2540	768	223	2360
18	1160	1460	1360	690	276	4270	2900	2850	2760	699	227	2270
19	1270	1450	1030	650	285	4250	3230	2850	2780	696	230	1930
20	1360	1450	1300	1030	433	4240	2930	3130	2790	695	233	1670
21	1120	1360	1780	1060	1220	3960	2630	3330	2540	691	236	1430
22	917	1410	2410	763	2200	3720	2600	3340	2370	690	248	1750
23	1050	1400	2750	693	2180	3710	2590	3130	2160	696	248	2540
24	1190	1400	2240	676	2270	3690	3280	2970	2000	635	256	2670
25	1200	1380	1790	683	2610	3510	4440	2970	2000	507	1850	2390
26	1210	1240	1430	672	2330	3250	5510	3340	1790	803	1860	2350
27	1230	1130	1170	668	1670	3290	7010	3710	2050	987	1100	2540
28	1300	1110	1760	662	1390	3250	8440	3360	2400	775	873	2640
29	1390	1100	2380	560	---	3050	9010	2830	2380	492	798	2850
30	1400	1100	2690	503	---	3030	9180	2660	2370	403	919	3540
31	1410	---	3000	640	---	3150	---	2660	---	401	1020	---
TOTAL	24386	42350	46858	34311	22437	99070	135040	128510	67700	35216	14755	85720
MEAN	787	1412	1512	1107	801	3196	4501	4145	2257	1136	476	2857
MAX	1410	2130	3000	3330	2610	5560	9180	8540	2790	2250	1860	6220
MIN	272	1100	728	503	269	1140	2590	2660	1790	401	205	1290
AC-FT	48370	84000	92940	68060	44500	196500	267900	254900	134300	69850	29270	170000

CAL YR 1984	TOTAL	2365471	MEAN	6463	MAX	29600	MIN	191	AC-FT	4692000
WTR YR 1985	TOTAL	736353	MEAN	2017	MAX	9180	MIN	205	AC-FT	1461000

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD: Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1967 to September 1971, October 1971 to September 1980 (partial record station), October 1980 to current year.
WATER TEMPERATURES: October 1961 to September 1971, October 1971 to September 1980 (partial record station), October 1980 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1961 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis. During periods of partial ice cover, sediment samples are collected in open water channel.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,400 microsiemens Feb. 18, 1977; minimum daily, 90 microsiemens Feb. 19, 1971.
WATER TEMPERATURES: Maximum daily, 36.0°C June 29, 1971; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 5,400 mg/L May 14, 1970; minimum daily mean, 1 mg/L Jan. 8, 1965.
SEDIMENT LOADS: Maximum daily, 148,000 tons June 12, 1966; minimum daily, 1 ton Jan. 8, 1965, Feb. 8-12, 23, 1967.

EXTREMES FOR CURRENT YEAR:
SPECIFIC CONDUCTANCE: Maximum daily, 1050 microsiemens Jan. 31; minimum daily, 185 microsiemens Feb. 10.
WATER TEMPERATURES: Maximum daily, 28.0°C July 22; minimum daily, 0.0°C several days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 166 mg/L June 21; minimum daily mean, 7 mg/L Mar. 9, Sept. 19.
SEDIMENT LOADS: Maximum daily, 3,530 tons Apr. 28; minimum daily, 6.9 tons Feb. 19.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C.) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	610	---	680	---	---	---	---	605	700	600	---	700
2	---	620	---	---	825	830	---	620	640	---	---	680
3	610	---	---	---	---	---	480	---	620	---	670	680
4	---	610	---	---	---	780	---	---	---	570	670	680
5	605	---	740	---	---	---	480	640	700	670	670	680
6	605	---	---	750	240	---	---	---	660	660	670	680
7	---	---	---	---	---	---	---	---	---	630	---	---
8	590	---	740	640	---	620	---	650	620	680	660	---
9	---	620	---	---	---	---	---	680	630	---	670	690
10	605	---	660	---	185	610	480	680	---	660	660	690
11	600	660	---	640	---	---	580	695	---	640	660	---
12	---	---	680	780	---	---	560	680	640	---	660	560
13	600	---	---	740	610	---	---	620	640	620	700	560
14	---	---	---	---	---	---	480	680	---	600	---	560
15	---	---	---	---	810	---	---	685	640	580	700	560
16	600	---	---	---	---	---	---	680	580	580	700	---
17	---	---	660	---	260	---	580	680	680	560	700	570
18	620	680	---	---	---	---	595	---	650	600	700	580
19	---	---	---	---	---	---	580	700	660	560	700	---
20	---	---	---	---	730	---	---	700	620	560	700	580
21	610	680	---	650	---	---	580	---	---	660	---	560
22	---	---	---	---	840	---	580	520	630	595	700	580
23	---	---	---	620	---	---	580	630	---	670	---	680
24	610	---	680	---	740	---	---	---	---	680	700	---
25	---	---	---	660	---	---	---	---	640	---	700	680
26	620	640	---	---	---	---	600	640	620	---	---	---
27	---	---	---	710	710	---	620	---	---	670	---	650
28	---	630	630	---	---	---	620	680	680	660	700	---
29	---	645	---	---	---	---	---	600	---	680	---	---
30	620	---	---	---	---	490	640	700	---	670	---	---
31	---	---	630	1050	---	480	---	680	---	---	---	---

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C.) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	7.0	5.0	---	---	---	7.0	13.0	23.0	24.0	---	26.0
2	---	10.0	---	---	2.0	3.0	---	13.0	23.0	---	---	26.0
3	16.0	---	---	---	---	---	7.0	---	23.0	---	---	26.0
4	---	10.0	---	---	---	3.0	---	---	---	24.0	24.0	26.0
5	16.0	---	6.0	---	---	---	7.0	13.0	23.0	25.0	24.0	26.0
6	15.0	---	---	2.0	2.0	---	---	---	23.0	25.0	24.0	26.0
7	---	---	---	---	---	---	---	---	---	25.0	---	---
8	15.0	---	7.0	2.0	---	6.0	---	14.0	23.0	26.0	25.0	---
9	---	7.0	---	---	---	.0	---	14.0	23.0	---	25.0	25.0
10	16.0	.0	10.0	---	2.0	6.0	7.0	14.0	---	23.0	25.0	25.0
11	15.0	10.0	---	2.0	---	---	4.0	14.0	---	26.0	25.0	---
12	---	---	2.0	1.0	---	---	10.0	14.0	23.0	---	25.0	---
13	15.0	---	---	2.0	5.0	---	10.0	14.0	23.0	26.0	25.0	22.0
14	---	---	---	---	---	6.0	10.0	---	---	27.0	---	22.0
15	---	---	---	.0	5.0	---	---	17.0	22.0	27.0	25.0	22.0
16	15.0	---	---	---	---	---	---	19.0	22.0	27.0	25.0	---
17	---	---	2.0	---	5.0	6.0	10.0	22.0	22.0	27.0	25.0	20.0
18	14.0	5.0	---	---	---	6.0	10.0	22.0	22.0	25.0	25.0	22.0
19	---	---	---	---	---	6.0	10.0	---	22.0	27.0	25.0	---
20	---	---	---	---	1.5	6.0	---	20.0	22.0	27.0	25.0	20.0
21	14.0	6.0	---	2.0	---	---	11.0	---	---	27.0	---	22.0
22	---	---	---	---	5.0	---	12.0	22.0	23.0	28.0	23.0	---
23	---	---	---	2.0	---	5.0	12.0	22.0	---	25.0	---	19.0
24	14.0	---	2.0	---	2.0	---	---	---	---	25.0	22.0	---
25	---	---	---	2.0	---	---	---	---	26.0	---	22.0	19.0
26	13.0	5.0	---	---	---	5.0	13.0	22.0	24.0	---	---	---
27	---	---	---	2.0	3.0	5.0	13.0	---	---	24.0	---	17.0
28	---	3.0	2.0	---	---	5.0	13.0	22.0	---	25.0	24.0	---
29	---	5.0	---	---	---	5.0	---	22.0	24.0	24.0	24.0	---
30	11.0	---	---	---	---	6.0	15.0	23.0	---	24.0	---	17.0
31	---	---	2.0	2.0	---	7.0	---	23.0	---	---	---	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13	9.5	27	126	23	68	36	324	36	48	39	130
2	17	13	25	114	18	48	35	281	27	36	19	58
3	23	18	23	87	17	41	32	128	24	31	18	56
4	24	19	22	75	17	40	18	47	22	23	18	92
5	22	18	23	78	30	87	21	95	20	16	33	239
6	18	15	26	87	65	270	25	113	18	14	34	241
7	15	13	32	107	56	169	28	126	17	14	33	200
8	17	15	38	127	48	110	53	238	16	13	13	67
9	17	15	42	141	44	101	56	204	17	13	7	36
10	18	16	36	118	40	89	58	177	17	13	8	41
11	22	20	25	80	39	77	59	178	26	21	13	78
12	24	28	22	71	36	90	50	153	40	31	30	249
13	24	32	23	92	32	96	31	83	51	38	23	279
14	24	32	24	128	33	134	18	43	45	33	12	180
15	27	42	28	161	35	170	17	40	20	15	11	155
16	32	66	30	173	35	171	14	29	13	9.4	14	184
17	34	95	29	137	37	180	13	25	12	8.8	15	183
18	25	78	28	110	39	143	16	30	11	8.2	11	127
19	17	58	27	106	37	103	19	33	9	6.9	10	115
20	17	62	29	114	37	130	98	273	10	12	13	149
21	14	42	32	118	40	192	104	298	12	40	14	150
22	20	50	33	126	40	260	90	185	10	59	13	131
23	23	65	34	129	40	297	82	153	16	94	12	120
24	23	74	34	129	37	224	74	135	42	257	12	120
25	26	84	34	127	34	164	64	118	43	303	12	114
26	30	98	34	114	43	166	55	100	41	258	12	105
27	32	106	21	64	54	171	45	81	62	280	13	115
28	30	105	13	39	52	247	41	73	65	244	17	149
29	29	109	21	62	56	360	40	60	---	---	22	181
30	28	106	28	83	55	399	42	57	---	---	20	164
31	29	110	---	---	45	364	40	69	---	---	16	136
TOTAL	---	1613.5	---	3223	---	5161	---	3949	---	1939.3	---	4344

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA--Continued

WATER-QUALITY RECORDS

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14	119	26	600	30	215	93	565	12	11	66	230
2	20	154	30	582	20	143	121	536	13	11	32	169
3	22	162	16	291	36	232	106	612	13	11	17	101
4	22	163	12	208	34	201	80	460	17	15	19	92
5	18	174	14	219	24	142	56	290	16	14	18	63
6	25	347	16	238	29	172	28	123	21	18	19	80
7	27	411	18	268	29	172	16	65	20	15	21	126
8	24	388	26	374	14	84	18	82	19	13	22	222
9	19	323	65	855	25	151	20	96	14	9.6	22	343
10	37	578	70	809	45	243	35	151	15	10	35	588
11	43	626	64	693	56	272	25	88	16	11	38	633
12	38	485	35	376	64	313	27	87	14	9.8	32	502
13	25	267	10	107	48	237	48	153	17	12	26	342
14	14	149	23	245	42	223	44	139	17	11	29	249
15	16	161	34	321	50	293	45	141	16	8.9	28	178
16	20	165	49	392	39	238	28	75	17	10	26	165
17	35	246	41	313	91	624	12	25	17	10	27	172
18	34	266	25	192	119	887	24	45	18	11	12	74
19	30	262	25	192	123	923	32	60	20	12	7	36
20	24	190	21	177	140	1050	27	51	44	28	15	68
21	25	178	24	216	166	1140	49	91	53	34	42	162
22	25	175	36	325	148	947	56	104	51	34	38	180
23	37	259	31	262	144	840	25	47	48	32	24	165
24	46	407	24	192	138	745	44	75	54	37	28	202
25	73	875	20	160	123	664	56	77	128	639	29	187
26	129	1920	18	162	84	406	75	163	94	472	28	178
27	135	2560	24	240	45	249	76	203	77	229	32	219
28	155	3530	32	290	49	318	29	61	55	130	33	235
29	93	2260	67	512	52	334	14	19	45	97	34	262
30	16	397	114	819	68	435	13	14	59	146	34	325
31	---	---	98	704	---	---	11	12	74	204	---	---
TOTAL	---	18197	---	11334	---	12893	---	4710	---	2305.3	---	6548

TOTAL LOAD FOR YEAR: 76217.1 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 29...	11:40	7.0	1090	15	44	63
APR 11...	13:59	7.0	5240	82	1160	91
JUN 25...	10:35	26.0	2000	90	486	95
SEP 17...	12:45	24.0	2360	74	472	98

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
NOV							
29...	10:45	1090	5	1	2	6	29
APR							
11...	14:20	5240	5	2	7	24	61
JUN							
25...	11:30	2000	5	0	1	7	25
SEP							
17...	13:00	2360	5	0	1	8	53

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
NOV						
29...	49	66	83	93	100	--
APR						
11...	73	80	94	99	100	--
JUN						
25...	32	40	58	77	94	100
SEP						
17...	88	97	100	--	--	--

05481950 BEAVER CREEK NEAR GRIMES, IA

LOCATION.--Lat 41°41'18", long 93°44'08", in SW1/4 SW1/4 sec.35, T.80 N., R.25 W., Polk County, Hydrologic Unit 07100004, on right bank 6 ft upstream from bridge on Northwest 70th Avenue, 0.5 mi downstream from Little Beaver Creek, 2.5 mi east of Grimes and 6 mi upstream from mouth.

DRAINAGE AREA.--358 mi².

PERIOD OF RECORD.--April 1960 to current year.

REVISED RECORDS.--WDR IA-77-1: 1974 (P).

GAGE.--Water-stage recorder and concrete and steel sheeting broad-crested control. Datum of gage is 806.98 ft above NGVD. Prior to Aug. 31, 1966, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 6-22, Dec. 3-11, Jan. 2 to Mar. 7. Records good except those for estimated daily discharges, which are poor. U. S. Army Corps of Engineers gage-height telemeter at station.

COOPERATION.--One discharge measurement provided by U. S. Army Corps of Engineers.

AVERAGE DISCHARGE.--25 years, 209 ft³/s, 7.93 in/yr, 151,400 acre-ft/yr; median of yearly mean discharges, 200 ft³/s, 7.6 in/yr, 145,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,340 ft³/s May 19, 1974, gage height, 14.69 ft; no flow for several days in 1970 and 1971 and many days in 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	2215	*1,120	*7.66				

Minimum daily discharge, 0.04 ft³/s Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	300	87	204	66	480	127	126	53	43	.23	.39
2	15	386	84	180	65	380	144	118	51	36	.08	.51
3	13	267	54	160	65	420	268	105	142	30	.04	.51
4	12	198	60	140	65	320	369	97	123	25	.13	.39
5	11	159	80	125	64	260	333	92	86	20	.66	.23
6	8.8	134	100	115	64	450	236	94	70	18	.85	.26
7	20	126	110	108	64	570	225	91	63	14	1.2	.51
8	16	118	98	100	64	182	190	112	58	11	1.5	.44
9	9.0	115	92	100	64	169	157	106	51	11	1.5	.34
10	5.4	124	98	98	64	166	151	96	50	8.5	.66	.58
11	8.0	127	109	96	63	162	144	94	51	7.6	.94	1.2
12	6.4	124	108	94	62	150	130	98	56	6.4	1.1	1.8
13	15	122	104	92	62	135	124	90	63	6.4	1.2	1.4
14	45	118	77	90	62	127	116	88	68	5.4	.94	1.0
15	155	116	92	88	62	115	110	87	68	4.8	.85	.66
16	132	110	166	86	63	109	108	81	69	4.4	.66	.75
17	110	98	331	84	64	101	97	78	68	3.5	.66	.85
18	120	99	316	82	64	98	93	74	63	1.5	.58	.85
19	105	94	361	80	66	99	91	70	56	2.4	.66	.19
20	95	87	313	78	70	92	84	69	53	4.4	.51	.19
21	86	82	293	77	130	90	82	64	49	3.5	.51	.30
22	80	85	329	75	500	85	79	58	45	3.0	1.4	.66
23	74	84	283	74	450	95	83	58	45	1.8	1.4	5.1
24	70	83	251	72	420	102	99	63	39	1.2	.75	1.5
25	67	81	208	71	400	106	117	64	35	1.8	.66	1.2
26	67	80	271	70	380	110	129	61	29	.85	.66	1.2
27	64	82	313	70	360	115	142	64	38	.51	.66	.85
28	60	81	665	69	430	127	159	61	43	.75	.51	.75
29	56	80	423	68	---	120	151	58	62	.39	.51	1.8
30	55	82	361	68	---	109	138	57	55	.44	.44	5.1
31	54	---	271	66	---	127	---	57	---	.58	.44	---
TOTAL	1650.6	3842	6508	2980	4353	5771	4476	2531	1802	278.12	22.89	31.51
MEAN	53.2	128	210	96.1	155	186	149	81.6	60.1	8.97	.74	1.05
MAX	155	386	665	204	500	570	369	126	142	43	1.5	5.1
MIN	5.4	80	54	66	62	85	79	57	29	.39	.04	.19
CFSM	.15	.36	.59	.27	.43	.52	.42	.23	.17	.03	.00	.00
IN.	.17	.40	.68	.31	.45	.60	.47	.26	.19	.03	.00	.00
AC-FT	3270	7620	12910	5910	8630	11450	8880	5020	3570	552	45	63

CAL YR 1984	TOTAL	139464.8	MEAN	381	MAX	3140	MIN	5.3	CFSM	1.06	IN.	14.49	AC-FT	276600
WTR YR 1985	TOTAL	34246.12	MEAN	93.8	MAX	665	MIN	.04	CFSM	.26	IN.	3.56	AC-FT	67930

05482135 NORTH RACCOON RIVER NEAR NEWELL, IA

LOCATION.--Lat 42°36'16", long 95°02'42", in NE1/4 NW1/4 sec.24, T.90 N., R.36 W., Buena Vista County, Hydrologic Unit 07100005, on left bank 40 ft downstream from bridge on State Highway 7, 0.8 mi upstream from Outlet Creek, 2.2 mi west of Newell, and at mile 398.6 upstream from mouth of Des Moines River.

DRAINAGE AREA.--233 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1235.50 ft above NGVD.

REMARKS.--Estimated daily discharges: Oct. 7-8, Nov. 16 to Mar. 6. Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 29	0345	ice jam	*12.94	May 15	0800	*776	12.87

Minimum discharge, 3.3 ft³/s Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	17	24	67	13	33	86	281	136	149	14	11
2	26	14	23	41	13	35	100	254	129	122	13	8.6
3	30	17	23	37	13	44	242	226	121	100	13	7.3
4	29	19	22	33	13	108	260	210	118	86	14	6.0
5	29	15	22	30	13	132	264	188	113	71	13	16
6	28	13	22	28	13	111	213	171	107	63	11	26
7	31	14	23	27	13	136	176	160	102	57	9.4	17
8	29	15	24	26	13	290	153	152	99	51	8.3	12
9	28	23	25	24	12	242	140	150	91	48	8.2	8.5
10	27	128	25	22	12	159	131	144	85	43	8.8	8.3
11	27	85	25	21	12	131	120	141	89	41	8.1	7.9
12	27	60	26	20	12	94	108	136	87	38	9.0	7.3
13	23	60	26	19	13	77	109	119	84	36	13	10
14	29	59	26	18	13	64	105	233	85	35	8.3	12
15	46	52	26	17	13	55	95	727	126	31	7.1	12
16	41	45	68	16	13	54	89	513	134	28	6.1	12
17	40	41	150	16	13	48	90	375	104	26	8.7	11
18	44	37	130	14	14	45	87	306	91	26	10	9.0
19	59	41	88	13	14	46	81	265	80	33	6.6	7.8
20	37	48	78	12	14	41	78	247	75	26	5.5	9.3
21	31	78	74	13	14	42	120	227	71	23	4.9	11
22	23	45	76	13	14	44	264	208	64	22	5.5	11
23	19	35	74	13	14	50	357	199	57	21	10	13
24	18	32	76	13	14	63	326	268	53	22	13	15
25	18	30	76	13	14	57	260	260	49	24	7.2	15
26	14	28	80	13	22	59	471	225	51	19	6.1	16
27	20	27	90	13	24	71	610	191	359	17	4.2	16
28	16	26	118	13	28	88	448	172	392	16	3.6	16
29	14	25	192	13	---	82	351	167	248	15	30	23
30	15	24	170	13	---	73	297	162	185	15	26	77
31	13	---	100	13	---	70	---	152	---	15	15	---
TOTAL	856	1153	2002	644	403	2644	6231	7229	3585	1319	320.6	432.0
MEAN	27.6	38.4	64.6	20.8	14.4	85.3	208	233	120	42.5	10.3	14.4
MAX	59	128	192	67	28	290	610	727	392	149	30	77
MIN	13	13	22	12	12	33	78	119	49	15	3.6	6.0
CFSM	.12	.16	.28	.09	.06	.37	.89	.00	.51	.18	.04	.06
IN.	.14	.18	.32	.10	.06	.42	.99	1.15	.57	.21	.05	.07
AC-FT	1700	2290	3970	1280	799	5240	12360	14340	7110	2620	636	857

CAL YR 1984	TOTAL	100653.9	MEAN	275	MAX	2800	MIN	3.9	CFSM	1.18	IN.	16.04	AC-FT	199600
WTR YR 1985	TOTAL	26818.6	MEAN	73.5	MAX	727	MIN	3.6	CFSM	.31	IN.	4.27	AC-FT	53190

05482170 BIG CEDAR CREEK NEAR VARINA, IA

LOCATION.--Lat 42°41'16", long 94°47'52", in NE1/4 NE1/4 sec.24, T.91 N., R.34 W., Pocahontas County, Hydrologic Unit 07100006, on left bank 2 ft downstream from bridge on county highway N33, 2.0 mi downstream from Drainage ditch 21, 3.5 mi upstream from Drainage ditch 74, and 5.5 mi northeast of Varina.

DRAINAGE AREA.--80.0 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,225.12 ft above NGVD.

REMARKS.--Estimated daily discharges: Nov. 16 to Mar. 12. Records good, except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--26 years, 42.0 ft³/s, 7.13 in/yr, 30,430 acre-ft/yr; median of yearly mean discharges, 34 ft³/s, 5.8 in/yr, 24,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,080 ft³/s Aug. 31, 1962, gage height, 13.68 ft; maximum gage height, 16.29 ft Mar. 24, 1979, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	2015	ice jam	*7.24	May 24	0500	* 302	5.90

No flow Jan. 16-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	1.4	1.3	14	.17	27	29	86	32	45	2.9	4.4
2	.43	2.4	1.2	9.0	.35	26	30	78	30	37	2.3	3.8
3	1.3	.95	1.2	7.6	.70	38	89	70	28	31	2.6	3.2
4	1.1	1.1	1.1	6.8	1.5	45	108	64	27	27	2.9	2.9
5	.41	.78	1.2	6.5	2.6	72	113	56	26	22	2.2	12
6	.48	.72	1.3	5.6	5.2	73	82	51	25	18	1.8	13
7	.59	.70	1.4	4.7	6.2	98	65	49	24	16	1.5	7.5
8	.60	.70	5.6	3.9	6.9	180	55	48	23	13	1.3	4.8
9	.47	6.0	7.6	3.0	7.8	195	52	47	21	12	1.3	3.6
10	.44	30	4.2	2.0	8.8	70	51	46	21	10	2.0	3.2
11	.44	14	2.8	1.2	9.9	55	47	46	23	9.6	1.3	3.0
12	.60	8.9	1.6	.80	11	43	44	45	23	9.5	2.3	3.1
13	.38	7.0	1.6	.52	11	39	41	40	23	8.7	3.0	3.7
14	.68	6.4	1.5	.29	12	32	39	39	25	8.0	1.7	3.1
15	6.0	5.0	2.2	.17	9.6	28	39	41	41	7.0	1.3	2.5
16	3.7	5.6	18	.00	10	24	35	43	39	6.2	1.1	2.3
17	3.6	4.6	40	.00	11	20	33	43	30	5.6	2.2	2.3
18	3.0	3.5	47	.00	12	19	31	43	27	5.6	1.7	2.0
19	7.1	3.6	31	.00	17	18	29	43	23	7.3	.99	1.9
20	3.8	3.5	22	.00	21	15	29	43	21	5.0	1.7	15
21	2.1	3.8	18	.00	23	14	75	44	20	4.9	1.8	7.6
22	1.5	4.2	15	.00	22	12	112	44	18	4.7	8.0	6.8
23	1.1	3.5	14	.00	19	14	132	46	17	4.2	12	7.8
24	.90	3.3	11	.00	18	17	112	204	15	7.5	8.8	8.9
25	1.1	3.7	10	.00	19	14	87	111	15	5.3	4.6	8.7
26	1.3	3.6	9.9	.00	22	14	177	90	15	3.6	3.4	8.9
27	1.2	3.1	10	.00	26	20	210	72	149	3.2	2.1	8.8
28	.95	2.4	56	.00	30	23	151	57	133	3.0	4.4	9.4
29	.78	1.9	50	.00	---	21	120	50	81	2.7	10	22
30	.68	1.4	25	.00	---	18	101	44	57	2.9	5.5	48
31	.68	---	16	.12	---	13	---	38	---	3.2	3.8	---
TOTAL	47.80	137.75	428.7	66.20	343.72	1297	2318	1821	1052	348.7	102.49	234.2
MEAN	1.54	4.59	13.8	2.14	12.3	41.8	77.3	58.7	35.1	11.2	3.31	7.81
MAX	7.1	30	56	14	30	195	210	204	149	45	12	48
MIN	.38	.70	1.1	.00	.17	12	29	38	15	2.7	.99	1.9
CFSM	.02	.06	.17	.03	.15	.52	.97	.73	.44	.14	.04	.10
IN.	.02	.06	.20	.03	.16	.60	1.08	.85	.49	.16	.05	.11
AC-FT	95	273	850	131	682	2570	4600	3610	2090	692	203	465

CAL YR 1984	TOTAL	38987.66	MEAN	107	MAX	1260	MIN	.38	CFSM	1.34	IN.	18.13	AC-FT	77330
WTR YR 1985	TOTAL	8197.56	MEAN	22.5	MAX	210	MIN	.00	CFSM	.28	IN.	3.81	AC-FT	16260

05482300 NORTH RACCOON RIVER NEAR SAC CITY, IA

LOCATION.--Lat 42°20'28", long 94°59'05", in NE1/4 NW1/4 sec.24, T.87 N., R.36 W., Sac County, Hydrologic Unit 07100006, on right bank 15 ft downstream from bridge on county highway, 0.2 mi upstream from Indian Creek, 0.9 mi downstream from Drainage ditch 73, 5.6 mi south of Sac City, and at mile 365.9 upstream from mouth of Des Moines River.

DRAINAGE AREA.--713 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,144.60 ft above NGVD (levels by Iowa Natural Resources Council).

REMARKS.--Estimated daily discharges: Nov. 17 to Mar. 9, Apr. 3-16, May 7-16, and June 8-13. Records good except estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--27 years, 352 ft³/s, 6.70 in/yr, 255,000 acre-ft/yr; median of yearly mean discharges, 270 ft³/s, 5.1 in/yr, 196,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s Mar. 23, 1979, gage height, 18.02 ft; maximum gage height, 18.12 ft Sept. 1, 1962; no flow Jan. 30 to Feb. 4, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1954, reached a stage of 15.61 ft, from floodmark, discharge, 7,000 ft³/s .

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 15	unknown	a*1,800	a*9.12	No other peak greater than base discharge.			

a Estimated.
Minimum discharge, 21 ft³/s Aug. 11, 22-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	54	56	280	52	110	201	816	358	381	35	49
2	43	53	50	275	52	120	285	708	357	313	35	41
3	45	53	47	250	50	130	660	602	323	258	34	38
4	48	54	44	220	49	240	780	547	300	217	33	35
5	49	54	42	195	48	310	860	510	291	184	33	77
6	52	52	41	182	48	310	720	455	276	159	30	70
7	51	52	41	170	47	220	640	440	262	144	27	85
8	58	50	41	150	46	210	550	415	250	131	26	57
9	55	68	42	140	45	456	490	390	230	125	25	48
10	50	174	43	129	45	496	440	380	226	114	24	44
11	51	281	44	119	45	408	410	360	217	103	23	43
12	56	182	45	120	45	312	380	350	215	96	23	44
13	56	143	48	114	45	260	355	310	210	92	27	49
14	55	126	55	108	45	222	330	496	205	89	30	53
15	124	117	60	102	45	193	310	1810	226	83	29	52
16	130	95	172	98	45	177	285	1230	310	77	26	51
17	119	89	245	96	45	171	327	910	284	69	28	47
18	107	80	270	92	45	157	287	720	253	64	28	47
19	129	76	220	80	46	152	268	620	227	68	25	43
20	131	78	180	72	46	144	253	570	193	76	23	49
21	100	82	174	66	47	135	242	530	197	63	22	65
22	86	82	150	64	47	128	408	480	172	56	22	59
23	73	80	135	63	48	137	660	460	158	50	24	62
24	61	78	113	62	48	147	736	654	150	48	33	63
25	60	76	120	60	50	163	622	764	136	51	34	64
26	61	78	112	58	58	157	916	637	137	57	29	66
27	59	72	120	57	98	188	1800	550	313	44	27	73
28	57	66	380	56	108	225	1450	470	1010	40	25	83
29	55	61	780	55	---	233	1100	420	707	38	67	95
30	51	59	580	54	---	215	910	409	499	36	86	154
31	52	---	330	52	---	201	---	389	---	32	66	---
TOTAL	2165	2665	4780	3639	1438	6727	17675	18402	8692	3358	999	1806
MEAN	69.8	88.8	154	117	51.4	217	589	594	290	108	32.2	60.2
MAX	131	281	780	280	108	496	1800	1810	1010	381	86	154
MIN	41	50	41	52	45	110	201	310	136	32	22	35
CFSM	.10	.12	.22	.16	.07	.30	.83	.83	.41	.15	.05	.08
IN.	.11	.14	.25	.19	.08	.35	.92	.96	.45	.18	.05	.09
AC-FT	4290	5290	9480	7220	2850	13340	35060	36500	17240	6660	1980	3580

CAL YR 1984	TOTAL	314911	MEAN	860	MAX	6360	MIN	30	CFSM	1.21	IN.	16.43	AC-FT	624600
WTR YR 1985	TOTAL	72346	MEAN	198	MAX	1810	MIN	22	CFSM	.28	IN.	3.77	AC-FT	143500

05482315 BLACKHAWK LAKE AT LAKE VIEW, IA

LOCATION.--Lat 42°18'15", long 95°02'30", in NW1/4 SE1/4 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 mi².

PERIOD OF RECORD.--April 1970 to September 1975, April 1978 to current year.

GAGE.--Water-stage reacorder. Datum of gage is 1,218.50 ft above NGVD and 2.00 ft below crest of spillway of dam at outlet. Prior to June 25, 1970, nonrecording gage at lake outlet.

REMARKS.--Lake is formed by concrete dam with ungated overflow spillway at elevation 1,220.50 ft above NGVD. Lake is used for conservation and recreation. Area of lake is approximately 957 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 4.08 ft Mar. 20, 1979; minimum, 0.02 ft Sept. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 2.62 ft Dec. 30; minimum, 1.44 ft Aug. 28.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.52	1.89	2.11	2.52	2.09	2.15	2.26	2.40	2.20	2.09	1.67	1.65
2	1.50	1.92	2.09	2.47	2.09	2.15	2.25	2.39	2.20	2.07	1.66	1.65
3	1.49	1.92	2.10	2.43	2.08	2.18	2.27	2.37	2.19	2.06	1.66	1.63
4	1.50	1.90	2.10	2.39	2.07	2.19	2.31	2.33	2.18	2.02	1.64	1.63
5	1.51	1.90	2.11	2.37	2.08	2.20	2.34	2.36	2.18	2.00	1.63	1.67
6	1.55	1.90	2.10	2.35	2.07	2.20	2.35	2.37	2.18	1.98	1.62	1.66
7	1.55	1.92	2.10	2.34	2.06	2.19	2.33	2.36	2.17	1.95	1.61	1.66
8	1.60	1.90	2.09	2.31	2.05	2.19	2.32	2.34	2.15	1.94	1.60	1.65
9	1.63	1.98	2.13	2.30	2.05	2.19	2.33	2.32	2.12	1.92	1.57	1.62
10	1.64	2.01	2.14	2.30	2.05	2.18	2.31	2.31	2.15	1.90	1.55	1.61
11	1.64	2.07	2.14	2.28	2.04	2.18	2.30	2.30	2.18	1.87	1.55	1.61
12	1.64	2.10	2.15	2.26	2.04	2.19	2.28	2.24	2.18	1.90	1.54	1.62
13	1.64	2.12	2.14	2.25	2.03	2.17	2.25	2.26	2.17	1.88	1.53	1.64
14	1.66	2.13	2.20	2.24	2.03	2.16	2.25	2.31	2.18	1.86	1.53	1.65
15	1.75	2.06	2.23	2.22	2.02	2.16	2.24	2.32	2.19	1.85	1.53	1.64
16	1.82	2.08	2.30	2.21	2.02	2.15	2.25	2.32	2.18	1.83	1.53	1.64
17	1.85	2.09	2.34	2.20	2.01	2.15	2.24	2.33	2.14	1.81	1.55	1.63
18	1.86	2.09	2.38	2.20	2.01	2.15	2.22	2.32	2.11	1.78	1.54	1.63
19	1.86	2.09	2.39	2.19	2.01	2.14	2.22	2.31	2.10	1.79	1.52	1.62
20	1.87	2.10	2.38	2.17	2.03	2.14	2.20	2.32	2.11	1.78	1.51	1.62
21	1.87	2.10	2.42	2.16	2.05	2.14	2.21	2.31	2.07	1.77	1.51	1.62
22	1.87	2.09	2.41	2.15	2.09	2.13	2.20	2.29	2.04	1.75	1.50	1.61
23	1.86	2.10	2.38	2.14	2.13	2.14	2.20	2.30	2.04	1.74	1.49	1.60
24	1.87	2.10	2.36	2.14	2.14	2.14	2.19	2.32	2.04	1.74	1.48	1.61
25	1.89	2.13	2.34	2.13	2.14	2.17	2.24	2.31	2.04	1.75	1.47	1.62
26	1.91	2.12	2.31	2.12	2.14	2.16	2.32	2.30	2.02	1.74	1.46	1.61
27	1.89	2.10	2.30	2.11	2.14	2.19	2.37	2.28	2.10	1.72	1.45	1.61
28	1.90	2.11	2.42	2.11	2.14	2.20	2.41	2.27	2.11	1.70	1.45	1.64
29	1.90	2.11	2.59	2.10	---	2.19	2.42	2.25	2.10	1.68	1.63	1.69
30	1.89	2.11	2.61	2.10	---	2.21	2.42	2.23	2.10	1.68	1.67	1.71
31	1.90	---	2.57	2.10	---	2.27	---	2.18	---	1.68	1.67	---
MEAN	1.74	2.04	2.27	2.24	2.07	2.17	2.28	2.31	2.13	1.85	1.56	1.63
MAX	1.91	2.13	2.61	2.52	2.14	2.27	2.42	2.40	2.20	2.09	1.67	1.71
MIN	1.49	1.89	2.09	2.10	2.01	2.13	2.19	2.18	2.02	1.68	1.45	1.60

CAL YR 1984 MEAN 2.30 MAX 3.31 MIN 1.49
WTR YR 1985 MEAN 2.02 MAX 2.61 MIN 1.45

05482500 NORTH RACCOON RIVER NEAR JEFFERSON, IA

LOCATION.--Lat 41°59'17", long 94°22'36", in SW1/4 NW1/4 sec. 20, T.83 N., R.30 W., Greene County, Hydrologic Unit 07100006, on right bank 5 ft downstream from bridge on State Highway 4, 0.1 mi downstream from Drainage ditch 33 and 40, 1.9 mi south of Jefferson, 4.2 mi upstream from Hardin Creek, and at mile 292.5 upstream from mouth of Des Moines River.

DRAINAGE AREA.--1,619 mi².

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. 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.--Estimated daily discharge: Nov. 23 to March 4, 7-11. Records good except for estimated daily discharges, which are poor. U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Two discharge measurements furnished by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--45 years, 732 ft³/s, 6.14 in/yr, 530,300 acre-ft/yr; median of yearly mean discharges, 600 ft³/s, 5.0 in/yr, 435,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,100 ft³/s June 23, 1947, gage height, 22.3 ft; minimum daily, 0.6 ft³/s Oct. 5, 1956.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 31	0600	*2,800	a*13.10				

(a) Ice jam.
Minimum discharge, 68 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	207	180	1270	120	420	455	1540	761	683	115	110
2	143	196	170	950	118	450	446	1330	754	537	112	104
3	141	192	158	880	115	510	563	1190	766	466	108	90
4	153	189	150	830	112	600	940	1080	690	412	106	83
5	157	185	150	780	109	664	1350	1020	646	369	104	86
6	164	184	150	750	106	625	1300	1120	618	333	102	81
7	175	184	150	700	104	620	1190	990	602	302	97	89
8	173	183	150	660	103	610	1050	898	555	273	94	104
9	162	185	150	630	101	600	923	838	543	256	91	100
10	155	230	150	600	100	600	857	801	527	245	87	92
11	165	268	150	560	99	580	806	779	563	244	86	86
12	168	331	154	500	99	568	754	782	573	232	77	84
13	156	373	160	460	98	520	716	756	553	222	73	88
14	167	335	165	410	100	461	682	747	540	215	74	88
15	226	307	171	365	100	423	648	743	534	207	75	83
16	236	282	182	300	100	397	629	1040	540	194	80	86
17	291	268	200	255	100	374	607	1600	528	189	86	86
18	301	257	230	220	105	356	588	1360	547	183	81	82
19	271	248	290	190	150	342	542	1180	512	226	74	79
20	269	241	375	190	230	331	535	1080	475	208	73	83
21	271	227	320	180	400	323	562	1010	452	176	71	102
22	264	219	275	175	590	315	537	942	432	166	72	95
23	246	220	245	169	560	314	562	891	393	157	77	100
24	230	220	210	160	520	317	759	906	390	147	78	106
25	218	220	190	152	480	327	941	1040	369	146	78	112
26	209	219	175	148	450	346	1040	1300	353	139	79	108
27	204	215	160	142	410	366	1570	1200	353	130	83	111
28	203	210	300	140	420	381	2530	1060	361	128	83	118
29	192	203	1300	133	---	431	2200	963	556	124	86	131
30	188	195	1890	128	---	465	1790	887	872	120	87	141
31	191	---	1810	125	---	484	---	815	---	116	101	---
TOTAL	6230	6993	10510	13152	6099	14120	28072	31888	16358	7545	2690	2908
MEAN	201	233	339	424	218	455	936	1029	545	243	86.8	96.9
MAX	301	373	1890	1270	590	664	2530	1600	872	683	115	141
MIN	141	183	150	125	98	314	446	743	353	116	71	79
CFSM	.12	.15	.21	.26	.13	.28	.58	.64	.34	.15	.05	.06
IN.	.14	.16	.24	.30	.14	.32	.65	.73	.38	.17	.06	.07
AC-FT	12360	13870	20850	26090	12100	28010	55680	63250	32450	14970	5340	5770

CAL YR 1984	TOTAL	703696	MEAN	1923	MAX	14500	MIN	141	CFSM	1.19	IN.	16.17	AC-FT	1396000
WTR YR 1985	TOTAL	146565	MEAN	402	MAX	2530	MIN	71	CFSM	.25	IN.	3.37	AC-FT	290700

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IA

LOCATION.--Lat 42°06'27", long 94°22'12", in SE1/4 SW1/4 sec. 5, T.84 N., R.30 W., Greene County, Hydrologic Unit 07100006, on left bank 35 ft upstream from bridge on county highway E26, 1.6 mi upstream from small left-bank tributary, 4.4 mi upstream from mouth, and 6.5 mi southeast of Churdan.

DRAINAGE AREA.--24.0 mi².

PERIOD OF RECORD.--July 1952 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1708: 1954-55, 1957 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,050.90 ft above NGVD.

REMARKS.--Estimated daily discharges: Jan. 18-24, Feb. 17-22 and June 2. Records good except for estimated daily discharges, which are poor. Small diversion for irrigation upstream from station.

AVERAGE DISCHARGE.--33 years, 10.4 ft³/s, 5.88 in/yr, 7,535 acre-ft/yr; median of yearly mean discharges, 7.7 ft³/s, 4.4 in/yr, 5,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 413 ft³/s May 5, 1960, gage height, 8.92 ft, from rating curve extended above 330 ft³/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 2	unknown	*110	4.2				

No flow Oct. 1-3, Jan. 18-24, Sept 1-4, 7-13 and 20-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.2	.60	8.8	.40	3.5	4.9	9.1	12	4.1	.40	.00
2	.00	1.7	.59	2.8	.36	3.2	6.5	7.7	80	3.7	.33	.00
3	.00	1.7	.62	2.3	.33	4.8	16	7.1	33	3.5	.33	.00
4	.01	1.2	.56	2.1	.31	13	14	7.0	18	3.3	.35	.00
5	.02	1.3	.57	1.8	.35	12	10	23	14	3.0	.34	.07
6	.06	1.2	.99	1.8	.37	5.9	7.6	36	11	2.8	.27	.02
7	.10	.87	1.0	1.5	.29	3.5	6.0	23	9.4	2.6	.22	.00
8	.09	.84	.61	2.2	.28	3.9	4.9	18	8.6	2.4	.19	.00
9	.09	.97	.56	1.4	.28	4.3	4.7	16	6.7	2.3	.37	.00
10	.08	.90	.48	1.3	.27	4.3	5.5	14	7.6	1.9	.19	.00
11	.09	1.1	.58	1.4	.25	3.6	6.8	13	38	1.7	.09	.00
12	.10	1.1	.58	2.3	.25	2.4	6.2	12	26	1.7	.10	.00
13	.09	1.1	.44	2.2	.23	2.2	6.0	10	21	1.6	.11	.00
14	.24	1.2	1.8	1.3	.20	2.0	5.4	9.9	18	1.4	.13	.02
15	2.0	.94	.69	1.3	.20	1.7	5.2	8.7	15	1.3	.11	.04
16	2.1	.85	3.9	1.7	.28	1.6	4.4	7.7	13	1.2	.14	.06
17	1.7	.93	3.8	1.6	11	1.5	4.4	7.0	11	1.1	.14	.07
18	1.3	.85	2.8	.00	27	1.5	4.2	7.1	9.8	1.0	.12	.06
19	.98	.77	2.4	.00	22	1.5	3.2	6.8	8.6	1.9	.11	.10
20	.71	.74	2.0	.00	22	1.4	2.2	5.8	8.6	2.3	.10	.00
21	.58	.77	2.1	.00	23	1.4	2.0	5.3	8.0	1.8	.08	.00
22	.52	.84	2.3	.00	14	1.5	2.2	5.3	6.4	1.7	.10	.00
23	.40	.81	1.7	.00	5.9	2.0	2.3	5.4	6.0	1.5	.12	.11
24	.38	.83	2.1	.00	4.2	2.3	2.6	6.0	5.5	1.5	.11	.17
25	.45	.82	1.4	3.0	3.5	2.2	3.6	7.2	5.3	1.4	.05	.24
26	.47	1.8	1.5	2.3	3.4	2.7	14	7.4	5.6	1.1	.00	.23
27	.85	.80	4.3	2.1	3.5	2.9	17	6.3	5.9	.84	.02	.27
28	1.1	.73	33	1.2	4.1	3.2	15	5.9	5.3	.68	.07	.43
29	.98	.74	14	1.3	---	2.8	12	6.2	5.0	.48	.11	.13
30	.73	.64	5.9	.63	---	2.8	11	6.3	4.6	.56	.08	.21
31	.94	---	4.0	.50	---	3.7	---	5.2	---	.56	.02	---
TOTAL	17.16	31.24	97.87	48.83	148.25	105.3	209.8	315.4	426.9	56.92	4.90	2.23
MEAN	.55	1.04	3.16	1.58	5.29	3.40	6.99	10.2	14.2	1.84	.16	.07
MAX	2.1	2.2	33	8.8	27	13	17	36	80	4.1	.40	.43
MIN	.00	.64	.44	.00	.20	1.4	2.0	5.2	4.6	.48	.00	.00
CFSM	.02	.04	.13	.07	.22	.14	.29	.42	.59	.08	.01	.00
IN.	.03	.05	.15	.08	.23	.16	.33	.49	.66	.09	.01	.00
AC-FT	34	62	194	97	294	209	416	626	847	113	9.7	4.4

CAL YR 1984	TOTAL	8849.90	MEAN	24.2	MAX	295	MIN	.00	CFSM	1.01	IN.	13.72	AC-FT	17550
WTR YR 1985	TOTAL	1464.80	MEAN	4.01	MAX	80	MIN	.00	CFSM	.17	IN.	2.27	AC-FT	2910

05483450 MIDDLE RACCOON RIVER NEAR BAYARD, IA

LOCATION.--Lat 41°46'43", long 94°29'33", in SW1/4 SW1/4 sec. 32, T.81 N., R.31 W., Guthrie County, Hydrologic Unit 07100007, on left bank 110 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, 10.4 mi upstream from dam at Lake Panorama, and at mile 279.2 upstream from mouth of Des Moines River.

DRAINAGE AREA.--375 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1979 to current year. Occasional low-flow measurements, water years 1976,77. Contracted opening measurement of July 3, 1973 flood.

GAGE.--Water-stage recorder. Datum of gage is 1,040.00 ft above NGVD. Prior to June 23, 1979, nonrecording gage on downstream side of State Highway 25 bridge.

REMARKS.--Estimated daily discharges: Dec. 3 to Feb. 22, and Feb. 28 to Mar. 8. Records good, except for estimated daily discharges, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--6 years, 221 ft³/s, 8.00 in/yr 160,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,190 ft³/S July 2, 1983, gage height, 19.79 ft, maximum gage height, 19.99 ft, Apr. 30, 1984 minimum daily, 5.5 ft³/s, June 13, 14, 1981.

EXTREMES OUTSIDE PEIROD OF RECORD.--Flood of July 3, 1973 reached a stage of 21.63 ft, from contracted opening measurement, discharge, 14,600 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	----	*1,170	a *14.10				

a ice jam
Minimum discharge, 22 ft³/s Sept. 18,19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	309	96	335	80	195	155	275	147	83	59	31
2	39	180	97	360	80	160	173	256	145	80	56	28
3	40	142	105	630	80	135	304	237	137	75	52	25
4	46	131	135	450	80	190	403	223	133	73	51	25
5	45	112	165	340	80	150	343	221	133	72	45	36
6	44	103	155	250	80	94	280	260	131	69	36	46
7	67	103	170	190	80	125	259	258	127	67	34	32
8	59	101	180	170	78	118	231	234	127	66	35	26
9	46	98	168	155	77	119	210	213	122	61	32	24
10	47	423	155	145	76	133	204	210	110	60	33	24
11	83	260	130	135	74	145	193	209	182	57	33	25
12	59	205	115	128	73	145	180	211	224	57	31	25
13	52	187	90	120	72	144	183	185	175	58	33	29
14	60	173	105	110	71	145	177	188	162	59	33	31
15	278	157	130	105	70	136	167	204	176	54	36	31
16	338	138	250	100	71	139	165	202	177	49	32	28
17	255	136	640	96	86	141	146	193	146	49	32	26
18	192	134	560	92	100	141	142	184	129	49	34	24
19	175	127	520	88	115	145	138	181	124	102	33	23
20	160	118	480	84	250	143	138	176	119	131	30	28
21	129	115	480	82	450	141	135	171	115	69	29	105
22	119	117	450	82	1100	143	131	161	109	59	30	44
23	96	115	410	82	754	151	154	164	104	54	32	42
24	90	110	380	82	518	167	167	192	104	53	35	42
25	89	108	380	82	406	165	160	222	95	86	33	44
26	90	104	380	81	335	161	232	190	98	170	29	40
27	90	102	600	81	244	163	387	223	129	71	28	34
28	107	97	1020	80	175	174	391	216	114	58	27	32
29	89	98	800	80	---	175	331	166	92	54	28	46
30	89	100	430	80	---	169	294	165	86	58	37	64
31	122	---	340	80	---	170	---	167	---	63	37	---
TOTAL	3235	4403	10116	4975	5755	4622	6573	6357	3972	2166	1105	1060
MEAN	104	147	326	160	206	149	219	205	132	69.9	35.6	35.3
MAX	338	423	1020	630	1100	195	403	275	224	170	59	105
MIN	39	97	90	80	70	94	131	161	86	49	27	23
CFSM	.28	.39	.87	.43	.55	.40	.58	.55	.35	.19	.09	.09
IN.	.32	.44	1.00	.49	.57	.46	.65	.63	.39	.21	.11	.11
AC-FT	6420	8730	20070	9870	11420	9170	13040	12610	7880	4300	2190	2100

CAL YR 1984	TOTAL	155361	MEAN	424	MAX	4200	MIN	38	CFSM	1.13	IN.	15.41	AC-FT	308200
WTR YR 1985	TOTAL	54339	MEAN	149	MAX	1100	MIN	23	CFSM	.40	IN.	5.39	AC-FT	107800

05483450 MIDDLE RACCOON RIVER NEAR BAYARD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1979 to current year (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1979 to current year (discontinued).
WATER TEMPERATURES: April 1979 to current year (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: April 1979 to current year (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, 880 microsiemens Mar. 8, 1984; minimum daily, 230 microsiemens Feb. 22, 1982.
WATER TEMPERATURES: Maximum daily, 32.0C Aug. 5, 1979; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 9,440 mg/L June 27, 1979; minimum daily mean, 1 mg/L Jan. 29, 1982.
SEDIMENT LOADS: Maximum daily, 62,000 tons July 2, 1983; minimum daily, 0.06 tons Jan. 29, 1982.

EXTREMES FOR CURRENT YEAR:
SPECIFIC CONDUCTANCE: Maximum daily, 840 microsiemens Mar. 8; minimum daily, 280 microsiemens Feb. 21.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 6-7; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,580 mg/L Nov. 10; minimum daily mean, 13 mg/L Feb. 15.
SEDIMENT LOADS: Maximum daily, 4,630 tons Dec. 28; minimum daily, 1.6 tons Sept. 12.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640	480	510	---	---	560	580	540	670	500	590	580
2	665	630	---	---	650	---	540	600	580	540	---	560
3	640	640	---	670	---	---	605	600	550	510	660	540
4	630	610	510	---	---	---	620	650	640	545	650	560
5	560	530	600	---	580	540	595	620	560	560	570	560
6	560	540	540	---	---	520	560	640	---	540	600	580
7	620	560	600	590	---	---	---	660	530	600	580	620
8	680	590	570	620	---	840	540	665	---	420	540	630
9	660	570	520	---	620	560	590	640	530	410	560	560
10	660	440	---	540	---	540	600	640	640	420	580	560
11	600	560	640	---	---	620	---	---	650	540	610	620
12	600	670	---	---	660	---	620	660	500	540	---	580
13	660	640	---	---	---	620	635	---	680	560	---	560
14	660	620	---	---	---	600	570	660	670	620	---	580
15	540	660	---	660	---	---	600	530	640	---	---	520
16	540	530	510	---	630	540	620	540	580	520	610	540
17	570	565	---	---	---	---	---	540	630	520	580	580
18	570	600	---	---	---	550	---	600	---	600	520	615
19	680	560	---	660	460	630	650	---	670	480	540	670
20	680	580	---	---	---	---	680	640	565	440	450	670
21	730	640	---	660	280	640	660	550	620	600	480	380
22	730	540	---	---	---	---	540	690	540	640	520	450
23	580	540	---	---	---	630	---	---	610	620	490	---
24	640	520	---	690	---	520	605	630	---	605	600	590
25	620	565	---	---	---	480	530	590	620	520	500	660
26	580	555	---	---	450	600	620	600	580	400	480	640
27	605	560	420	665	---	575	650	620	600	---	560	660
28	600	---	---	---	550	---	660	---	640	620	600	---
29	600	550	---	---	---	580	660	640	500	660	---	640
30	530	---	---	640	---	560	640	580	---	600	580	610
31	665	---	---	---	---	---	---	630	---	590	620	---

05483450 MIDDLE RACCOON RIVER NEAR BAYARD--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C.), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	7.0	2.0	---	---	9.0	6.0	20.0	22.0	29.0	25.0	28.0
2	11.0	5.0	4.0	---	2.0	---	6.0	20.0	14.0	28.0	---	24.0
3	11.0	6.0	4.0	2.0	---	7.0	14.0	21.0	22.0	30.0	26.0	28.0
4	12.0	7.0	4.0	---	---	---	14.0	23.0	18.0	29.0	21.0	27.0
5	13.0	6.0	3.0	---	2.0	5.0	13.0	20.0	24.0	29.0	30.0	29.0
6	15.0	5.0	3.0	---	---	6.0	10.0	21.0	---	29.0	32.0	31.0
7	16.0	8.0	5.0	.0	---	---	---	23.0	27.0	29.0	32.0	30.0
8	15.0	8.0	5.0	1.0	---	10.0	11.0	24.0	---	26.0	30.0	29.0
9	15.0	11.0	4.0	---	2.0	9.0	12.0	23.0	25.0	31.0	28.0	22.0
10	16.0	7.0	---	2.0	---	8.0	15.0	22.0	20.0	30.0	27.0	22.0
11	17.0	6.0	4.0	---	---	9.0	---	---	18.0	29.0	22.0	24.0
12	17.0	4.0	3.0	---	2.0	---	20.0	21.0	15.0	26.0	---	18.0
13	17.0	6.0	1.0	---	---	10.0	14.0	---	15.0	26.0	---	17.0
14	17.0	9.0	---	---	---	6.0	11.0	15.0	17.0	29.0	---	22.0
15	17.0	6.0	---	2.0	---	---	19.0	14.0	26.0	---	---	22.0
16	12.0	4.0	3.0	---	2.0	12.0	20.0	15.0	27.0	26.0	27.0	21.0
17	9.0	4.0	---	---	---	12.0	---	20.0	20.0	29.0	26.0	27.0
18	11.0	5.0	---	---	---	16.0	---	22.0	---	27.0	24.0	24.0
19	11.0	4.0	2.0	1.0	1.0	16.0	19.0	---	25.0	25.0	26.0	27.0
20	8.0	2.0	---	---	---	---	23.0	24.0	22.0	26.0	17.0	20.0
21	9.0	2.0	3.0	2.0	5.0	9.0	20.0	24.0	26.0	30.0	23.0	15.0
22	9.0	4.0	---	---	---	---	20.0	23.0	24.0	27.0	22.0	21.0
23	7.0	4.0	---	---	---	11.0	---	---	21.0	28.0	26.0	14.0
24	7.0	4.0	2.0	2.0	---	6.0	15.0	25.0	---	26.0	23.0	16.0
25	10.0	6.0	---	---	---	10.0	13.0	26.0	29.0	29.0	23.0	16.0
26	9.0	7.0	---	---	3.0	13.0	13.0	26.0	27.0	30.0	25.0	17.0
27	16.0	7.0	4.0	1.0	---	15.0	15.0	26.0	23.0	---	26.0	19.0
28	9.0	4.0	---	---	8.0	---	14.0	---	25.0	25.0	27.0	---
29	8.0	6.0	---	---	---	9.0	19.0	25.0	25.0	27.0	---	8.0
30	9.0	5.0	---	1.0	---	6.0	17.0	27.0	---	24.0	23.0	11.0
31	8.0	---	1.0	---	---	---	---	20.0	---	21.0	26.0	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	39	4.2	775	647	64	17	243	220	30	6.5	505	266
2	36	3.8	200	97	112	29	190	185	40	8.6	428	185
3	46	5.0	115	44	123	35	141	240	49	11	390	142
4	56	7.0	129	46	125	46	122	148	54	12	402	206
5	76	9.2	137	41	124	55	117	107	60	13	795	322
6	55	6.5	118	33	120	50	131	88	53	11	460	117
7	140	25	114	32	111	51	161	83	47	10	353	119
8	114	18	89	24	115	56	134	62	38	8.0	277	88
9	64	7.9	88	23	124	56	113	47	29	6.0	199	64
10	83	11	2580	2950	119	50	100	39	20	4.1	180	65
11	410	92	900	632	57	20	94	34	17	3.4	218	85
12	105	17	250	138	122	38	88	30	18	3.5	210	82
13	75	11	200	101	98	24	83	27	17	3.3	176	68
14	120	19	180	84	88	25	76	23	14	2.7	169	66
15	1010	758	145	61	112	39	70	20	13	2.5	167	61
16	820	748	168	63	330	223	64	17	17	3.3	199	75
17	395	272	168	62	656	1130	62	16	24	5.6	129	49
18	235	122	136	49	272	411	64	16	50	13	107	41
19	195	92	78	27	110	154	66	16	304	94	145	57
20	190	82	79	25	105	136	62	14	580	391	141	54
21	130	45	85	26	202	262	75	17	845	1030	119	45
22	132	42	122	39	186	226	65	14	1020	3030	130	50
23	102	26	132	41	134	148	49	11	825	1680	163	66
24	90	22	123	37	108	111	37	8.2	708	990	221	100
25	113	27	78	23	92	94	29	6.4	632	693	194	86
26	136	33	95	27	105	108	23	5.0	558	505	180	78
27	95	23	94	26	350	567	23	5.0	485	320	270	119
28	155	45	110	29	1680	4630	23	5.0	448	212	298	140
29	138	33	97	26	1100	2380	24	5.2	---	---	212	100
30	132	32	86	23	415	482	25	5.4	---	---	165	75
31	170	56	---	---	302	277	28	6.0	---	---	149	68
TOTAL	---	2694.6	---	5476	---	11930	---	1520.2	---	9072.5	---	3139

05483450 MIDDLE RACCOON RIVER NEAR BAYARD--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	143	60	520	386	600	238	226	51	125	20	70	5.9
2	420	196	485	335	340	133	205	44	105	16	62	4.7
3	1320	1080	430	275	315	117	185	37	100	14	45	3.0
4	1580	1720	365	220	300	108	150	30	110	15	48	3.2
5	1070	991	350	209	288	103	130	25	99	12	190	18
6	620	469	600	421	295	104	120	22	88	8.6	200	25
7	438	306	600	418	320	110	115	21	80	7.3	131	11
8	370	231	405	256	318	109	160	29	89	8.4	71	5.0
9	290	164	345	198	295	97	225	37	100	8.6	50	3.2
10	300	165	350	198	235	70	250	40	72	6.4	41	2.7
11	310	162	329	186	1000	491	215	33	50	4.5	28	1.9
12	285	139	360	205	2330	1410	190	29	48	4.0	24	1.6
13	270	133	360	180	650	307	160	25	42	3.7	27	2.1
14	220	105	290	147	410	179	185	29	48	4.3	49	4.1
15	219	99	403	222	472	224	205	30	58	5.6	47	3.9
16	228	102	400	218	865	413	185	24	70	6.0	58	4.4
17	248	98	395	206	547	216	170	22	68	5.9	32	2.2
18	262	100	340	169	360	125	145	19	55	5.0	41	2.7
19	274	102	325	159	265	89	458	126	70	6.2	49	3.0
20	268	100	325	154	270	87	660	233	90	7.3	37	2.8
21	279	102	350	162	275	85	286	53	72	5.6	609	173
22	300	106	300	130	260	77	205	33	50	4.1	272	32
23	298	124	290	128	295	83	145	21	79	6.8	120	14
24	273	123	398	206	270	76	113	16	85	8.0	78	8.8
25	270	117	1100	659	225	58	370	86	130	12	66	7.8
26	362	227	585	300	224	59	1610	739	107	8.4	59	6.4
27	1140	1190	751	452	392	137	880	169	69	5.2	46	4.2
28	1140	1200	1760	1030	320	98	302	47	50	3.6	45	3.9
29	790	706	1240	556	247	61	128	19	59	4.5	48	6.0
30	580	460	925	412	234	54	123	19	120	12	102	18
31	---	---	1270	573	---	---	130	22	100	10	---	---
TOTAL	---	10877	---	9370	---	5518	---	2130	---	249.0	---	384.5

TOTAL LOAD FOR YEAR: 62360.8 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 31...	11:30	7.0	99	71	19	86
NOV 29...	12:30	6.0	98	91	24	84
APR 02...	11:10	5.0	141	205	78	92
MAY 09...	15:05	22.0	211	351	200	96
JUN 20...	14:10	22.0	120	255	83	94
AUG 05...	10:45	23.0	44	111	13	96

05483450 MIDDLE RACCOON RIVER NEAR BAYARD--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
OCT											
31...	11:30	99	5	1	2	17	66	90	97	100	--
NOV											
29...	12:35	98	5	1	1	16	68	91	98	100	--
APR											
02...	11:30	141	6	1	1	13	69	92	98	99	100
MAY											
09...	15:00	211	5	1	2	11	63	90	96	98	100
JUN											
20...	14:00	120	5	1	2	11	57	87	95	98	100
AUG											
05...	10:30	44	5	1	1	15	73	92	98	100	--
SEP											
18...	11:35	26	5	1	1	11	63	91	97	99	100

05483470 LAKE PANORAMA AT PANORA, IOWA

LOCATION.--Lat 41°41'44", long 94°22'53", in SW1/4 NE1/4 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, and at mile 268.8 upstream from mouth of Des Moines River.

DRAINAGE AREA.--433 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft above NGVD.

REMARKS.--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, 2,9000 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. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 47.18 ft Dec. 29, 1984; minimum, 44.05 ft Mar. 11, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 47.18 ft Dec. 29; minimum recorded, 44.60 ft Feb. 13, 16, but may have been less during period of no gage height record Aug. 8 to Sept. 8.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45.25	45.85	45.35	45.22	44.70	44.91	45.28	45.67	45.07	45.26	45.02	---
2	45.22	45.54	45.36	45.08	44.67	45.02	45.19	45.53	45.06	45.24	44.97	---
3	45.23	45.32	45.29	45.14	44.66	45.07	45.27	45.44	45.21	45.20	44.98	---
4	45.28	45.39	45.23	45.22	44.66	45.23	45.48	45.35	45.33	45.21	45.12	---
5	45.33	45.46	45.24	45.24	44.65	45.23	45.54	45.32	45.41	45.22	45.15	---
6	45.33	45.47	45.23	45.23	44.64	45.12	45.48	45.32	45.47	45.20	45.26	---
7	45.33	45.47	45.25	45.21	44.64	45.07	45.39	45.35	45.46	45.26	45.26	---
8	45.24	45.49	45.30	45.17	44.63	45.06	45.35	45.33	45.47	45.28	---	---
9	45.10	45.50	45.36	45.11	44.63	45.01	45.47	45.28	45.48	45.23	---	44.94
10	44.90	45.69	45.38	45.07	44.64	44.98	45.57	45.28	45.47	45.14	---	44.82
11	44.94	45.85	45.39	45.04	44.64	45.01	45.60	45.34	45.50	45.21	---	44.81
12	45.04	45.80	45.43	45.00	44.63	45.12	45.59	45.39	45.62	45.19	---	44.74
13	45.11	45.72	45.38	44.98	44.62	45.23	45.59	45.35	45.65	45.23	---	44.76
14	45.23	45.68	45.34	44.98	44.62	45.28	45.55	45.31	45.60	45.35	---	44.83
15	45.57	45.65	45.30	44.97	44.61	45.29	45.51	45.31	45.55	45.23	---	44.89
16	45.53	45.58	45.43	44.95	44.61	45.30	45.48	45.31	45.56	45.27	---	44.83
17	45.20	45.53	45.91	44.92	44.62	45.29	45.44	45.28	45.54	45.34	---	44.87
18	45.18	45.53	45.89	44.92	44.66	45.27	45.41	45.24	45.49	45.35	---	44.98
19	45.26	45.51	45.25	44.89	44.74	45.27	45.38	45.23	45.40	45.35	---	45.05
20	45.27	45.48	45.22	44.82	44.87	45.26	45.38	45.21	45.39	45.36	---	45.13
21	45.23	45.44	45.33	44.76	45.24	45.26	45.37	45.20	45.44	45.37	---	---
22	45.18	45.42	45.39	44.74	45.71	45.25	45.36	45.19	45.41	45.37	---	---
23	45.15	45.43	45.35	44.73	---	45.28	45.38	45.28	45.46	45.38	---	---
24	45.26	45.43	45.21	44.74	---	45.29	45.40	45.39	45.55	45.39	---	---
25	45.36	45.42	45.09	44.75	---	45.27	45.39	45.47	45.53	45.40	---	---
26	45.24	45.42	45.08	44.75	---	45.25	45.41	45.53	45.32	45.40	---	---
27	45.21	45.43	45.21	44.75	44.95	45.31	45.58	45.54	45.27	---	---	---
28	45.35	45.41	46.07	44.75	44.88	45.32	45.75	45.56	45.25	---	---	---
29	45.43	45.40	46.86	44.73	---	45.32	45.76	45.55	45.27	45.19	---	---
30	45.49	45.40	45.63	44.74	---	45.29	45.74	45.54	45.29	45.09	---	---
31	45.52	---	45.46	44.72	---	45.33	---	45.29	---	45.10	---	---
MEAN	45.26	45.52	45.43	44.95	---	45.20	45.47	45.37	45.42	---	---	---
MAX	45.57	45.85	46.86	45.24	---	45.33	45.76	45.67	45.65	---	---	---
MIN	44.90	45.32	45.08	44.72	---	44.91	45.19	45.19	45.06	---	---	---

05483600 MIDDLE RACCOON RIVER AT PANORA, IA

LOCATION.--Lat 41°41'14", long 94°22'15", in NE1/4 NW1/4 sec.5, T.79 N., R.30 W., Guthrie County, Hydrologic Unit 07100007, on left bank 15 ft downstream from bridge on county highway, 0.2 mi southwest of Panora, 1.5 mi upstream from Andy's Branch, 1.6 mi downstream from Lake Panorama, 18.2 mi upstream from mouth, and at mile 267.2 upstream from mouth of Des Moines River.

DRAINAGE AREA.--440 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR IOWA 1974: 1973 (P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 991.20 ft above NGVD.

REMARKS.--Estimated daily discharges: Oct. 1-30. Records good except for periods of estimated record, which are poor. City of Panora diverts approximately 100 acre ft/yr above station. Flow regulated by dam on Lake Panorama since August 1970.

AVERAGE DISCHARGE.--27 years, 217 ft³/s, 6.70 in/yr 157,200 acre-ft/yr; median of yearly mean discharges, 170 ft³/s, 5.2 in/yr, 123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s May 19, 1974, gage height, 14.80 ft, from rating curve extended above 5,200 ft³/s by step-backwater analysis; no flow June 9, 10, 1977, result of gate operation at Lake Panorama; minimum daily discharge excluding regulation at Lake Panorama, 3.0 ft³/s July 9, 14, 22-23, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1953, reached a stage of 14.3 ft, from floodmark, discharge, about 14,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 29	1100	*2,350	*7.43				

Minimum discharge, 18 ft³/s July 11,18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	371	94	264	86	131	169	297	161	97	72	33
2	54	328	97	186	84	127	197	267	82	93	66	33
3	51	199	83	187	82	156	228	240	42	87	52	33
4	61	80	69	219	81	221	316	212	62	87	22	29
5	70	97	75	226	81	204	353	202	84	84	23	31
6	75	100	77	219	81	176	328	204	97	77	26	33
7	98	103	78	212	81	161	294	219	100	75	24	29
8	120	108	88	197	81	156	174	212	99	73	28	32
9	110	109	102	176	81	142	132	200	99	50	36	31
10	125	180	110	162	81	134	165	158	102	20	41	29
11	100	234	117	156	81	89	184	145	115	19	40	29
12	82	218	129	145	78	64	189	180	156	20	37	29
13	68	194	113	137	78	88	190	177	162	23	33	30
14	58	180	106	139	78	103	182	175	160	32	33	27
15	120	173	94	138	78	109	174	183	162	38	36	27
16	250	147	146	134	76	117	166	191	164	32	35	27
17	500	136	315	130	76	112	160	183	163	20	35	27
18	390	134	598	129	87	111	150	168	144	19	38	28
19	300	131	334	127	108	114	141	164	128	37	39	27
20	235	124	190	114	148	111	139	170	119	62	38	26
21	180	117	239	101	326	110	135	157	118	74	33	28
22	145	115	258	92	781	108	133	91	110	73	35	35
23	130	114	237	89	509	120	139	87	124	65	39	47
24	115	114	192	90	405	125	150	131	141	63	40	46
25	100	112	156	94	311	122	153	159	124	71	34	51
26	90	113	156	94	264	122	166	174	114	95	34	50
27	78	114	225	92	213	132	233	181	116	100	34	48
28	74	107	682	92	186	137	305	233	115	88	34	53
29	73	104	1750	92	---	142	319	243	106	78	30	68
30	77	103	754	94	---	140	307	201	99	76	33	74
31	91	---	369	89	---	160	---	182	---	77	34	---
TOTAL	4088	4459	8033	4416	4702	4044	6071	5786	3568	1905	1134	1090
MEAN	132	149	259	142	168	130	202	187	119	61.5	36.6	36.3
MAX	500	371	1750	264	781	221	353	297	164	100	72	74
MIN	51	80	69	89	76	64	132	87	42	19	22	26
CFSM	.30	.34	.59	.32	.38	.30	.46	.42	.27	.14	.08	.08
IN.	.35	.38	.68	.37	.40	.34	.51	.49	.30	.16	.10	.09
AC-FT	8110	8840	15930	8760	9330	8020	12040	11480	7080	3780	2250	2160

CAL YR 1984	TOTAL	162022	MEAN	443	MAX	5820	MIN	28	CFSM	1.01	IN.	13.70	AC-FT	321400
WTR YR 1985	TOTAL	49296	MEAN	135	MAX	1750	MIN	19	CFSM	.31	IN.	4.17	AC-FT	97780

05483600 MIDDLE RACCOON RIVER AT PANORA, IA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1979 to current year (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1979 to current year (discontinued).
WATER TEMPERATURES: April 1979 to current year (discontinued).
SUSPENDED SEDIMENT DISCHARGE: April 1979 to current year (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, 800 microsiemens Oct. 29, 1979, Dec. 26, 28, 1983; minimum daily, 280 microsiemens Feb. 25, 26, 1982.
WATER TEMPERATURES: Maximum daily, 32.0°C July 15, 1979; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,600 mg/L April 20, 1976; minimum daily mean, 3 mg/L Dec. 10, 1983, Mar. 15, 1984, Jan. 25, 1985.
SEDIMENT LOADS: Maximum daily, 6,300 tons June 15, 1982; minimum daily, 0.43 ton July 12, 1985.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 258 mg/L Feb. 23; minimum daily mean, 3 mg/L Jan. 25.
SEDIMENT LOADS: Maximum daily, 502 tons Feb. 22; minimum daily, 0.43 tons July 12.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C.) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	520	---	---	540	---	---
2	530	560	---	520	540	650	540	---	---	---	---	---
3	---	---	---	---	---	---	520	---	---	510	---	---
4	---	---	---	---	620	420	---	---	540	---	---	---
5	530	590	500	---	---	---	---	---	---	480	470	---
6	520	---	---	---	640	430	---	---	540	---	---	---
7	---	---	---	460	---	---	---	---	---	---	---	510
8	520	---	---	560	600	---	520	---	---	440	---	---
9	---	560	---	---	---	---	---	---	---	---	---	---
10	500	---	---	580	---	530	---	---	510	510	---	---
11	---	---	---	---	600	---	---	---	---	---	---	---
12	500	---	510	---	---	530	540	---	---	510	---	---
13	---	590	500	---	620	---	520	600	---	---	---	520
14	---	---	---	---	---	540	---	570	---	---	---	---
15	540	---	---	580	600	---	520	570	---	510	---	---
16	---	570	---	---	---	---	580	---	---	---	---	480
17	---	---	---	560	---	---	520	---	510	---	600	---
18	---	---	---	---	600	540	530	---	520	---	---	520
19	540	---	500	---	615	---	---	---	---	---	520	---
20	---	560	---	---	540	540	---	540	530	---	---	---
21	540	---	510	560	540	---	---	---	---	---	---	---
22	540	---	---	---	---	---	490	480	---	---	---	---
23	---	480	---	560	---	---	---	---	---	510	---	---
24	---	---	490	---	---	---	475	---	---	---	500	---
25	---	---	---	560	---	530	---	---	---	---	---	---
26	---	510	---	---	450	530	445	---	---	---	500	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	425	---	---	---	---	---	500	---
29	---	495	450	550	---	530	460	---	---	---	---	---
30	---	500	---	---	---	---	480	---	---	---	---	---
31	540	---	520	560	---	---	---	---	---	---	---	---

05483600 MIDDLE RACCOON RIVER AT PANORA, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER (DEG. C.) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	5.0	---	---	17.0	---	---
2	16.0	10.0	---	2.0	1.0	6.0	6.0	---	---	---	---	---
3	---	---	---	---	---	---	5.0	---	---	17.0	---	---
4	---	---	---	---	.0	1.0	---	---	16.0	---	---	---
5	16.0	10.0	4.0	---	---	---	---	---	---	17.0	21.0	---
6	15.0	---	---	---	.0	1.0	---	---	16.0	---	---	---
7	---	---	3.0	1.0	---	---	---	---	---	---	---	14.0
8	16.0	---	---	1.0	.0	---	5.0	---	---	17.0	---	---
9	---	10.0	---	---	---	---	---	---	---	---	---	---
10	16.0	---	2.0	2.0	---	2.0	---	---	16.0	17.0	---	---
11	---	---	---	---	.0	---	---	---	---	---	---	---
12	16.0	---	2.0	---	---	3.0	5.0	---	---	17.0	---	---
13	---	9.0	2.0	---	.0	---	14.0	15.0	---	---	---	14.0
14	---	---	---	---	---	3.0	---	18.0	---	---	---	---
15	16.0	---	2.0	2.0	1.0	---	6.0	15.0	---	18.0	---	---
16	---	8.0	---	---	---	---	14.0	---	---	---	---	15.0
17	---	---	2.0	2.0	---	---	6.0	---	16.0	---	16.0	---
18	---	---	---	---	1.0	3.0	14.0	---	16.0	---	---	22.0
19	13.0	---	1.0	---	1.0	---	---	---	---	---	16.0	---
20	---	7.0	---	---	1.0	3.0	---	14.0	20.0	20.0	---	---
21	14.0	---	2.0	---	1.0	---	---	---	---	---	---	---
22	13.0	---	---	---	---	---	10.0	14.0	---	---	---	---
23	---	7.0	---	1.0	---	---	---	---	---	18.0	---	---
24	---	---	2.0	---	---	---	10.0	---	---	---	16.0	---
25	---	---	---	1.0	---	4.0	---	---	---	---	---	---
26	---	7.0	---	---	1.0	5.0	10.0	---	---	---	15.0	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	1.0	---	---	---	---	---	15.0	---
29	---	5.0	2.0	1.0	---	5.0	11.0	---	---	---	---	---
30	---	4.0	---	---	---	---	11.0	---	---	---	---	---
31	11.0	---	2.0	---	---	---	---	---	---	---	---	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24	4.4	62	62	16	4.1	17	12	15	3.5	95	34
2	24	3.5	17	15	11	2.9	11	5.5	10	2.3	69	24
3	23	3.2	13	7.0	10	2.2	10	5.0	7	1.5	71	30
4	23	3.8	13	2.8	11	2.0	8	4.7	7	1.5	99	59
5	25	4.7	13	3.4	11	2.2	7	4.3	5	1.1	103	57
6	24	4.9	11	3.0	9	1.9	7	4.1	5	1.1	102	48
7	20	5.3	10	2.8	12	2.5	7	4.0	7	1.5	98	43
8	20	6.5	8	2.3	16	3.8	8	4.3	8	1.7	68	29
9	25	7.4	10	2.9	21	5.8	9	4.3	9	2.0	40	15
10	36	12	25	12	24	7.1	8	3.5	9	2.0	25	9.0
11	57	15	36	23	27	8.5	8	3.4	8	1.7	16	3.8
12	72	16	28	16	25	8.7	8	3.1	6	1.3	13	2.2
13	75	14	16	8.4	16	4.9	8	3.0	4	.84	13	3.1
14	78	12	13	6.3	20	5.7	8	3.0	5	1.1	13	3.6
15	73	24	8	3.7	10	2.5	7	2.6	8	1.7	15	4.4
16	58	39	8	3.2	8	3.2	7	2.5	9	1.8	15	4.7
17	49	66	8	2.9	8	6.8	7	2.5	10	2.1	14	4.2
18	42	44	9	3.3	9	15	7	2.4	12	2.8	16	4.8
19	30	24	7	2.5	9	8.1	8	2.7	19	5.5	16	4.9
20	30	19	11	3.7	17	8.7	8	2.5	153	61	17	5.1
21	78	38	14	4.4	40	26	8	2.2	164	144	15	4.5
22	27	11	16	5.0	53	37	12	3.0	238	502	14	4.1
23	28	9.8	22	6.8	36	23	12	2.9	258	355	13	4.2
24	17	5.3	29	8.9	19	9.8	7	1.7	223	244	9	3.0
25	27	7.3	40	12	15	6.3	3	.76	197	165	6	2.0
26	129	31	50	15	13	5.5	5	1.3	172	123	7	2.3
27	37	7.8	44	14	15	9.1	8	2.0	146	84	6	2.1
28	35	7.0	35	10	70	129	10	2.5	122	61	5	1.8
29	32	6.3	27	7.6	56	265	14	3.5	---	---	5	1.9
30	30	6.2	21	5.8	24	49	15	3.8	---	---	6	2.3
31	34	8.4	---	---	20	20	17	4.1	---	---	34	15
TOTAL	---	466.8	---	275.7	---	686.3	---	107.16	---	1776.04	---	432.0

05483600 MIDDLE RACCOON RIVER AT PANORA, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	27	12	70	56	39	17	50	13	40	7.8	15	1.3
2	12	6.4	58	42	26	5.8	40	10	39	6.9	15	1.3
3	12	7.4	48	31	19	2.2	32	7.5	37	5.2	17	1.5
4	23	20	29	17	11	1.8	31	7.3	23	1.4	17	1.3
5	23	22	18	9.8	13	2.9	32	7.3	16	.99	17	1.4
6	20	18	15	8.3	13	3.4	35	7.3	18	1.3	17	1.5
7	16	13	14	8.3	14	3.8	41	8.3	12	.78	17	1.3
8	7	3.3	19	11	16	4.3	43	8.5	17	1.3	16	1.4
9	14	5.0	24	13	19	5.1	35	4.7	22	2.1	15	1.3
10	12	5.3	23	9.8	23	6.3	28	1.5	29	3.2	15	1.2
11	7	3.5	39	15	20	6.2	17	.87	26	2.8	16	1.3
12	6	3.1	63	31	20	8.4	8	.43	24	2.4	16	1.3
13	14	7.2	50	24	20	8.7	10	.62	19	1.7	13	1.1
14	14	6.9	32	15	23	9.9	11	.95	26	2.3	9	.66
15	6	2.8	25	12	24	10	14	1.4	36	3.5	6	.44
16	28	13	24	12	21	9.3	10	.86	46	4.3	6	.44
17	53	23	27	13	21	9.2	10	.54	55	5.2	12	.87
18	44	18	34	15	26	10	12	.62	51	5.2	19	1.4
19	43	16	43	19	24	8.3	24	2.4	45	4.7	19	1.4
20	47	18	47	22	20	6.4	27	4.5	38	3.9	18	1.3
21	59	22	63	27	19	6.1	28	5.6	34	3.0	18	1.4
22	67	24	79	19	16	4.8	32	6.3	26	2.5	35	3.3
23	66	25	82	19	28	9.4	35	6.1	22	2.3	40	5.1
24	64	26	84	30	51	19	37	6.3	19	2.1	43	5.3
25	65	27	81	35	44	15	36	6.9	21	1.9	41	5.6
26	79	35	73	34	38	12	34	8.7	24	2.2	38	5.1
27	78	49	65	32	42	13	33	8.9	22	2.0	36	4.7
28	79	65	80	50	45	14	34	8.1	20	1.8	45	6.4
29	69	59	75	49	50	14	37	7.8	18	1.5	54	9.9
30	75	62	60	33	53	14	38	7.8	16	1.4	55	11
31	---	---	53	26	---	---	38	7.9	16	1.5	---	---
TOTAL	---	617.9	---	738.2	---	260.3	---	168.99	---	89.17	---	81.51

TOTAL LOAD FOR YEAR: 5700.07 TONS.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPER-ATURE (DEG C)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 31...	14:15	11.0	81	39	8.5	86
NOV 29...	10:15	5.0	104	26	7.3	67
APR 02...	14:00	6.0	189	11	5.6	81
JUN 20...	11:15	20.0	128	30	10	94

05483600 MIDDLE RACCOON RIVER AT PANORA, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
OCT							
31...	14:25	81	5	1	3	13	48
NOV							
29...	10:45	104	5	1	1	7	29
APR							
02...	14:40	189	6	1	2	7	26
MAY							
14...	12:10	181	5	1	2	6	27
JUN							
20...	11:35	128	3	3	6	18	45
SEP							
18...	14:20	28	4	0	1	3	23

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
OCT							
31...	71	83	89	93	97	100	--
NOV							
29...	50	60	69	79	87	100	--
APR							
02...	50	65	75	85	92	100	--
MAY							
14...	46	57	63	68	74	81	100
JUN							
20...	63	75	83	90	100	--	--
SEP							
18...	46	59	68	76	78	100	--

05484000 SOUTH RACCOON RIVER AT REDFIELD, IA

LOCATION.--Lat 41°34'48", long 94°10'58", in SW1/4 SW1/4 sec. 3, T.78 N., R.29 W., Dallas County, Hydrologic Unit 07100007, on left bank 35 ft (revised) downstream from bridge on county highway at Redfield, 0.8 mi downstream from bridge on U.S. Highway 6, 1.0 mi downstream from Middle Raccoon River, 16.4 mi upstream from mouth, and at mile 248.0 upstream from mouth of Des Moines River.

DRAINAGE AREA.--988 mi².

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1940.

GAGE.--Water-stage recorder. Datum of gage is 896.43 ft above NGVD. Prior to June 12, 1946, nonrecording gage, and June 12, 1946, to Sept. 30, 1966, water-stage recorder at site 20 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 23 to Nov. 8, Dec. 5 to Feb. 24. Records good except for periods of National Weather Service gage-height telemeter at station.

COOPERATION.--Three discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--45 years, 457 ft³/s, 6.28 in/yr, 331,100 acre-ft/yr; median of yearly mean discharges 400 ft³/s, 5.5 in/yr, 290,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s July 2, 1958, gage height, 29.04 ft, from flood-mark; minimum daily, 17 ft³/s Aug. 4, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1800	*6,200	a *16.37	No other peak greater than base discharge			

a ice jam
Minimum discharge, 55 ft³/s Sept. 3,10,18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	700	219	388	330	525	388	506	286	194	156	70
2	141	600	194	430	330	429	492	464	256	180	142	63
3	123	270	177	470	330	586	769	423	138	169	139	61
4	117	160	164	685	335	1300	769	388	157	158	115	63
5	164	180	165	580	340	635	759	362	177	154	93	72
6	164	193	160	520	340	474	693	366	194	146	83	75
7	181	205	190	470	340	488	605	379	205	138	76	85
8	245	210	230	500	340	446	492	366	194	135	68	63
9	237	275	245	470	345	393	326	358	198	132	73	60
10	267	346	260	495	350	373	358	338	191	92	83	58
11	164	450	255	435	355	358	384	278	212	70	84	61
12	141	414	245	480	360	275	384	338	275	67	79	60
13	132	375	235	600	370	289	406	330	275	68	76	67
14	129	371	225	820	375	310	388	318	267	77	94	71
15	341	350	220	780	380	302	371	331	260	81	98	64
16	895	314	400	680	390	305	350	329	252	80	81	62
17	976	290	600	620	400	295	326	329	256	76	75	64
18	464	290	1000	560	410	293	302	308	237	66	77	66
19	362	290	700	500	430	296	290	292	212	153	76	64
20	322	256	400	460	900	291	283	303	201	268	73	60
21	314	248	490	430	2500	283	298	294	194	165	71	80
22	283	260	580	410	2000	284	283	260	187	144	84	109
23	250	260	700	390	1600	306	298	171	241	135	93	152
24	220	256	480	380	1100	309	322	263	1320	129	91	125
25	200	256	350	370	931	338	310	334	345	156	84	116
26	185	256	600	360	745	318	330	310	263	170	74	117
27	182	256	980	355	543	346	423	318	360	203	72	114
28	175	252	1500	350	497	366	511	329	289	179	69	111
29	165	241	2390	345	---	357	526	397	227	155	69	152
30	170	245	1480	340	---	354	511	350	205	155	71	229
31	250	---	713	335	---	377	---	330	---	171	70	---
TOTAL	8104	9069	16547	15008	17666	12301	12947	10462	8074	4266	2689	2614
MEAN	261	302	534	484	631	397	432	337	269	138	86.7	87.1
MAX	976	700	2390	820	2500	1300	769	506	1320	268	156	229
MIN	117	160	160	335	330	275	283	171	138	66	68	58
CFSM	.26	.31	.54	.49	.64	.40	.44	.34	.27	.14	.09	.09
IN.	.31	.34	.62	.57	.67	.46	.49	.39	.30	.16	.10	.10
AC-FT	16070	17990	32820	29770	35040	24400	25680	20750	16010	8460	5330	5180

CAL YR 1984	TOTAL	343413	MEAN	938	MAX	12600	MIN	105	CFSM	.95	IN.	12.93	AC-FT	681200
WTR YR 1985	TOTAL	119747	MEAN	328	MAX	2500	MIN	58	CFSM	.33	IN.	4.51	AC-FT	237500

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 07100007, 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, 1.1 mi downstream from confluence of North and South Raccoon Rivers, 29.0 mi upstream from mouth, and at mile 230.5 upstream from mouth of Des Moines River.

DRAINAGE AREA.--3,441 mi².

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. See WSP 1308 for history of changes prior to Aug. 8, 1934.

REMARKS.--Estimated daily discharges: Dec. 4-12, Dec. 14 to Mar. 3. Records good except for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height telemeters and data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--70 years, 1,379 ft³/s, 5.44 in/yr, 999,100 acre-ft/yr; median of yearly mean discharges, 1,150 ft³/s, 4.5 in/yr, 833,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,200 ft³/s June 13, 1947, gage height, 21.37 ft, from floodmark; maximum gage height, 21.77 ft July 3, 1958; minimum daily discharge, 10 ft³/s Jan. 22-31, 1940.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	----	*9,900	a *12.70	No other peak greater than base discharge			

a ice jam
Minimum daily discharge, 145 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	261	1090	543	2300	500	1260	1330	2960	1470	1160	327	167
2	253	1760	508	2200	490	1200	1410	2640	1360	1090	287	177
3	245	1230	417	2380	490	1390	1750	2370	1400	937	276	229
4	252	976	270	2700	485	2860	2000	2160	1410	821	271	224
5	269	741	240	3200	480	1720	2380	2020	1270	733	200	210
6	287	698	450	2900	480	1520	2730	1930	1180	662	205	200
7	315	677	680	2650	480	1560	2630	2330	1120	598	200	220
8	344	664	660	3000	475	1610	2430	2220	1060	560	177	186
9	448	666	660	2600	475	1500	2050	1970	990	526	172	177
10	354	653	560	2100	470	1390	1890	1810	938	469	181	186
11	394	819	530	1800	470	1350	1800	1700	936	401	177	210
12	288	850	520	1600	470	1440	1720	1660	1050	371	167	220
13	285	892	627	1430	470	1420	1690	1630	1170	354	172	190
14	279	972	495	1230	475	1380	1610	1550	1160	343	181	186
15	409	934	400	1120	480	1260	1550	1530	1130	330	200	177
16	1080	850	500	990	485	1190	1490	1530	1090	312	190	163
17	1650	772	700	900	495	1120	1410	1720	1060	287	172	158
18	1250	743	920	810	510	1070	1350	2300	984	260	172	150
19	1040	717	1300	740	520	1050	1270	2100	953	298	172	150
20	951	655	1200	680	1300	1000	1210	1930	890	495	167	145
21	866	612	1330	620	3200	968	1200	1770	827	489	158	150
22	773	606	1480	580	8200	929	1160	1640	766	411	167	215
23	711	596	1400	560	5400	959	1160	1560	951	344	200	350
24	597	584	1300	550	3300	998	1220	1550	1990	315	195	321
25	527	588	1480	540	2000	997	1350	1550	1030	368	177	276
26	535	596	1750	520	1500	996	1640	1680	761	350	158	292
27	734	603	2100	520	1300	1040	1860	2030	835	368	154	321
28	492	594	2500	510	1240	1100	2470	1930	820	344	150	255
29	467	572	3000	510	---	1120	3590	1840	688	315	163	321
30	477	564	3500	500	---	1140	3350	1700	688	332	177	456
31	458	---	2900	500	---	1280	---	1580	---	338	172	---
TOTAL	17291	23274	34920	43240	36640	39817	54700	58890	31977	14981	5937	6682
MEAN	558	776	1126	1395	1309	1284	1823	1900	1066	483	192	223
MAX	1650	1760	3500	3200	8200	2860	3590	2960	1990	1160	327	456
MIN	245	564	240	500	470	929	1160	1530	688	260	150	145
CFSM	.16	.23	.33	.41	.38	.37	.53	.55	.31	.14	.06	.06
IN.	.19	.25	.38	.47	.40	.43	.59	.64	.35	.16	.06	.07
AC-FT	34300	46160	69260	85770	72680	78980	108500	116800	63430	29710	11780	13250

CAL YR 1984	TOTAL	1357048	MEAN	3708	MAX	26400	MIN	163	CFSM	1.08	IN.	14.67	AC-FT	2692000
WTR YR 1985	TOTAL	368349	MEAN	1009	MAX	8200	MIN	145	CFSM	.29	IN.	3.98	AC-FT	730600

05484800 WALNUT CREEK AT DES MOINES, IA

LOCATION.--Lat 41°35'14", long 93°42'11", in SW1/4 SE1/4 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 Raccoon River.

DRAINAGE AREA.--78.4 mi².

PERIOD OF RECORD.--October 1971 to current year.

REVISED RECORDS.--WDR Iowa 1973: 1972. WDR IA-75-1: 1973-74.

GAGE.--Water-stage recorder. Datum of gage is 801.04 ft above NGVD (levels by Iowa Natural Resources Council).

REMARKS.--Estimated daily discharges: Oct. 1-2, Nov. 30 to Dec. 6, 9-11, 15-19, Jan. 1 to Feb. 21, Mar. 4-6. Records good except those for estimated discharges, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 62.7 ft³/s, 10.5 in/yr, 45,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s July 1, 1973, gage height, 17.72 ft; no flow for many days in 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 1	0145	*946	*9.69	Sep. 22	2145	776	9.02

Minimum daily discharge, 0.14 ft³/s Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	344	13	19	9.0	44	43	20	5.8	4.3	1.4	1.5
2	3.0	50	12	17	9.0	43	48	18	4.7	4.4	1.7	1.5
3	2.5	31	11	15	9.1	130	82	17	3.9	3.9	1.1	1.3
4	20	24	10	13	9.2	286	76	16	5.6	3.8	1.0	1.4
5	5.6	19	9.7	12	9.3	85	61	17	4.4	2.9	.70	1.6
6	4.4	16	9.4	11	9.4	72	53	17	4.0	2.5	.31	1.0
7	2.8	17	9.0	10	9.5	50	46	15	3.4	2.5	.25	.93
8	30	16	10	9.8	9.6	45	41	14	3.3	2.0	.41	.58
9	15	18	11	9.6	9.8	43	38	13	1.7	2.1	14	.20
10	17	24	11	9.4	10	43	38	13	4.5	1.9	7.3	.54
11	14	16	12	9.2	11	43	36	34	7.7	1.2	1.9	.71
12	8.0	15	12	9.0	12	38	35	25	8.9	1.1	1.5	1.3
13	2.4	15	10	8.8	15	43	34	20	3.8	1.3	2.0	2.3
14	12	16	11	8.8	20	40	31	20	57	2.0	1.1	1.6
15	65	15	12	8.7	30	38	31	19	22	1.5	.90	.80
16	79	13	13	8.6	40	37	30	17	33	1.1	.72	.70
17	24	14	13	8.6	60	35	28	16	33	1.0	1.7	1.1
18	34	13	14	8.5	80	35	28	14	20	1.0	.75	.98
19	19	13	17	8.5	100	35	26	13	14	7.2	.14	1.0
20	15	12	22	8.6	150	32	26	23	12	2.0	.61	4.7
21	13	14	48	8.6	300	32	24	12	11	1.1	1.4	7.0
22	12	13	27	8.6	159	32	25	10	6.6	1.0	79	88
23	14	13	20	8.6	320	40	26	14	24	.69	5.6	88
24	17	12	23	8.6	236	34	24	31	15	1.2	3.3	6.5
25	22	12	25	8.7	100	32	23	16	8.2	15	2.0	14
26	14	13	44	8.7	58	32	24	15	9.1	2.0	1.5	4.2
27	18	18	65	8.7	42	35	22	20	11	1.3	1.3	3.4
28	12	14	100	8.8	38	34	21	17	7.2	.91	1.7	4.5
29	8.8	13	57	8.8	---	31	20	11	5.1	.62	2.1	102
30	7.8	13	33	8.9	---	33	21	13	4.2	16	1.8	22
31	7.6	---	22	9.0	---	53	---	10	---	2.2	1.6	---
TOTAL	522.4	836	706.1	309.1	1864.9	1605	1061	530	354.1	91.72	140.79	365.34
MEAN	16.9	27.9	22.8	9.97	66.6	51.8	35.4	17.1	11.8	2.96	4.54	12.2
MAX	79	344	100	19	320	286	82	34	57	16	79	102
MIN	2.4	12	9.0	8.5	9.0	31	20	10	1.7	.62	.14	.20
CFSM	.22	.36	.29	.13	.85	.66	.45	.22	.15	.04	.06	.16
IN.	.25	.40	.34	.15	.88	.76	.50	.25	.17	.04	.07	.17
AC-FT	1040	1660	1400	613	3700	3180	2100	1050	702	182	279	725

CAL YR 1984	TOTAL	31396.9	MEAN	85.8	MAX	1070	MIN	1.1	CFSM	1.09	IN.	14.90	AC-FT	62280
WTR YR 1985	TOTAL	8386.45	MEAN	23.0	MAX	344	MIN	.14	CFSM	.29	IN.	3.98	AC-FT	16630

05485500 DES MOINES RIVER BELOW RACCOON RIVER AT DES MOINES, IA

LOCATION.--Lat 41°34'30", long 93°35'48", in NE1/4 SE1/4 sec.10, T.78 N., R.24 W., Polk County, Hydrologic Unit 07100008, on right bank 10 ft downstream from bridge on Southeast 14th Street at Des Moines, 0.8 mi downstream from Raccoon River and Scott Street Dam, and at mile 200.7.

DRAINAGE AREA.--9,879 mi².

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. 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, and Oct. 1, 1959 to Sept. 30, 1961, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 6-7, 14, 18-26, Dec. 31 to Feb. 23. Records good except those for estimated discharges, which are poor. Des Moines municipal water supply is taken from infiltration galleries on Raccoon River, 3.5 mi upstream from station. Average daily pumpage was about 58 ft³/s. 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 diversions not known. Flow regulated by Saylorville Lake (station 05481630) 13.0 mi upstream, since Apr. 12, 1977. U.S. Army Corps of Engineers Data Collection Platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers. Average monthly pumpage from galleries provided by Des Moines Water Works.

AVERAGE DISCHARGE.--45 years, 4,422 ft³/s, 6.08 in/yr, 3,204,000 acre-ft/yr; median of yearly mean discharges 3,580 ft³/s, 4.9 in/yr, 2,590,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,000 ft³/s June 26, 1947, gage height, 20.8 ft in gage well, 21.6 ft from outside floodmark, site and datum then in use; minimum daily, 26 ft³/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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,900 ft³/s Apr. 30, gage height, 17.71 ft; minimum daily discharge, 340 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	694	2870	1350	5860	660	2460	4340	13000	4500	3270	527	1190
2	569	3150	1270	4220	640	2350	4100	11100	4380	2810	394	1830
3	533	2740	1130	2730	620	2530	4190	10100	4130	3130	590	2330
4	634	2150	1040	1620	600	4890	4720	9590	4020	3140	598	1920
5	568	1810	1040	2900	580	5260	5590	8730	3880	2870	579	1360
6	578	1670	2600	3180	570	4170	7930	8130	3740	2480	529	1380
7	578	1610	1550	3110	560	3780	8840	8200	3650	2230	509	2090
8	599	1570	1110	3020	540	3330	8910	8380	3590	2290	443	3390
9	714	1570	1130	2890	540	3300	9080	7640	3520	2430	463	5820
10	655	1560	1170	1920	530	3160	8410	6800	3320	2250	500	6500
11	677	1590	1090	1580	530	3310	7710	6360	3030	1870	439	6510
12	636	1660	1200	2000	530	4040	7100	6220	3030	1590	445	6120
13	640	1890	1300	1500	530	5450	5860	6140	3140	1600	435	5210
14	665	2390	1550	1300	530	6880	5770	6080	3430	1580	442	3520
15	994	2580	1880	1200	530	6570	5550	5680	3540	1540	378	2360
16	1330	2520	2210	1100	530	6010	4780	5050	3680	1410	375	2320
17	2160	2200	2260	1050	540	5690	4120	4840	3830	1140	375	2310
18	2480	1810	1900	1000	540	5200	4190	5190	4030	1020	364	2260
19	2110	1780	1770	1050	560	5130	4550	5530	3950	1070	350	1920
20	2050	1920	2160	1100	1000	5090	4290	5530	3920	1050	344	1680
21	1770	1630	2890	1100	1900	4850	3850	5610	3670	1180	340	1400
22	1440	1630	3540	1000	2800	4490	3820	5460	3310	1120	650	1700
23	1430	1620	4030	960	5000	4520	3780	5170	3180	1050	407	2840
24	1500	1610	3420	940	8930	4530	4250	4880	3560	1000	384	2880
25	1450	1580	2420	940	5810	4390	5660	4860	3640	925	1520	2510
26	1380	1530	1990	900	4570	4120	7080	5150	2870	1010	2260	2350
27	1470	1420	1820	900	3260	4080	8990	5890	2890	1330	1200	2470
28	1480	1400	4470	860	2650	4290	11000	5800	3390	1200	930	2660
29	1420	1380	6010	760	---	4000	12900	5090	3300	1310	797	3150
30	1410	1360	7230	700	---	3990	13800	4780	3220	850	850	3610
31	1440	---	6990	680	---	4210	---	4600	---	766	991	---
TOTAL	36054	56200	75520	54070	46580	136070	195160	205580	107340	52511	19408	87590
MEAN	1163	1873	2436	1744	1664	4389	6505	6632	3578	1694	626	2920
MAX	2480	3150	7230	5860	8930	6880	13800	13000	4500	3270	2260	6510
MIN	533	1360	1040	680	530	2350	3780	4600	2870	766	340	1190
AC-FT	71510	111500	149800	107200	92390	269900	387100	407800	212900	104200	38500	173700

CAL YR 1984	TOTAL	4193534	MEAN	11460	MAX	56700	MIN	533	AC-FT	8318000
WTR YR 1985	TOTAL	1072083	MEAN	2937	MAX	13800	MIN	340	AC-FT	2126000

05485640 FOURMILE CREEK AT DES MOINES, IA

LOCATION.--Lat 41°36'50", long 93°32'43", in NE1/4 NE1/4 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 5.0 mi upstream from Des Moines River.

DRAINAGE AREA.--92.7 mi².

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.

REMARKS.--Estimated daily discharges: Oct. 15-16, Dec. 4-26, Jan. 2 to Feb. 21, Aug. 20, Sept. 16. Records good except those for estimated discharge, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 74.8 ft³/s, 11.0 in/yr, 54,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,340 ft³/s June 9, 1974, gage height, 14.84 ft; no flow for many days in 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 1	0630	662	7.54	Mar. 4	0415	*1,160	*9.10
Feb. 23	2015	1,010	8.71				

Minimum daily discharge, 0.27 ft³/s Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	380	19	47	12	62	53	21	15	7.0	1.5	1.8
2	4.1	144	18	41	12	65	70	21	15	6.2	1.1	1.3
3	3.6	87	15	36	12	157	147	20	15	5.7	1.5	1.4
4	8.0	76	14	31	12	682	139	18	14	4.8	1.2	1.8
5	8.0	54	14	26	12	141	108	20	14	3.7	1.1	1.3
6	5.0	47	13	23	12	101	86	20	13	3.2	.57	1.5
7	5.0	44	13	22	12	90	70	17	12	2.9	.39	.96
8	5.6	41	12	20	13	78	62	17	12	2.6	.53	.85
9	4.3	42	12	19	13	74	58	16	12	2.4	1.6	.84
10	3.5	46	11	18	14	72	58	17	13	1.7	2.3	1.4
11	4.1	46	12	17	14	71	54	25	14	1.4	.45	.59
12	5.5	45	12	16	15	72	54	25	16	1.4	.27	.63
13	4.2	42	12	16	16	70	48	20	13	1.7	1.0	.88
14	8.6	41	12	15	17	67	43	20	16	1.9	1.2	.78
15	55	38	12	15	18	60	41	17	13	1.3	1.2	.50
16	71	32	12	14	20	58	38	17	20	1.1	.98	.30
17	59	32	13	14	30	54	35	16	15	1.4	.54	1.6
18	44	32	13	13	45	52	36	15	10	1.0	.98	1.1
19	39	28	15	13	70	51	33	14	9.4	3.7	.68	.42
20	29	26	22	13	110	47	32	20	9.2	2.7	.40	1.8
21	23	25	52	12	180	46	31	14	8.6	1.4	.45	4.3
22	20	25	45	12	253	44	29	13	7.9	1.0	22	14
23	18	24	39	12	464	52	29	13	9.9	.95	11	37
24	16	24	30	12	354	50	26	16	19	1.3	2.6	10
25	18	24	50	12	152	46	24	13	8.7	4.6	2.1	9.8
26	16	24	68	12	82	46	24	13	21	1.9	1.6	6.6
27	18	25	146	11	63	51	22	23	21	1.1	1.5	3.7
28	18	22	203	11	64	49	21	25	12	.57	1.9	3.7
29	14	21	144	11	---	41	20	18	9.2	.55	1.4	35
30	14	20	99	11	---	39	22	18	7.7	3.7	1.3	36
31	15	---	76	11	---	52	---	18	---	2.7	1.3	---
TOTAL	561.9	1557	1228	556	2091	2640	1513	560	395.6	77.57	66.64	181.85
MEAN	18.1	51.9	39.6	17.9	74.7	85.2	50.4	18.1	13.2	2.50	2.15	6.06
MAX	71	380	203	47	464	682	147	25	21	7.0	22	37
MIN	3.5	20	11	11	12	39	20	13	7.7	.55	.27	.30
CFSM	.20	.56	.43	.19	.81	.92	.54	.20	.14	.03	.02	.07
IN.	.23	.62	.49	.22	.84	1.06	.61	.22	.16	.03	.03	.07
AC-FT	1110	3090	2440	1100	4150	5240	3000	1110	785	154	132	361

CAL YR 1984	TOTAL	44341.9	MEAN	121	MAX	1890	MIN	2.2	CFSM	1.31	IN.	17.79	AC-FT	87950
WTR YR 1985	TOTAL	11428.56	MEAN	31.3	MAX	682	MIN	.27	CFSM	.34	IN.	4.59	AC-FT	22670

05486000 NORTH RIVER NEAR NORWALK, IA

LOCATION.--Lat 41°27'25", long 93°39'10", in NW1/4 SW1/4 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, and 6.2 mi downstream from Badger Creek.

DRAINAGE AREA.--349 mi².

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 (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.--Estimated daily discharges: Oct. 31, Dec. 22-24, Jan. 1 to Feb. 23, June 22, and Sept. 18-21. Records fair except those for estimated discharges, which are poor. U.S. Army Corps of Engineers Data Collection Platform at station.

COOPERATION.--One discharge measurement provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--45 years, 186 ft³/s, 7.24 in/yr, 134,800 acre-ft/yr; median of yearly mean discharges, 170 ft³/s, 6.6 in/yr, 123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft³/s June 13, 1947, gage height, 25.3 ft, from floodmark, from rating curve extended above 9,100 ft³/s on basis of velocity-area studies. No flow at times during period 1954-58.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 23	----	*2,000	unknown	No other peak greater than base discharge			

Minimum daily discharge, 0.25 ft³/s Sept. 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	113	22	60	11	172	110	47	32	60	5.1	7.4
2	9.6	221	22	50	10	169	138	47	28	50	4.7	6.9
3	11	152	19	43	9.5	190	161	46	20	42	4.3	6.2
4	15	73	9.4	38	9.0	915	211	40	12	36	4.4	6.2
5	20	45	7.0	35	8.8	850	188	32	8.4	30	7.0	6.6
6	21	33	6.4	32	8.7	248	156	30	7.0	24	5.9	4.6
7	25	27	3.0	30	8.6	188	131	30	6.2	19	4.3	3.7
8	28	21	3.0	28	8.6	170	112	28	5.2	16	4.3	3.5
9	29	21	8.9	26	8.6	145	99	27	4.7	12	3.3	2.0
10	25	22	9.3	24	8.6	132	91	23	2.2	9.4	4.6	2.1
11	46	22	11	23	8.8	130	87	24	1.5	8.0	1.4	1.4
12	42	24	16	22	8.8	128	84	29	1.7	7.0	1.2	.91
13	29	21	15	21	8.8	124	79	38	3.0	6.0	1.6	2.3
14	18	21	16	20	8.8	123	74	37	3.8	5.8	1.8	2.7
15	33	19	20	19	9.2	117	80	34	4.2	5.6	3.8	2.9
16	62	16	68	18	14	111	75	28	3.9	4.6	7.2	2.9
17	75	13	118	17	19	104	68	23	5.4	4.6	6.2	1.4
18	76	11	132	17	30	98	64	25	25	4.3	4.5	1.0
19	68	12	143	16	70	94	58	22	37	7.6	3.3	.70
20	49	11	108	16	150	90	53	26	19	6.2	2.1	.25
21	29	7.2	93	16	800	85	49	26	5.1	10	1.7	.25
22	19	6.7	87	16	1500	80	45	27	4.3	28	7.4	.59
23	15	11	80	15	1930	79	46	21	4.8	25	8.2	14
24	9.3	13	70	15	1770	88	47	21	660	15	8.6	35
25	7.8	11	61	15	1040	90	45	21	664	12	12	55
26	6.1	13	57	14	423	83	45	28	210	7.1	12	34
27	12	19	110	13	228	78	43	41	129	5.4	9.6	25
28	14	25	365	13	187	82	41	31	135	6.2	7.6	17
29	14	23	507	12	---	93	41	22	113	4.4	9.1	25
30	15	24	211	12	---	85	40	22	77	11	8.4	42
31	16	---	72	11	---	91	---	28	---	8.2	7.4	---
TOTAL	847.9	1050.9	2470.0	707	8296.8	5232	2561	924	2232.4	490.4	173.0	313.50
MEAN	27.4	35.0	79.7	22.8	296	169	85.4	29.8	74.4	15.8	5.58	10.4
MAX	76	221	507	60	1930	915	211	47	664	60	12	55
MIN	6.1	6.7	3.0	11	8.6	78	40	21	1.5	4.3	1.2	.25
CFSM	.08	.10	.23	.07	.85	.48	.24	.09	.21	.05	.02	.03
IN.	.09	.11	.26	.08	.88	.56	.27	.10	.24	.05	.02	.03
AC-FT	1680	2080	4900	1400	16460	10380	5080	1830	4430	973	343	622

CAL YR 1984	TOTAL	160188.8	MEAN	438	MAX	10800	MIN	3.0	CFSM	1.26	IN.	17.07	AC-FT	317700
WTR YR 1985	TOTAL	25298.90	MEAN	69.3	MAX	1930	MIN	.25	CFSM	.20	IN.	2.70	AC-FT	50180

05486490 MIDDLE RIVER NEAR INDIANOLA, IA

LOCATION.--Lat 41°25'27", long 93°35'09", in SW1/4 SE1/4 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, and 4.6 mi northwest of Indianola.

DRAINAGE AREA.--503 mi².

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 (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, Sept. 1, 1952, to Sept. 30, 1962, water-stage recorder at site 1.6 mi downstream at datum 2.81 ft lower.

REMARKS.--Estimated daily discharges: Dec. 5-28, Jan. 1 to Feb. 23 and July 4-8. Records good except those for estimated discharges, which are poor. U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE.--45 years, 260 ft³/s, 7.02 in/yr, 188,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s June 13, 1947, gage heights: 26.40 ft, from floodmark, former site and datum; 28.27 ft, from floodmark, present site and datum; minimum daily, 0.11 ft³/s July 2, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1430	ice jam	*15.97	June 24	0330	*3,470	15.09

Minimum discharge, 5.0 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	236	46	155	42	290	146	119	55	83	30	12
2	18	250	45	130	42	285	196	130	56	68	28	11
3	17	223	44	110	42	396	247	117	58	58	28	10
4	20	124	44	94	42	1800	262	96	55	54	27	12
5	21	91	39	90	42	917	257	90	54	50	24	10
6	24	77	34	84	43	400	208	83	49	46	22	9.1
7	24	68	30	76	43	307	179	75	47	44	20	8.4
8	21	62	27	72	43	272	155	68	42	40	19	8.9
9	36	59	30	66	44	237	139	62	40	36	19	9.0
10	28	60	32	64	44	211	131	60	36	35	20	9.0
11	32	61	31	60	44	206	124	59	41	32	28	8.2
12	25	60	32	56	44	199	120	65	52	32	25	8.4
13	22	62	31	53	45	189	115	67	48	32	19	8.0
14	24	59	31	50	45	182	112	71	48	33	18	8.1
15	57	55	33	49	47	172	119	63	42	37	17	8.8
16	79	50	45	48	48	162	111	59	38	30	15	8.3
17	141	49	90	47	50	150	104	59	139	28	14	8.0
18	140	49	160	46	80	141	103	57	53	27	13	7.7
19	145	49	140	45	160	135	106	55	40	29	14	8.8
20	85	45	130	44	300	130	101	65	32	35	15	6.6
21	68	43	150	44	800	125	103	105	32	86	14	8.2
22	57	43	160	44	1100	121	103	77	38	94	30	10
23	48	49	150	44	1600	123	105	62	200	57	54	28
24	42	56	160	43	1930	127	108	58	1710	43	27	45
25	43	52	170	43	1090	126	113	57	600	41	19	55
26	46	52	180	42	620	121	113	55	306	37	16	49
27	44	49	300	42	392	116	110	77	215	34	15	34
28	39	49	600	42	300	116	101	60	166	35	15	26
29	36	49	808	42	---	115	94	52	155	34	13	50
30	36	50	369	42	---	115	96	68	111	32	12	379
31	37	---	207	42	---	134	---	68	---	31	12	---
TOTAL	1475	2281	4348	1909	9122	8120	4081	2259	4558	1353	642	864.5
MEAN	47.6	76.0	140	61.6	326	262	136	72.9	152	43.6	20.7	28.8
MAX	145	250	808	155	1930	1800	262	130	1710	94	54	379
MIN	17	43	27	42	42	115	94	52	32	27	12	6.6
CFSM	.09	.15	.28	.12	.65	.52	.27	.14	.30	.09	.04	.06
IN.	.11	.17	.32	.14	.67	.60	.30	.17	.34	.10	.05	.06
AC-FT	2930	4520	8620	3790	18090	16110	8090	4480	9040	2680	1270	1710

CAL YR 1984	TOTAL	183880	MEAN	502	MAX	8300	MIN	17	CFSM	.00	IN.	13.60	AC-FT	364700
WTR YR 1985	TOTAL	41012.5	MEAN	112	MAX	1930	MIN	6.6	CFSM	.22	IN.	3.03	AC-FT	81350

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, and 2.2 mi southwest of Ackworth.

DRAINAGE AREA.--460 mi².

PERIOD OF RECORD.--February 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. 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, gage, all at site 4.0 mi downstream at datum 8.06 ft lower.

REMARKS.--Estimated daily discharges: Nov. 8-19, Dec. 3, 7-28, Jan. 1 to Feb. 28, June 1-18. Records good except those for estimated discharges, which are poor. U.S. Army Corps of Engineers Data Collection Platform at station.

AVERAGE DISCHARGE.--45 years, 246 ft³/s, 7.26 in/yr, 178,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s June 5, 1947, gage height, 24.60 ft, site and datum then in use; maximum gage height, 32.85 ft July 5, 1981; no flow Sept. 19 to Oct. 13, 1956.

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 ft³/s, at site 4.0 mi downstream.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 24	0045	*5,700	*18.08	No other peak greater than base discharge.			

Minimum daily discharge, 2.7 ft³/s June 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	114	16	88	16	256	329	74	12	57	88	11
2	5.0	100	15	50	16	205	337	59	11	48	32	9.2
3	5.0	57	15	44	16	569	261	40	9.5	40	15	8.2
4	6.6	31	14	39	16	2370	195	31	8.1	36	11	7.7
5	7.1	15	13	35	16	590	163	30	7.0	29	10	7.6
6	6.7	12	11	33	16	329	143	37	6.2	25	8.4	7.5
7	6.9	11	12	31	16	287	119	27	4.9	22	7.5	6.9
8	7.0	12	12	29	16	234	101	21	4.0	20	6.7	6.7
9	7.9	208	12	27	16	190	93	17	3.2	18	7.2	6.0
10	10	249	13	25	16	177	92	15	3.2	16	47	6.3
11	11	89	13	24	16	182	89	25	4.9	14	59	8.2
12	9.5	46	13	22	16	166	85	42	4.6	14	23	8.5
13	7.4	33	14	21	16	151	78	36	2.7	14	23	11
14	9.3	28	18	20	16	140	72	29	8.6	23	57	12
15	49	23	30	19	17	122	70	20	5.5	48	116	14
16	74	19	80	19	17	117	64	18	276	45	45	14
17	72	17	110	18	18	105	62	18	368	19	21	11
18	56	15	100	17	19	99	58	14	64	13	13	9.7
19	61	15	92	17	60	96	53	12	35	20	13	9.6
20	37	17	82	17	200	88	50	239	23	33	9.3	8.1
21	19	18	78	17	700	82	49	161	17	33	8.7	10
22	15	23	76	17	1860	78	47	73	12	17	148	14
23	9.1	17	80	17	2880	88	49	49	422	11	311	58
24	8.3	17	84	16	1580	97	46	47	2930	9.1	80	159
25	12	18	78	16	761	85	41	40	331	24	71	62
26	15	19	82	16	434	80	40	28	382	15	41	26
27	12	18	110	16	201	87	41	23	1060	26	27	11
28	33	24	230	16	192	187	38	23	223	13	19	6.3
29	16	23	341	16	---	165	35	16	109	8.7	15	112
30	11	18	160	16	---	114	40	115	74	12	12	1370
31	11	---	105	16	---	248	---	55	---	17	12	---
TOTAL	615.1	1306	2109	774	9163	7784	2940	1434	6421.4	739.8	1356.8	2011.5
MEAN	19.8	43.5	68.0	25.0	327	251	98.0	46.3	214	23.9	43.8	67.0
MAX	74	249	341	88	2880	2370	337	239	2930	57	311	1370
MIN	5.0	11	11	16	16	78	35	12	2.7	8.7	6.7	6.0
CFSM	.04	.09	.15	.05	.71	.55	.21	.10	.47	.05	.10	.15
IN.	.05	.11	.17	.06	.74	.63	.24	.12	.52	.06	.11	.16
AC-FT	1220	2590	4180	1540	18170	15440	5830	2840	12740	1470	2690	3990

CAL YR 1984	TOTAL	133546.1	MEAN	365	MAX	6650	MIN	5.0	CFSM	.79	IN.	10.80	AC-FT	264900
WTR YR 1985	TOTAL	36654.6	MEAN	100	MAX	2930	MIN	2.7	CFSM	.22	IN.	2.96	AC-FT	72700

05487980 WHITE BREAST CREEK NEAR DALLAS, IA

LOCATION.--Lat 41°14'41", long 93°16'08", in NW1/4 NW1/4 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, and 1.7 mi northwest of Dallas.

DRAINAGE AREA.--342 mi².

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 759.21 ft above NGVD.

REMARKS.--Estimated daily discharges: Oct. 1-7, Dec. 3-10, 13, 19, 22, Jan. 1 to Feb. 23, and Mar. 4. Records good except those for estimated discharges, which are poor. U.S. Army Corps of Engineers Data Collection Platform at station.

COOPERATION.--One discharge measurement provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--23 years, 203 ft³/s, 8.06 in/yr, 147,100 acre-ft/yr; median of yearly mean discharges, 160 ft³/s, 6.4 in/yr, 116,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,300 ft³/s July 16, 1982, gage height, 33.45 ft; minimum daily, 0.07 ft³/s Sept. 29, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 11, 1962, reached a stage of 28.87 ft, from floodmark, discharge, about 12,000 ft³/s. Flood of June 6, 1947, may have been slightly higher.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1745	ice jam	*17.53	June 24	0215	3,150	14.91
Mar. 4	1000	*3,720	15.99				

Minimum daily discharge, 1.2 ft³/s Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	185	6.1	54	8.9	236	398	39	7.9	16	843	10
2	15	132	5.9	40	8.9	193	319	35	5.7	12	112	8.6
3	11	68	5.0	30	9.0	880	222	29	4.2	10	47	7.6
4	10	47	4.0	21	9.0	3280	162	22	3.6	8.0	27	6.6
5	11	26	3.5	19	9.0	1240	132	17	4.4	6.0	19	5.2
6	10	17	3.2	17	9.0	356	118	17	4.1	4.8	15	4.9
7	9.6	12	3.5	16	9.0	262	95	14	3.8	4.3	11	3.7
8	9.4	7.8	3.6	15	9.0	210	78	12	3.2	3.9	7.5	2.6
9	9.5	250	3.9	14	9.0	163	68	9.0	2.3	3.9	6.4	2.1
10	12	105	4.1	13	9.0	144	66	7.6	2.7	3.5	54	2.0
11	25	56	4.3	12	9.0	147	66	21	5.3	3.2	187	2.0
12	11	33	18	12	9.0	136	63	50	6.2	2.9	65	1.8
13	7.2	25	19	11	9.0	119	58	29	3.0	3.4	91	1.8
14	24	25	20	11	9.2	103	56	22	73	12	54	1.7
15	103	19	53	10	9.6	87	55	20	24	23	138	1.5
16	155	11	421	10	11	82	51	15	271	35	117	1.4
17	115	11	202	9.8	13	71	49	14	727	30	36	1.2
18	239	13	103	9.6	25	66	52	13	59	13	18	1.2
19	167	11	94	9.4	100	65	39	9.7	26	10	12	1.2
20	78	8.2	82	9.2	200	58	36	143	16	11	7.5	1.4
21	37	5.5	75	9.2	600	54	34	50	12	18	5.2	2.0
22	22	5.6	68	9.2	900	51	34	26	44	20	115	2.9
23	15	7.6	62	8.8	1300	56	39	18	159	10	838	648
24	7.1	8.2	49	8.7	1840	59	35	21	1910	5.7	259	706
25	8.9	10	41	8.8	1210	53	29	17	320	38	85	155
26	13	11	135	8.8	734	50	27	13	95	42	47	74
27	11	11	342	8.7	337	57	26	11	114	42	30	41
28	24	12	368	8.8	213	116	25	10	56	17	21	26
29	9.0	11	353	8.8	---	92	24	7.9	33	8.3	16	199
30	7.2	9.5	159	8.7	---	87	24	53	22	8.7	13	2420
31	4.8	---	76	8.8	---	261	---	19	---	506	12	---
TOTAL	1200.7	1153.4	2787.1	440.3	7618.6	8834	2480	784.2	4017.4	931.6	3308.6	4342.4
MEAN	38.7	38.4	89.9	14.2	272	285	82.7	25.3	134	30.1	107	145
MAX	239	250	421	54	1840	3280	398	143	1910	506	843	2420
MIN	4.8	5.5	3.2	8.7	8.9	50	24	7.6	2.3	2.9	5.2	1.2
CFSM	.11	.11	.26	.04	.80	.83	.24	.07	.39	.09	.31	.42
IN.	.13	.13	.30	.05	.83	.96	.27	.09	.44	.10	.36	.47
AC-FT	2380	2290	5530	873	15110	17520	4920	1560	7970	1850	6560	8610

CAL YR 1984	TOTAL	107430.7	MEAN	294	MAX	4420	MIN	2.3	CFSM	.86	IN.	11.69	AC-FT	213100
WTR YR 1985	TOTAL	37898.3	MEAN	104	MAX	3280	MIN	1.2	CFSM	.30	IN.	4.12	AC-FT	75170

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 07100008, at outlet works near right end of Red Rock Dam on Des Moines River, 1.4 mi upstream from Lake Creek, 4.5 mi southwest of Pella and at mile 142.3.

DRAINAGE AREA.--12,323 mi².

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD (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 NGVD. Maximum design discharge through the conduits is 37,500 ft³/s but normal flood control operation limits maximum outflow to 30,000 ft³/s. Spillway section consists of 5 tainter gates, 41 ft wide and 46 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 1,790,000 acre-ft, surface are, 65,500 acres and that of conservation pool level, 728 feet, is 89,000 acre-feet, surface area, 9,980 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Normal operation will maintain an elevation of 728 ft with minimum release of 300 ft³/s and maximum release of 30,000 ft³/s during the non-growing season, providing discharges at Ottumwa and Keosauqua do not exceed 30,000 ft³/s and 35,000 ft³/s respectively.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,765,000 acre-ft June 25, 1984; maximum elevation, 779.61 ft June 25, 1984; minimum daily contents, 43,900 acre-ft May 24, 1985, minimum elevation, 719.68 ft Feb. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 82,600 acre-ft Mar. 6; maximum elevation, 733.89 ft Mar. 7, minimum daily contents, 43,900 acre-ft May 24; minimum elevation, 727.18 ft Jan. 2.

Capacity table (elevation, in feet, and contents, in acre-feet)

722	45,600	740	256,000	760	789,000
725	63,400	745	357,000	765	983,000
730	110,000	750	479,000	770	1,213,000
735	174,000	755	623,000		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66200	64300	64500	48300	49000	49400	48100	47100	45800	47500	48200	58000
2	66600	64600	64800	46500	49500	48800	48000	47700	45800	47000	47800	58400
3	66700	65200	64600	48400	49400	51000	47600	46300	45800	46100	47000	58700
4	67000	65400	64500	48800	48900	70000	47200	46400	45700	46500	46700	58500
5	67100	64900	64500	47400	48800	79700	46900	46900	45800	47400	46700	58600
6	67500	64900	64300	49300	48900	82600	46400	45400	45900	47600	46700	58800
7	67600	65300	64900	51000	48900	79100	47100	45400	46200	47600	46600	58300
8	67100	65600	66000	50800	48900	69000	46200	45800	46400	47200	46700	58400
9	66600	66200	66000	49500	48900	59700	44900	47000	46200	47400	47000	58000
10	66200	66200	64400	49700	48900	54600	45300	47600	46200	47600	47000	57700
11	66200	65700	62400	50800	49000	52200	45300	47600	46500	47800	47200	58000
12	66000	65300	60300	51100	49000	51900	45800	47000	46500	47800	47800	58400
13	65600	64800	57900	51000	49000	51300	46400	46400	46300	47800	48000	58000
14	65200	65000	56200	50700	48900	49900	46200	46800	46500	48100	47800	58100
15	66100	65000	54700	50200	48800	50200	45900	47100	47100	48300	47600	58200
16	67100	64700	55300	49600	48900	50700	45600	45900	47300	48400	47600	58000
17	66900	64700	56300	49400	48800	50200	46300	45500	47600	48400	47600	57600
18	69000	64800	55200	49400	49100	49200	46500	46600	47400	48200	47500	57300
19	69100	64700	54000	49900	49600	48700	46300	47600	46900	48100	47500	57700
20	68000	64400	53400	50100	49700	48400	46200	46900	46600	47700	47400	58200
21	66500	64600	55400	50100	57800	48000	45900	46000	47100	47400	47400	57800
22	64500	65000	55600	50100	67400	47700	46100	45000	47300	47300	48300	57500
23	64100	65200	55500	50100	69500	47500	46400	44100	48100	47400	49700	58300
24	63800	65400	53600	50200	71600	47300	45600	43900	50700	48000	51300	59500
25	64300	65600	49800	50200	64600	47800	45900	45200	48600	49000	53000	60100
26	64300	65800	49600	50100	59400	49000	47100	47200	48500	48500	54600	59000
27	64500	65600	52600	50100	54700	48400	46200	47500	48400	48100	55800	57600
28	64300	65100	56400	50100	50700	48400	45200	47200	46500	47800	56600	57200
29	63700	64900	56200	50000	---	47700	46800	46900	46700	47600	57400	58800
30	63500	64800	54500	50000	---	47500	47500	46500	47500	47900	57800	60800
31	64200	---	52900	49000	---	47800	---	45900	---	47800	57800	---
MEAN	66000	65100	58300	49700	52700	54000	46400	46400	46900	47700	49600	58300
MAX	69100	66200	66000	51100	71600	82600	48100	47700	50700	49000	57800	60800
MIN	63500	64300	49600	46500	48800	47300	44900	43900	45700	46100	46600	57200

CAL YR 1984 MEAN 436000 MAX 1765000 MIN 49600
WTR YR 1985 MEAN 53400 MAX 82600 MIN 43900

05488500 DES MOINES RIVER NEAR TRACY, IA

LOCATION.--Lat 41°16'53", long 92°51'34", in NW1/4 SE1/4 sec.19, T.75 N., R.17 W., Mahaska County, Hydrologic Unit 07100009, on right bank 250 ft upstream from abandoned Bellefountaine Bridge, 0.5 mi downstream from bridge on old State Highway 92 (now relocated), 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 at mile 130.4.

DRAINAGE AREA.--12,479 mi².

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. Prior to June 26, 1940, 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.--Estimated daily discharges: Jan. 12 to Feb. 18. Records good except those for estimated 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 gage-height telemeter and Data Collection Platform at station.

COOPERATION.--Five discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--65 years, 5,010 ft³/s, 5.45 in/yr, 3,630,000 acre-ft/yr; median of yearly mean discharges 4,160 ft³/s, 4.5 in/yr, 3,010,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 155,000 ft³/s, June 14, 1947, gage height, 26.5 ft; minimum daily, 40 ft³/s Jan. 29 to Feb. 1, 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 ft³/s. Minimum daily discharge since at least 1910, that of Jan. 29 to Feb. 1, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,400 ft³/s Feb. 25, gage height, 11.80 ft; minimum daily discharge, 351 ft³/s Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	516	2830	2400	8360	1800	7220	5670	13300	4960	3460	1280	795
2	516	4090	2120	7180	1500	5650	6420	12500	4640	3870	1280	790
3	555	4110	1860	3270	1700	5010	6720	11400	4630	3640	1270	1310
4	696	4150	1880	3250	2000	6350	6910	10400	4570	3110	1180	2370
5	698	4200	1980	4310	1800	5540	7010	9200	4290	2740	893	2110
6	692	3750	2200	3120	1500	5470	7740	9180	4040	2710	764	1520
7	784	2780	1740	2160	1400	8200	8390	8740	3560	2710	748	1740
8	1140	2760	1400	4560	1400	13700	9600	8170	3540	2700	691	2400
9	1320	2990	1820	5370	1350	12600	10300	7790	3820	2530	554	2920
10	1310	3050	3040	4410	1300	9640	9350	7220	3940	2250	509	5380
11	1350	3430	3570	2750	1300	7420	9020	7260	3330	2230	622	5550
12	1320	3420	3570	2700	1300	5350	8060	7210	3340	2210	394	5710
13	1310	3400	3640	2600	1300	6110	7550	6920	3320	2010	453	5940
14	1370	3260	3560	2600	1300	8430	6800	6510	3340	1680	654	5080
15	1410	3290	3580	2700	1300	8230	6790	6470	3340	1660	669	3470
16	1710	3750	3780	2600	1300	7680	6480	6460	3720	1650	630	2670
17	2710	3550	3690	2400	1300	7670	5520	5800	4620	1640	516	2670
18	3250	3170	3930	2200	1300	7650	4790	4510	4740	1630	507	2670
19	3480	3150	3730	2100	1330	7170	5330	4820	4760	1620	508	2510
20	4020	3150	3650	2100	1930	6480	5340	5820	4440	1590	502	2250
21	4030	2910	2720	2100	4310	6480	5340	6460	3700	1580	464	2250
22	3400	2500	3390	2100	9670	6360	4920	6450	3320	1470	359	2270
23	2500	2490	4780	2100	15800	5990	4390	6330	3450	1210	361	2500
24	2340	2490	5470	2100	17400	5970	5130	5810	4980	1210	381	3040
25	2110	2490	6140	2100	19300	5560	5130	4700	9060	1310	357	3330
26	2090	2490	4460	2100	17900	4950	4870	4180	5820	1540	352	3550
27	2100	2700	2110	2100	13600	5490	7790	4710	5230	1540	352	3860
28	2220	3090	4480	2100	10600	6270	9790	6100	5810	1520	354	3360
29	2590	2870	8430	2100	---	6200	9850	6120	4020	1500	351	3410
30	2400	2470	9540	2100	---	5640	11400	6130	3270	1460	432	4210
31	2060	---	9690	2100	---	5190	---	5770	---	1310	787	---
TOTAL	57997	94780	118350	93840	137990	215670	212400	222440	129600	63290	19174	91635
MEAN	1871	3159	3818	3027	4928	6957	7080	7175	4320	2042	619	3055
MAX	4030	4200	9690	8360	19300	13700	11400	13300	9060	3870	1280	5940
MIN	516	2470	1400	2100	1300	4950	4390	4180	3270	1210	351	790
AC-FT	115000	188000	234700	186100	273700	427800	421300	441200	257100	125500	38030	181800

CAL YR 1984 TOTAL 4836837 MEAN 13220 MAX 42400 MIN 516 AC-FT 9594000
WTR YR 1985 TOTAL 1457166 MEAN 3992 MAX 19300 MIN 351 AC-FT 2890000

05489000 CEDAR CREEK NEAR BUSSEY, IA

LOCATION.--Lat 41°13'09", long 92°54'38", 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 8.9 mi upstream from mouth.

DRAINAGE AREA.--374 mi².

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 (levels by U.S. Army Corps of Engineers). Prior to Feb. 21, 1949, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 19 to Feb. 23, Feb. 26 to Mar. 5, Apr. 3-10. Records good except those for periods of estimated record, which are poor. U.S. Army Corps of Engineers Data Collection Platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--38 years, 215 ft³/s, 7.81 in/yr, 155,800 acre-ft/yr; median of yearly mean discharges, 180 ft³/s, 6.5 in/yr, 130,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,000 ft³/s July 3, 1982, gage height, 34.61 ft; no flow Sept. 6-20, 1955, Oct. 11, 12, 1956.

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 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	unknown	*5,090	*18.30	No other peak greater than base discharge.			

Minimum discharge, 3.5 ft³/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	1330	39	62	30	260	433	62	17	24	535	7.8
2	4.1	399	34	56	29	320	240	111	13	21	100	8.2
3	4.8	153	26	50	29	1000	196	69	11	18	55	8.4
4	4.9	106	23	45	29	4500	161	48	9.1	13	37	8.0
5	7.8	78	21	42	29	900	137	39	9.0	11	29	6.8
6	8.1	59	24	40	29	361	119	36	8.2	9.0	25	6.8
7	5.7	52	16	38	29	351	103	36	7.4	7.8	21	6.8
8	5.3	49	16	37	29	293	97	33	6.9	7.5	18	6.2
9	4.7	64	19	36	29	241	94	31	6.8	6.8	16	5.9
10	5.1	80	29	35	29	219	93	27	5.4	7.7	62	6.0
11	19	52	35	34	30	246	91	33	5.2	7.2	34	6.1
12	54	43	50	33	30	301	89	177	7.5	6.7	19	5.4
13	37	38	77	33	30	224	83	104	7.3	7.0	23	4.3
14	36	36	52	32	30	200	77	137	14	11	23	4.7
15	64	37	147	32	30	174	74	109	88	28	14	4.8
16	88	33	794	32	31	166	73	58	47	23	9.0	4.5
17	118	29	313	31	32	152	69	45	105	13	6.6	4.3
18	202	31	109	31	37	141	65	38	42	10	6.5	4.5
19	627	33	86	31	60	140	63	33	18	9.0	6.0	4.5
20	136	30	76	31	150	132	61	45	11	9.4	5.2	7.5
21	70	24	72	31	240	123	58	52	9.2	9.9	7.2	10
22	67	26	66	31	430	119	58	32	113	9.1	33	13
23	47	29	62	31	600	120	62	23	138	9.0	354	304
24	33	32	58	31	1170	131	63	21	568	7.1	97	322
25	29	33	54	31	1330	114	55	20	263	46	46	106
26	41	33	56	30	1000	107	49	19	81	67	28	83
27	42	45	100	30	600	109	48	18	160	39	20	65
28	266	77	540	30	320	144	50	24	83	23	15	36
29	122	59	400	30	---	156	52	20	50	15	12	51
30	60	46	210	30	---	120	48	22	32	17	10	1260
31	45	---	100	30	---	350	---	28	---	487	8.6	---
TOTAL	2257.7	3136	3704	1096	6441	11914	2961	1550	1936.0	979.2	1675.1	2371.5
MEAN	72.8	105	119	35.4	230	384	98.7	50.0	64.5	31.6	54.0	79.0
MAX	627	1330	794	62	1330	4500	433	177	568	487	535	1260
MIN	4.1	24	16	30	29	107	48	18	5.2	6.7	5.2	4.3
CFSM	.19	.28	.32	.09	.61	1.03	.26	.13	.17	.08	.14	.21
IN.	.22	.31	.37	.11	.64	1.19	.29	.15	.19	.10	.17	.24
AC-FT	4480	6220	7350	2170	12780	23630	5870	3070	3840	1940	3320	4700

CAL YR 1984	TOTAL	109913.8	MEAN	300	MAX	4180	MIN	4.1	CFSM	.80	IN.	10.93	AC-FT	218000
WTR YR 1985	TOTAL	40021.5	MEAN	110	MAX	4500	MIN	4.1	CFSM	.29	IN.	3.98	AC-FT	79380

05489500 DES MOINES RIVER AT OTTUMWA, IA

LOCATION.--Lat 41°00'39", long 92°24'40", in SE1/4 NE1/4 sec.25, T.72 N., R.14 W., Wapello County, Hydrologic Unit 07100009, on right bank 15 ft downstream from Wabash 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 at mile 94.1.

DRAINAGE AREA.--13,374 mi².

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. Prior to Sept. 30, 1930, nonrecording gages at Market Street Bridge 1,700 ft upstream at datum 0.83 ft higher. Oct. 1, 1930, to Mar. 31, 1935, nonrecording 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.--Estimated daily discharge: Dec. 29 to Jan. 1, Jan. 4 to Feb. 21, Aug. 14-17, Sept. 1-15, 17-30. Records good except those for periods of estimated record, which are poor. Prior to Dec. 12, 1958, and since Nov. 30, 1960, diurnal fluctuation at low flow caused by powerplant above station. Flow regulated by Lake Red Rock (station 05488100) 48.2 mi upstream, since March 12, 1969. U.S. Army Corps of Engineers gage-height telemeter and data collection platform at station.

COOPERATION.--Two discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--68 years, 5,431 ft³/s, 5.51/yr, 3,935,000 acre-ft/yr; median of yearly mean discharges, 4,610 ft³/s, 4.7 in/yr, 3,340,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 135,000 ft³/s June 7, 1947, gage height, 20.2 ft, site and datum then in use; minimum daily, 30 ft³/s Jan. 27-29, 31, Feb. 2, 3, 5-7, 1940.

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 National Weather Service, discharge, about 140,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,300 ft³/s Feb. 26, gage height, 9.79 ft; minimum daily, 250 ft³/s Sept. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	731	7170	2210	9800	2100	9890	6130	11200	5600	4430	1410	330
2	744	6380	2220	8660	1850	7390	6670	13100	4960	4000	1530	250
3	680	5220	1590	7940	1650	7510	6860	13700	4830	4050	1410	600
4	757	5050	1550	5310	2200	15600	7080	13400	4830	4040	1320	1150
5	837	4890	1690	3620	2000	11400	7140	12500	4630	3450	1230	2700
6	921	4840	880	4780	1800	6400	7510	11500	4380	2900	1100	2100
7	950	3490	1280	4380	1600	7130	8040	10800	3970	2770	963	1600
8	979	3120	1570	3970	1500	13600	8800	10100	3570	2670	863	1900
9	1360	2750	1520	4700	1450	14700	9970	9450	3640	2690	842	2400
10	1680	3900	3460	5900	1450	12000	10600	8800	4070	2480	833	3600
11	1840	3630	3990	3800	1400	8970	10200	7970	3800	2270	825	6000
12	2020	3710	3900	3100	1400	6800	9620	7840	3100	2140	805	6100
13	1800	3800	4090	3000	1400	5790	8830	7660	3250	2100	764	6200
14	1720	3630	4330	2900	1450	8070	7930	7460	3280	2030	370	6400
15	2080	3480	5220	3000	1400	8830	7240	7180	3280	1730	360	4000
16	2160	3750	5940	2900	1400	8070	7040	6950	3480	1600	540	2390
17	2940	4170	4400	2700	1400	7870	6720	6770	4260	1480	680	2500
18	4730	3660	4560	2500	1450	7780	5940	6320	4960	1440	771	2750
19	7540	3230	4180	2350	1650	7660	5250	5680	5030	1420	705	2900
20	5270	3300	4010	2300	2500	6680	5200	5440	4960	1390	682	2900
21	5090	3280	3030	2250	4600	6460	5190	5670	4200	1340	648	2500
22	4910	2660	3840	2250	9200	6430	5190	6070	3750	1420	615	2450
23	3330	2370	5590	2250	12300	6080	4910	6340	3620	1310	578	2500
24	2910	2290	5390	2250	15200	5940	4550	6460	3910	1100	577	3000
25	2460	2360	5870	2300	17600	5870	4830	6220	9980	1060	564	3350
26	2410	2410	5190	2300	19400	5010	4900	4760	10100	1070	520	3750
27	2320	2570	7470	2300	17300	4930	5010	4390	7810	1220	486	4100
28	3550	3310	7080	2200	14000	6300	6020	5920	6860	1320	655	4400
29	3120	3220	8600	2200	---	6370	7860	6310	6450	1300	632	3700
30	2900	2610	9900	2200	---	6110	9480	6460	5330	1340	581	4700
31	2520	---	10000	2200	---	6550	---	6410	---	1400	459	---
TOTAL	77259	110250	134550	112310	142650	248190	210710	248830	145890	64960	24318	93220
MEAN	2492	3675	4340	3623	5095	8006	7024	8027	4863	2095	784	3107
MAX	7540	7170	10000	9800	19400	15600	10600	13700	10100	4430	1530	6400
MIN	680	2290	880	2200	1400	4930	4550	4390	3100	1060	360	250

CAL YR 1984	TOTAL	5181692	MEAN	14160	MAX	46800	MIN	680
WTR YR 1985	TOTAL	1613137	MEAN	4420	MAX	19400	MIN	250

05490500 DES MOINES RIVER AT KEOSAUQUA, IA

LOCATION.--Lat 40°43'40", long 91°57'34", in SE1/4 SW1/4 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 at mile 51.3.

DRAINAGE AREA.--14,038 mi².

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. 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.--Estimated daily discharges during water year: Jan. 14 to Feb. 25, March 15-22, April 20-24, April 30 to May 15, May 28 to June 25 and Sept. 30. Records good except those for periods of estimated record, 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. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers data collection platform at station.

COOPERATION.--Four discharge measurements provided by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--76 years (water years 1904-05, 1912-85), 5,818 ft³/s, 5.63 in/yr, 4,215,000 acre-ft/yr; median of yearly mean discharges, 4,990 ft³/s, 4.8 in/yr, 3,620,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 146,000 ft³/s June 1, 1903, gage height, 27.85 ft, from floodmark, datum then in use; minimum daily, 40 ft³/s Jan. 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1851, reached a stage of 24 ft, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,200 ft³/s March 4, gage height, 18.95 ft; maximum gage height, 22.83 ft. Feb. 22, backwater from ice; minimum discharge, 222 ft³/s Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	970	14300	2600	9780	2200	12300	6920	14000	6800	3730	3210	510
2	1040	8960	2350	8770	2100	9000	6450	15000	5900	3440	2230	432
3	1070	5810	2310	6170	1900	7170	6730	16000	5200	3790	1680	705
4	877	4700	1790	3600	2200	20000	6930	15500	5000	3910	1140	873
5	969	4520	1770	2470	2250	15800	7240	15000	4900	3420	1360	1680
6	1060	4270	1180	3900	1900	8610	7510	13500	4700	2830	1460	2340
7	1180	4100	1220	4570	1700	6690	7860	12000	4300	2750	976	2100
8	1240	2820	1490	2960	1600	9470	8400	10500	3800	2550	857	1770
9	1290	2600	1850	4090	1550	14100	9550	9700	3600	2830	909	1990
10	1460	2680	1730	5370	1500	12800	10200	9000	4100	2740	805	2410
11	2000	2960	2830	4700	1500	11200	9330	8500	4000	2710	929	4800
12	2220	3300	3770	2710	1500	8880	9060	8200	3500	2640	956	5470
13	2210	3270	3720	2910	1500	6480	8100	7900	3300	2720	927	5650
14	2010	3270	4380	3050	1500	6130	7690	7600	3400	2550	393	5910
15	2160	3250	4820	3100	1500	8100	6870	7400	3500	1890	382	5480
16	2610	2960	4760	3050	1500	9200	6730	6720	4000	1680	630	4340
17	2270	3510	5710	2800	1500	8800	6590	6580	4600	1410	712	3180
18	3910	3600	4640	2600	1550	8200	5970	6120	5100	1500	798	2760
19	9580	3120	4100	2500	1950	8100	6070	4800	5300	1490	765	2790
20	5770	2930	4040	2400	3400	7800	5790	4820	5400	1500	416	2730
21	5050	2940	4110	2300	8000	7000	5500	5750	4900	1380	564	2620
22	4870	2930	3450	2300	11500	6600	5230	6430	4250	1540	590	2590
23	4240	2350	3340	2300	14500	6240	4960	6450	4000	1580	597	3260
24	2840	2240	4660	2300	17000	6010	4710	6430	5700	1270	563	3180
25	2740	2250	4690	2300	19500	5920	5110	6060	9700	1290	791	3660
26	2420	2530	4880	2350	22000	5630	5500	5140	10100	1370	742	3710
27	2560	2920	5790	2350	18800	5070	5040	4440	5990	1420	570	3290
28	3100	3220	5520	2300	14700	5570	9240	5600	5360	1860	1230	4020
29	3420	3340	7640	2300	---	6390	10700	6600	5980	1620	1540	3500
30	3180	3160	10200	2300	---	6320	12500	7000	4610	1840	631	4500
31	4200	---	10100	2250	---	6760	---	7100	---	10400	640	---
TOTAL	84516	114810	125440	106850	162300	266340	218480	265840	150990	77650	29993	92250
MEAN	2726	3827	4046	3447	5796	8592	7283	8575	5033	2505	968	3075
MAX	9580	14300	10200	9780	22000	20000	12500	16000	10100	10400	3210	5910
MIN	877	2240	1180	2250	1500	5070	4710	4440	3300	1270	382	432
AC-FT	167600	227700	248800	211900	321900	528300	433400	527300	299500	154000	59490	183000

CAL YR 1984	TOTAL	5100646	MEAN	13940	MAX	43900	MIN	877	AC-FT	10117000
WTR YR 1985	TOTAL	1695459	MEAN	4645	MAX	22000	MIN	382	AC-FT	3363000

BIG SIOUX RIVER BASIN

06483500 ROCK RIVER NEAR ROCK VALLEY, IA

LOCATION.--Lat 43°12'52", long 96°17'39", in SW1/4 SW1/4 sec.16, T.97 N., R.46 W., Sioux County, Hydrologic Unit 10170204, on left bank 3 ft upstream from bridge on county highway K30, 0.3 mi north of Rock Valley and at mile 19.1.

DRAINAGE AREA.--1,592 mi².

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. 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.--Estimated daily discharges: Dec. 3 to Mar. 6, Mar. 8-18, Apr. 3-5, 21-23, May 14 to June 5 and Aug. 1 to Sept. 10. Records good except estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--37 years, 399 ft³/s, 3.40 in/yr, 289,100 acre-ft/yr; median of yearly mean discharges, 300 ft³/s, 2.6 in/yr, 217,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,400 ft³/s Apr. 7, 1969, gage height, 17.32 ft; site and datum then in use, no flow for many days during winter period in 1959 and 1977.

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.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 12	unknown	6,800	13.20	May 31	1100	4,200	11.42
Apr. 24	1415	*12,500	*16.07	Sept. 6	unknown	5,440	12.53

Minimum daily discharge, 50 ft³/s Feb. 5-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	493	320	190	55	180	475	1980	3100	1110	160	440
2	158	467	314	180	55	150	485	1750	1700	969	150	355
3	156	460	300	180	55	140	640	1550	1600	858	135	330
4	155	469	260	180	55	130	1400	1410	1350	768	130	380
5	161	461	350	180	50	150	1800	1270	1200	691	125	2400
6	186	442	320	185	50	200	1700	1180	1090	624	120	5100
7	211	431	300	190	50	318	1200	1110	999	556	115	2900
8	237	425	300	190	50	1200	960	1050	927	501	115	1900
9	242	422	310	175	50	2500	823	980	854	465	110	1450
10	241	415	330	160	50	4100	754	921	804	422	115	1150
11	240	396	330	135	50	4200	707	904	818	388	110	998
12	253	386	330	110	50	6400	678	1410	813	361	145	904
13	307	389	310	100	50	5600	660	1140	774	342	225	1020
14	322	395	300	90	50	3200	660	1100	746	337	245	1590
15	416	392	320	85	50	2400	663	2400	730	323	210	1900
16	1110	344	350	80	50	2200	656	2700	687	302	190	1610
17	1530	360	400	75	55	1700	646	2300	654	279	175	1380
18	1330	364	370	75	55	1500	625	1900	613	260	175	1220
19	1340	326	350	70	55	1100	611	1650	588	241	165	1080
20	1380	305	340	70	60	899	620	1500	563	224	155	970
21	1280	297	320	65	65	788	650	1350	540	214	150	902
22	1000	380	300	65	75	694	2400	1200	517	204	150	890
23	830	381	280	60	90	657	7500	1100	490	193	170	961
24	733	365	260	60	130	644	1700	1050	463	186	190	1020
25	679	361	250	60	180	618	8580	1050	446	193	190	1050
26	648	366	250	60	250	583	4630	1050	812	206	180	1010
27	626	361	250	60	220	593	4200	900	1550	194	165	966
28	590	328	270	60	200	602	3310	820	1990	166	175	914
29	556	327	250	60	---	590	2630	880	1680	153	410	902
30	527	342	220	60	---	554	2240	1130	1340	149	695	1020
31	505	---	200	60	---	528	---	3500	---	149	780	---
TOTAL	18108	11650	9354	3370	2255	45118	64603	44235	30438	12028	6325	38712
MEAN	584	388	302	109	80.5	1455	2153	1427	1015	388	204	1290
MAX	1530	493	400	190	250	6400	11700	3500	3100	1110	780	5100
MIN	155	297	200	60	50	130	475	820	446	149	110	330
CFSM	.37	.24	.19	.07	.05	.91	1.35	.90	.64	.24	.13	.81
IN.	.42	.27	.22	.08	.05	1.05	1.51	1.03	.71	.28	.15	.90
AC-FT	35920	23110	18550	6680	4470	89490	128100	87740	60370	23860	12550	76790

CAL YR 1984	TOTAL	589671	MEAN	1611	MAX	14700	MIN	149	CFSM	1.01	IN.	13.78	AC-FT	1170000
WTR YR 1985	TOTAL	286196	MEAN	784	MAX	11700	MIN	50	CFSM	.49	IN.	6.69	AC-FT	567700

06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW1/4 SW1/4 sec.31, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank at west edge of Akron, 0.6 mi downstream from bridge on State Highway 48, and 2.3 mi upstream from Union Creek.

DRAINAGE AREA.--8,424 mi², approximately, of which about 1,487 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

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.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft upstream at same datum.

REMARKS.--Records good except those for the winter period, Dec. 13 to Mar. 8, which are poor, and May 30 to July 17, which are fair. U.S. Army Corps of Engineers satellite data-collection platform at station.

AVERAGE DISCHARGE.--57 years, 982 ft³/s, (711,500 acre-ft/yr); median of yearly mean discharges, 750 ft³/s, (543,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s Apr. 9, 1969, (gage height, 22.99 ft); minimum daily, 4.0 ft³/s Jan. 17, 1977.

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

Date	Time	Discharge (ft³/s)	Gage height (m)	Date	Time	Discharge (ft³/s)	Gage height (m)
Mar. 14	0800	10,100	17.03	June 1	1900	5,180	14.13
Apr. 6	1800	5,400	14.48	Aug. 29	1100	4,120	12.98
Apr. 26	0630	*21,000	*20.29	Sept. 7	1845	3,880	12.71
May 18	1400	3,720	12.56				

Minimum daily discharge, 290 ft³/s Feb. 6-17

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	620	2090	1090	1100	330	1400	4310	6480	4850	2210	701	1310
2	640	1940	1070	1000	320	1500	3890	5910	5050	1930	689	1150
3	660	1850	963	960	310	1600	3670	5120	4680	1740	677	1050
4	652	1770	672	900	310	1700	3590	4440	3870	1580	671	983
5	646	1700	700	800	300	1300	3700	3920	3370	1450	652	1090
6	669	1650	699	760	290	1200	4830	3530	3110	1340	631	2410
7	714	1600	903	730	290	1200	4830	3310	2910	1230	610	3640
8	733	1550	983	700	290	1400	4560	3150	2700	1140	589	3140
9	764	1530	955	650	290	2460	3800	3000	2490	1070	569	2630
10	751	1520	996	620	290	3080	3380	2870	2300	996	558	2490
11	774	1470	1020	600	290	3540	3180	2770	2180	927	550	2300
12	792	1410	1040	570	290	4640	3060	2740	2110	869	591	2140
13	815	1360	1050	540	290	8480	2950	2870	2040	828	680	2310
14	869	1330	1040	520	290	9810	2880	2820	1910	793	776	2480
15	958	1320	1020	500	290	8290	2820	2900	1810	769	833	2760
16	1050	1300	1000	490	290	7860	2770	3230	1730	766	798	2960
17	1560	1250	1100	480	290	7640	2710	3530	1660	752	766	2850
18	2170	1210	1200	470	295	8240	2660	3700	1580	728	765	2710
19	2270	1190	1300	470	300	8670	2600	3540	1510	756	780	2610
20	2480	1160	1300	460	330	7960	2580	3430	1430	764	767	2510
21	3120	1080	1300	450	360	7660	2580	3200	1360	745	735	2390
22	3300	999	1300	440	400	7220	4780	3020	1310	719	708	2310
23	3140	1060	1300	440	490	7740	7190	2860	1250	698	699	2300
24	3080	1090	1300	440	600	8800	9630	2700	1170	686	702	2320
25	3150	1130	1270	430	750	9090	16200	2600	1100	681	765	2330
26	3270	1140	1250	420	1100	8570	18800	2520	1170	695	800	2280
27	3350	1140	1200	410	1500	7440	13700	2390	1490	764	716	2180
28	3190	1150	1170	390	1400	6370	10100	2260	2100	768	679	2070
29	2820	1150	1150	370	---	5870	8500	2190	2450	735	2520	2000
30	2470	1110	1150	350	---	5340	7340	2370	2480	701	1460	2010
31	2240	---	1150	340	---	4820	---	3250	---	702	1530	---
TOTAL	53717	41249	33641	17800	12575	170890	167590	102620	69170	30532	24967	67713
MEAN	1733	1375	1085	574	449	5513	5586	3310	2306	985	805	2257
MAX	3350	2090	1300	1100	1500	9810	18800	6480	5050	2210	2520	3640
MIN	620	999	672	340	290	1200	2580	2190	1100	681	550	983
AC-FT	10650	81820	66730	35310	24940	339000	332400	203500	137200	60560	49520	134300

CAL YR 1984 TOTAL 1631900 MEAN 4459 MAX 49000 MIN 440 AC-FT 3237000
WTR YR 1985 TOTAL 792464 MEAN 2171 MAX 18800 MIN 290 AC-FT 1572000

06486000 MISSOURI RIVER AT SIOUX CITY, IA
(National stream-quality accounting network station)

LOCATION.--Lat. 42°29'09", long 96°24'49", in NW1/4 SE1/4 sec.16 T.29 N., R.9 E., sixth prinicipal meridian, Dakota County, Nebraska, Hydrologic Unit 10230001, on right bank on 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 at mile 732.2.

DRAINAGE.--314,600 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1897 to current year in reports of 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. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gauges 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 dwonstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 25, 30, Jan. 1, 2, 11, 12, 15, 16, 20-22, 25, Jan. 28 to Feb. 5 and Feb. 9, 10. Records good except for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. U.S. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--88 years 32,050 ft³/s, 23,220,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft³/s Apr. 14, 1952, gage height, 24.28 ft, datum then in use; minimum, 2,500 ft³/S Dec. 29, 1941; minimum gage height, 9.00 ft Jan. 8, 1980, based on gage readings at site 14 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharges, 56,600 ft³/s Apr. 23 gage height, 23.94 ft; minimum daily discharge, 17,000 ft³/S Jan. 31; minimum gage height not determind, occurred during period of no gage-height record Jan. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46200	48700	45800	19600	18600	23200	32800	32100	33600	35000	32900	31900
2	46400	48000	44000	19000	20300	23300	32800	31800	35700	34500	32700	32900
3	46100	47800	40500	20600	20600	24000	33000	31800	36100	33900	33000	33000
4	45600	47800	36700	21900	20400	27900	33800	31200	35300	33700	32600	32600
5	46000	47800	33800	21700	20300	24400	33000	30800	33600	33300	32300	32800
6	46500	47800	31700	21200	20000	23400	32700	30800	32700	32500	32200	33000
7	47200	47700	31000	20800	20100	23900	32900	31400	34000	31700	32300	33500
8	46600	47600	29800	20700	20300	24300	33000	32400	34600	31000	32300	33000
9	46500	48000	27100	20600	20300	25200	32000	32800	34000	31200	32300	31400
10	46700	48200	26500	20800	20400	26800	31400	33300	33600	31200	32400	31800
11	46600	47300	26300	20500	19900	27800	31700	33100	33700	31500	32000	31800
12	46800	47000	26300	20300	20400	28900	31800	33500	33500	31600	33000	32000
13	46700	47100	24900	21100	20800	29200	31200	33100	33200	31800	32700	33700
14	46700	47500	25400	22200	20600	30200	30900	34400	33300	32000	32400	33600
15	47700	47600	26700	19800	20800	32200	30800	33400	33600	32200	32400	32200
16	47200	46900	27100	19900	21100	32200	30600	31800	33700	32400	32500	32900
17	46800	46500	25800	20900	21300	32100	30600	31100	33400	33500	33200	32800
18	47200	46400	24200	21500	21300	32400	30100	31300	32300	34300	32600	31600
19	49400	46300	25000	20500	21400	33000	30400	32500	32400	34500	32400	31900
20	49000	46300	24900	18500	21400	33700	30600	32200	32500	34000	32200	32200
21	48800	46200	24800	18400	22300	33600	31700	32200	32900	32400	32500	31900
22	49000	46100	22600	19700	22100	33500	37900	32100	33100	32000	32300	31800
23	48900	46000	21700	22000	22100	33500	49500	32100	32900	32200	32500	32100
24	49200	46300	21200	23500	22400	33300	43200	31900	32800	32500	32500	32000
25	49400	46500	19100	22900	23000	33600	30600	32600	33000	32700	32000	32000
26	49700	46600	21800	21900	23900	33900	31300	32700	35400	32600	31800	32000
27	50200	46300	22400	23500	23900	34600	33700	32400	39100	32600	31900	31800
28	50000	46000	23200	23500	23400	33600	31000	32100	36000	32600	31800	31800
29	49800	46000	21600	22600	---	33000	27400	32300	35500	32500	33400	32000
30	49300	46000	19500	23100	---	32600	26400	32700	35300	32600	34900	32200
31	48900	---	20700	17000	---	32800	---	33200	---	32800	31600	---
TOTAL	1481100	1410300	842100	650200	593400	926100	978800	1001100	1020800	1013300	1007600	970200
MEAN	47780	47010	27160	20970	21190	29870	32630	32290	34030	32690	32500	32340
MAX	50200	48700	45800	23500	23900	34600	49500	34400	39100	35000	34900	33700
MIN	45600	46000	19100	17000	18600	23200	26400	30800	32300	31000	31600	31400
AC-FT	2938000	2797000	1670000	1290000	1177000	1837000	1941000	1986000	2025000	2010000	1999000	1924000

CAL YR 1984 TOTAL 14184800 MEAN 38760 MAX 103000 MIN 16800 AC-FT28136000
WTR YR 1985 TOTAL 11895000 MEAN 32590 MAX 50200 MIN 17000 AC-FT23594000

06486000 MISSOURI RIVER AT SIOUX CITY, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year. Daily sediment loads October 1954 to September 1971 in reports of Corps of Engineers. Samples for particle-size distribution were collected from boat cross-section 0.2 mile downstream from gage.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1972 to September 1976, November 1977 to September 1981.
WATER TEMPERATURES: October 1971 to September 1976, November 1977 to September 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 950 microsiemens June 17, 19, 1981; minimum daily, 410 microsiemens Mar. 22, 1978.
WATER TEMPERATURES: Maximum daily, 28.0°C July 30, 1976 and Aug. 7, 1979; minimum daily, 0.0°C on many days during the winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,620 mg/L Nov. 20, 1972; minimum daily mean, 42 mg/L Dec. 29, 1975.
SEDIMENT LOADS: Maximum daily, 222,000 tons Nov. 20, 1972; minimum daily, 2,970 tons Dec. 29, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 1984												
15...	13:00	46100	825	8.0	5.5	18	11.6	96	734	K25	87	98
JAN 1985												
08...	12:30	21300	810	8.5	0.0	9.1	15.2	107	743	K11	K21	74
MAR												
12...	12:00	28900	681	8.1	2.0	57	13.2	100	732	39	160	100
MAY												
07...	13:00	30900	830	7.8	17.0	32	9.8	106	732	130	67	110
JUN												
25...	14:10	31100	760	8.1	24.5	21	7.6	96	727	28	29	71
AUG												
26...	14:45	31700	755	8.4	22.0	18	8.3	99	735	53	27	79

DATE	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1984												
15...	280	68	26	68	34	2	5.2	180	240	13	0.5	7.7
JAN 1985												
08...	280	71	26	71	35	2	5.1	210	230	13	0.5	8.8
MAR												
12...	260	65	23	51	30	1	5.9	155	200	11	0.4	10
MAY												
07...	290	72	27	59	30	2	6.5	180	230	11	0.5	9.9
JUN												
25...	250	62	24	69	37	2	5.5	183	220	11	0.4	6.2
AUG												
26...	260	66	24	67	35	2	5.5	185	220	10	0.5	7.3

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
NOV 1984												
15...	516	540	0.7	64200	0.28	0.04	0.05	1.4	0.02	--	0.01	0.09
JAN 1985												
08...	553	550	0.75	31800	0.48	0.05	0.06	0.8	0.02	--	0.01	0.07
MAR												
12...	448	460	0.61	35000	1.10	0.15	0.19	1.7	0.08	--	0.11	0.47
MAY												
07...	539	520	0.73	45000	0.56	0.07	0.09	1.0	0.03	--	0.04	0.09
JUN												
25...	514	510	0.7	43200	0.24	0.05	0.06	5.3	0.02	0.28	0.01	0.09
AUG												
26...	497	510	0.68	42500	<0.10	0.01	0.01	0.6	0.02	0.12	0.03	0.04

K Results based on colony count outside ideal range.

06486000 MISSOURI RIVER AT SIOUX CITY, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
NOV 1984												
15...	473	58900	14	2	<10	59	2	3	<1	<3	6	15
JAN 1985												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	921	71900	73	<1	10	120	2	--	<1	<3	2	16
MAY												
07...	343	28600	45	1	<10	<3	<0.5	3	1	<3	4	63
JUN												
25...	209	17500	53	--	--	--	--	--	--	--	--	--
AUG												
26...	233	19900	37	3	10	82	<0.5	<1	<1	<3	4	<3

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
NOV 1984											
15...	3	51	12	<0.1	<10	2	2	<1	570	<6	41
JAN 1985											
08...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	41	31	<0.1	10	4	2	<1	470	<6	22
MAY											
07...	35	49	3	<0.1	<10	3	2	<1	540	<6	<3
JUN											
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	<1	49	1	<0.1	<10	<1	2	<1	560	<6	6

06486000 MISSOURI RIVER AT SIOUX CITY, IA--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
OCT 1984												
11...	WATER TEMPERATURE, 16.0°C (1005-1300 HOURS); DISCHARGE, 45,000 ft³/s.											
11...	10:05	80.0	17.8	4.10	4.20	128	--	61	78	100	--	--
11...	10:10	80.0	--	8.90	4.02	169	--	55	75	98	100	--
11...	10:15	80.0	--	12.7	3.59	170	--	54	67	98	100	--
11...	10:20	80.0	--	14.8	2.81	4230	--	96	97	100	--	--
11...	10:25	80.0	--	16.0	2.76	303	--	27	47	96	100	--
11...	10:30	80.0	--	16.8	1.76	377	--	28	42	93	100	--
11...	10:40	180	18.0	4.20	5.32	218	--	48	63	100	--	--
11...	10:45	180	--	9.10	4.37	322	--	28	46	97	100	--
11...	10:50	180	--	13.0	3.42	465	--	19	30	89	100	--
11...	10:55	180	--	15.2	3.42	638	--	16	28	86	100	--
11...	11:00	180	--	16.4	3.57	536	--	15	25	80	100	--
11...	11:05	180	--	17.1	3.28	767	--	13	26	89	100	--
11...	11:10	305	17.6	4.10	5.85	--	--	--	--	--	--	--
11...	11:15	305	--	8.80	5.89	--	--	--	--	--	--	--
11...	11:20	305	--	12.6	4.59	--	--	--	--	--	--	--
11...	11:22	305	17.6	--	--	486	6	10	--	--	--	--
11...	11:25	305	--	14.7	4.80	--	--	--	--	--	--	--
11...	11:30	305	--	15.8	4.72	--	--	--	--	--	--	--
11...	11:35	305	--	16.6	4.65	--	--	--	--	--	--	--
11...	11:40	390	21.2	4.90	6.04	227	--	40	56	99	100	--
11...	11:45	390	--	10.6	5.37	260	--	33	50	98	100	--
11...	11:50	390	--	15.1	5.24	347	--	24	39	95	100	--
11...	11:55	390	--	17.7	4.74	547	--	17	27	93	100	--
11...	12:00	390	--	19.1	4.89	634	--	16	27	86	100	--
11...	12:04	390	--	20.0	4.15	712	--	14	24	82	100	--
11...	12:08	390	--	20.4	4.89	674	--	13	23	84	100	--
11...	12:10	470	21.2	4.90	5.82	158	--	52	69	97	100	--
11...	12:15	470	--	10.6	5.32	182	--	47	61	96	100	--
11...	12:20	470	--	15.1	4.70	350	--	23	30	70	100	--
11...	12:25	470	--	17.7	4.15	623	--	16	22	70	100	--
11...	12:30	470	--	19.1	3.55	750	--	11	15	58	98	100
11...	12:35	470	--	20.0	3.02	769	--	13	18	64	100	--
11...	12:40	470	--	20.4	3.02	856	--	9	16	61	100	--
MAY 1985												
02...	WATER TEMPERATURE, 16.0°C (0945-1330 HOURS); DISCHARGE, 31,700 ft³/s.											
02...	09:45	80.0	9.70	2.10	3.55	536	--	94	98	100	--	--
02...	09:55	80.0	--	4.60	3.22	569	--	91	95	100	--	--
02...	10:05	80.0	--	6.60	3.02	600	--	89	92	100	--	--
02...	10:15	80.0	--	7.70	2.61	657	--	83	88	99	100	--
02...	10:25	80.0	--	8.30	2.53	687	--	80	85	98	100	--
02...	10:30	190	11.8	2.70	4.00	561	--	87	92	100	--	--
02...	10:35	190	--	5.90	3.72	647	--	82	88	99	100	--
02...	10:40	190	--	8.40	3.42	656	--	79	84	99	100	--
02...	10:45	190	--	9.80	3.24	773	--	69	75	97	100	--
02...	10:50	190	--	10.6	2.61	809	--	69	74	94	100	--
02...	11:03	290	--	--	--	663	21	61	--	--	--	--
02...	11:05	290	17.2	4.00	4.96	--	--	--	--	--	--	--
02...	11:10	290	--	8.60	4.20	--	--	--	--	--	--	--
02...	11:15	290	--	12.3	3.76	--	--	--	--	--	--	--
02...	11:20	290	--	14.3	2.50	--	--	--	--	--	--	--
02...	11:25	290	--	15.5	3.17	--	--	--	--	--	--	--
02...	11:30	290	--	16.2	3.00	--	--	--	--	--	--	--
02...	11:45	385	19.6	4.50	5.39	435	--	72	92	100	--	--
02...	11:50	385	--	9.80	5.15	479	--	66	82	99	100	--
02...	12:05	385	--	14.0	4.20	611	--	62	80	98	100	--
02...	12:10	385	--	16.3	4.09	678	--	53	72	93	100	--
02...	12:15	385	--	17.6	3.68	847	--	45	59	79	100	--
02...	12:25	385	--	18.4	3.63	958	--	42	57	77	99	100
02...	12:30	475	20.8	4.80	5.39	339	--	77	91	99	100	--
02...	12:35	475	--	10.4	4.63	394	--	70	85	96	100	--
02...	12:40	475	--	14.9	4.46	350	--	80	92	98	100	--
02...	12:45	475	--	17.3	3.85	531	--	60	74	88	100	--
02...	12:50	475	--	18.7	3.39	432	--	59	69	83	100	--
02...	12:55	475	--	19.6	3.24	801	--	38	48	65	100	--

06486000 MISSOURI RIVER AT SIOUX CITY, IA--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUPSENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
JUN 1985												
06...	WATER TEMPERATURE, 20.0°C (0915-1245 HOURS); DISCHARGE, 31,500 ft³/s.											
06...	09:15	135	11.4	2.60	4.07	308	--	89	94	100	--	--
06...	09:20	135	--	5.70	4.04	336	--	81	84	98	100	--
06...	09:25	135	--	8.10	3.35	453	--	64	69	86	100	--
06...	09:30	135	--	9.50	2.33	585	--	53	56	75	100	--
06...	09:35	135	--	10.4	2.03	524	--	56	60	76	100	--
06...	09:55	260	14.0	3.20	4.37	215	--	69	81	99	100	--
06...	10:00	260	--	7.00	4.07	247	--	65	76	99	100	--
06...	10:05	260	--	10.0	3.94	289	--	57	66	98	100	--
06...	10:10	260	--	11.7	3.72	307	--	51	62	96	100	--
06...	10:15	260	--	12.6	3.09	460	--	35	46	80	100	--
06...	10:20	260	--	13.0	2.85	506	--	35	47	86	100	--
06...	10:30	355	19.8	4.60	5.00	--	--	--	--	--	--	--
06...	10:35	355	--	9.90	4.37	--	--	--	--	--	--	--
06...	10:40	355	--	14.1	3.72	--	--	--	--	--	--	--
06...	10:43	355	--	--	--	514	7	12	--	--	--	--
06...	10:45	355	--	16.5	3.50	--	--	--	--	--	--	--
06...	10:50	355	--	17.8	2.70	--	--	--	--	--	--	--
06...	10:55	355	--	18.6	2.16	--	--	--	--	--	--	--
06...	11:00	415	19.8	4.60	5.76	147	--	55	70	98	100	--
06...	11:05	415	--	9.90	4.96	189	--	48	62	100	--	--
06...	11:10	415	--	14.1	4.11	191	--	42	52	97	100	--
06...	11:15	415	--	16.5	4.11	242	--	32	59	93	100	--
06...	11:20	415	--	17.8	3.81	331	--	27	41	86	100	--
06...	11:25	415	--	18.6	3.33	526	--	16	29	85	100	--
06...	11:30	475	19.8	4.60	5.50	128	--	62	77	100	--	--
06...	11:35	475	--	9.90	5.17	122	--	63	74	97	100	--
06...	11:40	475	--	14.1	4.48	160	--	46	58	96	100	--
06...	11:45	475	--	16.5	4.35	247	--	34	41	82	100	--
06...	11:50	475	--	17.8	4.24	251	--	31	42	91	100	--
06...	11:55	475	--	18.6	3.89	364	--	22	27	61	98	100
JUL 1985												
18...	WATER TEMPERATURE, 25.0°C (0921-1245 HOURS); DISCHARGE, 34,200 ft³/s.											
18...	09:21	70.0	13.2	3.00	4.20	108	--	84	93	100	--	--
18...	09:24	70.0	--	6.50	3.72	106	--	77	91	100	--	--
18...	09:28	70.0	--	9.30	3.15	141	--	66	80	100	--	--
18...	09:32	70.0	--	10.8	2.68	176	--	49	58	91	100	--
18...	09:36	70.0	--	11.7	2.57	207	--	41	54	84	100	--
18...	09:40	70.0	--	12.2	2.24	235	--	41	48	81	100	--
18...	10:05	200	12.6	2.90	4.37	127	--	61	82	100	--	--
18...	10:10	200	--	6.30	3.98	200	--	40	54	99	100	--
18...	10:15	200	--	9.00	3.52	245	--	36	51	97	100	--
18...	10:20	200	--	10.5	3.37	377	--	24	37	92	100	--
18...	10:25	200	--	11.3	3.20	376	--	26	38	92	100	--
18...	10:45	305	15.4	3.50	4.26	--	--	--	--	--	--	--
18...	10:46	305	--	--	--	290	12	23	--	--	--	--
18...	10:50	305	--	7.60	4.39	--	--	--	--	--	--	--
18...	10:55	305	--	10.9	4.11	--	--	--	--	--	--	--
18...	11:00	305	--	12.7	3.94	--	--	--	--	--	--	--
18...	11:05	305	--	13.7	3.72	--	--	--	--	--	--	--
18...	11:10	305	--	14.3	3.57	--	--	--	--	--	--	--
18...	11:35	375	18.8	4.30	4.30	206	--	60	76	100	--	--
18...	11:39	375	--	9.40	4.26	227	--	41	60	100	--	--
18...	11:43	375	--	13.4	4.33	299	--	34	52	99	100	--
18...	11:47	375	--	15.7	4.28	364	--	28	46	96	100	--
18...	11:51	375	--	16.9	3.68	538	--	21	39	98	100	--
18...	11:55	375	--	17.7	3.50	607	--	17	32	95	100	--
18...	12:10	450	22.6	5.20	5.04	151	--	58	76	100	--	--
18...	12:15	450	--	11.3	4.26	203	--	48	62	97	100	--
18...	12:20	450	--	16.1	3.96	227	--	42	55	97	100	--
18...	12:25	450	--	18.8	3.83	273	--	38	51	100	--	--
18...	12:30	450	--	20.3	3.07	348	--	29	44	96	100	--
18...	12:35	450	--	21.3	3.22	444	--	21	33	97	100	--
18...	12:40	450	--	21.8	2.70	469	--	21	31	95	100	--

06486000 MISSOURI RIVER AT SIOUX CITY, IA--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
AUG 1985											
29...	WATER TEMPERATURE	22.0°C	(1105-1255 HOURS);	DISCHARGE,	32,700	ft³/s.					
29...	11:05	95.0	14.2	3.20	4.37	353	--	94	99	100	--
29...	11:10	95.0	--	7.00	4.07	360	--	87	94	100	--
29...	11:15	95.0	--	10.0	3.83	434	--	85	90	99	100
29...	11:20	95.0	--	11.7	3.39	496	--	69	74	89	100
29...	11:25	95.0	--	12.6	2.96	518	--	76	82	97	100
29...	11:30	95.0	--	13.2	3.07	707	--	51	55	75	100
29...	11:45	275	15.2	3.50	4.59	--	--	--	--	--	--
29...	11:50	275	--	7.60	3.94	--	--	--	--	--	--
29...	11:52	275	--	--	--	389	6	12	--	--	--
29...	11:55	275	--	10.9	3.50	--	--	--	--	--	--
29...	12:00	275	--	12.7	3.15	--	--	--	--	--	--
29...	12:05	275	--	13.7	2.89	--	--	--	--	--	--
29...	12:10	275	--	14.3	2.63	--	--	--	--	--	--
29...	12:25	415	16.8	3.90	4.59	125	--	63	79	100	--
29...	12:30	415	--	8.40	4.20	178	--	40	53	94	100
29...	12:35	415	--	12.0	4.04	227	--	33	49	97	100
29...	12:40	415	--	14.0	3.72	294	--	25	39	94	100
29...	12:45	415	--	15.1	3.94	424	--	17	27	92	100
29...	12:50	415	--	15.8	4.15	349	--	20	34	97	100

PARTICLE SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
OCT										
11...	13:00	5	0	1	20	77	96	98	99	100
MAY										
02...	13:30	5	0	1	15	87	99	100	--	--
JUN										
06...	12:45	5	--	0	8	67	97	99	100	--
JUL										
18...	12:15	5	--	0	10	78	98	99	100	--
AUG										
29...	12:55	5	0	1	20	88	99	99	100	--

06600000 PERRY CREEK AT 38th STREET, SIOUX CITY, IA

LOCATION.--Lat 42°32'08", long 96°24'39", 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 3.6 mi upstream from mouth.

DRAINAGE AREA.--65.1 mi².

PERIOD OF RECORD.--October 1945 to September 1969, June 1981 to current year.

REVISED RECORDS.--WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,112.04 ft above NGVD (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.--Estimated daily discharges: Oct. 1-15 and Dec. 9 to Feb. 10. Records good except those for Dec. 9 to Feb. 10, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--28 years (water years 1946-69, 1982-85), 16.5 ft³/s, 3.44 in/yr, 11,950 acre-ft/yr; median of yearly mean discharges, 12 ft³/s, 2.5 in/yr, 8,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,780 ft³/s Sept. 10, 1949, gage height, 26.80 ft, present datum, from rating curve extended above 1,700 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1946, 1958-60.

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 ft³/s, on basis of contracted-opening measurement of peak flow by Corps of Engineers.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	0200	1,470	13.26	Apr. 23	1145	*3,940	*19.20
Apr. 22	0415	1,470	13.28				

Minimum daily discharge 6.0 ft³/s Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	19	17	14	8.0	14	17	49	33	24	13	21
2	11	17	15	14	8.0	12	23	42	31	24	12	19
3	10	20	15	14	8.0	223	34	37	30	24	67	18
4	9.0	21	15	14	8.0	524	29	35	30	22	24	14
5	8.0	19	14	14	8.0	32	25	33	30	19	17	22
6	7.0	17	10	13	8.0	27	23	32	28	18	14	19
7	6.0	19	13	11	8.0	21	21	27	28	18	13	15
8	6.5	19	19	12	8.0	21	19	27	27	18	12	15
9	7.0	32	17	14	9.0	21	18	25	25	18	12	15
10	8.0	37	15	12	9.0	20	18	24	25	16	13	15
11	8.5	22	19	10	8.9	22	19	26	28	16	11	16
12	9.5	20	18	9.0	9.1	18	18	27	28	17	43	18
13	11	19	15	11	9.6	19	18	23	27	16	27	169
14	25	19	15	13	8.6	19	18	199	25	16	16	69
15	48	18	17	11	8.1	18	18	86	24	16	14	36
16	30	17	40	10	8.3	17	17	59	23	14	13	30
17	31	18	30	9.0	8.3	17	16	52	23	14	22	28
18	31	17	25	9.0	9.2	17	16	46	22	14	16	26
19	48	16	20	8.0	9.7	18	18	44	24	13	13	23
20	27	16	19	7.0	13	17	26	44	24	13	12	21
21	22	17	21	8.0	21	17	39	40	22	13	13	22
22	19	18	17	10	13	17	528	40	21	13	12	23
23	18	18	14	10	13	20	1820	47	20	10	20	29
24	18	18	11	9.0	11	19	143	39	19	14	15	25
25	19	18	12	9.0	13	17	88	37	19	13	13	21
26	19	18	12	8.0	15	18	359	34	131	11	13	19
27	19	17	15	9.0	12	23	108	34	75	10	12	18
28	18	16	20	9.0	13	21	66	33	36	9.8	11	17
29	18	18	17	8.0	---	18	59	38	34	11	157	22
30	18	18	15	8.0	---	17	55	38	26	12	48	27
31	18	---	15	8.0	---	17	---	33	---	13	25	---
TOTAL	558.5	578	537	325.0	285.8	1301	3676	1350	938	479.8	723	832
MEAN	18.0	19.3	17.3	10.5	10.2	42.0	123	43.5	31.3	15.5	23.3	27.7
MAX	48	37	40	14	21	524	1820	199	131	24	157	169
MIN	6.0	16	10	7.0	8.0	12	16	23	19	9.8	11	14
CFSM	.28	.30	.27	.16	.16	.65	1.89	.67	.48	.24	.36	.43
IN.	.32	.33	.31	.19	.16	.74	2.10	.77	.54	.27	.41	.48
AC-FT	1110	1150	1070	645	567	2580	7290	2680	1860	952	1430	1650

CAL YR 1984	TOTAL	14748.5	MEAN	40.3	MAX	898	MIN	6.0	CFSM	.62	IN.	8.43	AC-FT	29250
WTR YR 1985	TOTAL	11584.1	MEAN	31.7	MAX	1820	MIN	6.0	CFSM	.49	IN.	6.62	AC-FT	22980

06600100 FLOYD RIVER AT ALTON, IA

LOCATION.--Lat 42°58'55", long 96°00'03", in NE1/4 NE1/4 sec.11, T.94 N., R.44 W., Sioux County, Hydrologic Unit 10230002, on left bank 270 ft. downstream from South County Road at east edge of Alton, 34.3 mi upstream from West Branch Floyd River, and at mile 58.1.

DRAINAGE AREA.--268 mi².

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.

REMARKS.--Estimated daily discharges: Nov. 6-19, Dec. 4 to Mar. 2, Mar. 8-11, 28-31. Records good except those for estimated daily discharges, which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--30 years, 68.6 ft³/s, 3.48 in/yr, 49,700 acre-ft/yr; median of yearly mean discharges, 53 ft³/s, 2.7 in/yr, 38,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s June 20, 1983, gage height 18.54 ft, from flood-mark, from rating curve extended above 8,500 ft³/s; no flow at times in 1956, 1958-59, 1965, 1968, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a discharge of about 45,500 ft³/s, from information by U. S. Army Corps of Engineers.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 23	unknown	*5,660	*16.93	Apr. 27	unknown	1,090	11.01

Minimum daily discharge, 10 ft³/s Feb. 1-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	81	56	40	10	42	51	385	174	139	24	37
2	29	75	58	40	10	45	78	330	171	127	21	34
3	29	79	54	40	10	57	141	295	168	116	22	36
4	29	80	53	38	10	93	168	269	165	105	20	46
5	29	77	52	38	10	115	238	252	159	93	20	165
6	29	76	52	36	10	140	198	235	150	83	20	268
7	32	75	53	36	10	144	167	223	144	76	18	181
8	35	75	53	36	10	245	147	211	140	70	17	130
9	37	74	52	35	10	247	135	204	131	66	15	108
10	37	73	50	35	11	211	130	197	128	60	15	97
11	36	72	50	33	11	184	126	199	137	55	15	87
12	39	71	52	30	11	160	124	197	134	51	36	82
13	43	71	80	27	12	118	124	185	127	49	36	106
14	46	70	58	24	12	106	125	197	127	48	25	189
15	160	72	52	21	12	93	126	381	126	46	20	197
16	159	72	70	20	14	82	121	435	119	41	18	169
17	161	70	80	20	14	75	116	356	113	38	23	150
18	163	66	65	19	16	68	114	307	108	35	21	138
19	205	60	58	18	17	67	113	278	105	34	17	126
20	177	56	55	17	17	65	116	279	104	32	16	113
21	144	86	60	16	18	62	151	249	100	32	16	105
22	126	75	60	15	18	60	847	233	95	31	17	110
23	114	62	55	14	20	64	3430	226	88	28	26	123
24	108	61	50	13	23	68	3620	219	82	28	32	146
25	103	61	45	13	26	65	957	217	80	29	27	152
26	100	61	45	12	30	64	750	209	105	26	22	143
27	98	60	45	12	35	69	943	196	183	23	20	138
28	91	52	50	11	40	68	619	182	197	21	23	131
29	85	61	55	11	---	81	487	188	175	20	82	132
30	83	59	45	11	---	57	416	191	155	21	63	169
31	80	---	40	11	---	47	---	184	---	25	45	---
TOTAL	2636	2083	1703	742	447	3062	14878	7709	3990	1648	792	3808
MEAN	85.0	69.4	54.9	23.9	16.0	98.8	496	249	133	53.2	25.5	127
MAX	205	86	80	40	40	247	3620	435	197	139	82	268
MIN	29	52	40	11	10	42	51	182	80	20	15	34
CFSM	.32	.26	.20	.09	.06	.37	1.85	.93	.50	.20	.10	.47
IN.	.37	.29	.24	.10	.06	.43	2.07	1.07	.55	.23	.11	.53
AC-FT	5230	4130	3380	1470	887	6070	29510	15290	7910	3270	1570	7550

CAL YR 1984	TOTAL	91042	MEAN	249	MAX	4380	MIN	22	CFSM	.93	IN.	12.64	AC-FT	180600
WTR YR 1985	TOTAL	43498	MEAN	119	MAX	3620	MIN	10	CFSM	.44	IN.	6.04	AC-FT	86280

06600300 WEST BRANCH FLOYD RIVER NEAR STRUBLE, IA

LOCATION.--Lat 42°55'25", long 96°10'34", in NE1/4 NE1/4 sec. 32, T.94 N., R.45 W., Sioux County, Hydrologic Unit 10230002, on left bank near wingwall at downstream side of bridge on county highway B62, 0.1 mi west of U.S. Highway 75, 0.8 mi downstream from Orange City slough, 2.2 mi northeast of Struble, 21.4 mi upstream from Floyd River, and at mile 45.2, upstream from mouth of Floyd River.

DRAINAGE AREA.--180 mi².

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, 1978-81 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,239.40 ft above NGVD (State Highway Commission bench mark). Prior to Jan. 5, 1978, at site 721 ft right at old channel at same datum.

REMARKS.--Estimated daily discharges: Dec. 3 to Feb. 28, Apr. 22, 24-28 and June 27 to July 1. Records good except those for estimated daily discharge, which are poor. U.S. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--30 years, 45.1 ft³/s, 3.40 in/yr, 32,670 acre-ft/yr; median of yearly mean discharges, 32 ft³/yr, 2.4 in/yr, 23,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,060 ft³/s Mar. 28, 1962, gage height, 15.63 ft; maximum gage height, 15.86 ft June 20, 1983; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 22	unknown	*4,450	a*14.29	Aug. 29	1245	408	7.12
May 14	1915	452	7.29				

a From floodmark.
Minimum daily discharge, 9.0 ft³/s Feb. 13,14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	36	28	23	13	29	35	305	115	60	32	43
2	25	35	26	23	12	27	52	249	111	58	32	44
3	25	37	25	23	11	31	83	224	109	52	31	46
4	24	36	25	23	10	206	81	200	105	50	30	48
5	26	33	25	23	10	74	98	186	101	44	29	210
6	36	33	25	23	10	120	83	173	95	41	28	177
7	33	33	25	23	10	168	73	163	82	41	28	96
8	32	33	24	23	10	219	65	153	71	40	27	73
9	31	34	23	23	10	122	64	146	69	39	26	70
10	32	33	23	23	10	72	63	142	69	38	26	68
11	32	32	23	22	10	58	62	138	72	39	26	63
12	31	33	23	22	10	51	62	133	72	40	32	62
13	30	33	26	20	9.0	46	60	124	70	40	30	78
14	30	33	35	20	9.0	43	61	259	67	37	27	99
15	45	31	45	20	10	41	61	358	68	36	26	94
16	55	31	43	20	10	39	59	281	65	35	26	82
17	58	31	40	20	11	37	58	231	61	35	28	79
18	58	28	50	20	11	36	57	207	58	37	26	75
19	107	30	40	19	11	37	56	192	57	35	26	72
20	80	29	35	19	12	36	59	198	56	35	25	67
21	61	33	32	18	12	36	66	167	53	33	26	64
22	52	31	30	15	12	35	2300	157	50	32	26	65
23	46	28	29	15	13	38	883	153	49	31	28	68
24	45	30	27	15	14	39	950	145	46	31	28	69
25	43	29	25	15	15	37	540	140	45	32	27	67
26	43	30	25	15	20	38	460	131	65	31	27	65
27	42	28	25	15	35	50	470	125	100	31	26	65
28	39	28	25	15	37	47	420	125	70	31	27	64
29	38	29	25	15	---	42	347	132	66	31	208	66
30	36	28	25	15	---	38	303	132	64	32	87	79
31	37	---	24	15	---	33	---	125	---	33	47	---
TOTAL	1297	948	901	600	367.0	1925	8031	5594	2181	1180	1118	2318
MEAN	41.8	31.6	29.1	19.4	13.1	62.1	268	180	72.7	38.1	36.1	77.3
MAX	107	37	50	23	37	219	2300	358	115	60	208	210
MIN	24	28	23	15	9.0	27	35	124	45	31	25	43
CFSM	.23	.18	.16	.11	.07	.34	1.49	1.00	.40	.21	.20	.43
IN.	.27	.20	.19	.12	.08	.40	1.66	1.16	.45	.24	.23	.48
AC-FT	2570	1880	1790	1190	728	3820	15930	11100	4330	2340	2220	4600

CAL YR 1984	TOTAL	68508	MEAN	187	MAX	1750	MIN	23	CFSM	1.04	IN.	14.16	AC-FT	135900
WTR YR 1985	TOTAL	26460.0	MEAN	72.5	MAX	2300	MIN	9.0	CFSM	.40	IN.	5.47	AC-FT	52480

06600500 FLOYD RIVER AT JAMES, IA

LOCATION.--Lat 42°34'36", long 96°18'43", in SE1/4 SE1/4 sec.30, T.90 N., R.46 W., Plymouth County, Hydrologic Unit 10230002, on right bank at downstream side of bridge on county highway C70, 0.2 mi east of James, 14.3 mi downstream from West Branch Floyd River, and at mile 7.5.

DRAINAGE AREA.--886 mi².

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. 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.--Estimated daily discharges: Dec. 4 to Mar. 2 and Mar. 5-7. Records good except for estimated daily discharges, which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite telemeter at station.

AVERAGE DISCHARGE.--50 years (water years 1936-85), 217 ft³/s, 3.33 in/yr, 157,200 acre-ft/yr; median of yearly mean discharges, 160 ft³/s, 2.5 in/yr, 116,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,500 ft³/s June 8, 1953, gage height, 25.3 ft, from flood-marks, datum then in use, from rating curve extended above 16,000 ft³/s on basis of contracted-opening and flow-over-embankment measurement of peak flow; minimum daily, 0.90 ft³/s Jan. 10-22, 1977.

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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	0900	3,730	15.78	Aug. 29	1745	4,760	17.13
Apr. 23	1115	*11,100	*22.84				

Minimum daily discharge, 75 ft³/s Jan. 30 to Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	167	327	253	250	75	250	203	1790	680	559	152	424
2	162	317	251	200	75	350	237	1570	648	515	150	346
3	160	317	175	180	75	607	363	1380	623	473	184	309
4	157	324	320	160	75	2710	478	1230	607	428	158	279
5	159	315	250	140	75	2200	531	1140	586	391	143	331
6	169	308	250	140	75	1900	610	1040	543	357	138	905
7	200	311	240	130	75	1750	520	944	514	334	131	793
8	207	303	240	130	75	1620	450	884	494	311	123	565
9	204	316	240	130	75	1410	414	832	467	301	117	445
10	202	369	230	125	75	1130	399	794	451	285	116	382
11	202	315	230	120	80	776	392	768	465	267	115	347
12	209	302	230	120	80	602	378	762	473	258	194	320
13	206	306	230	115	80	444	375	703	454	250	233	461
14	200	306	250	115	80	365	374	960	437	246	177	524
15	266	298	350	115	85	330	377	1570	445	239	153	579
16	468	269	450	110	85	304	372	1640	432	230	138	586
17	549	277	700	110	85	277	358	1490	406	223	158	528
18	537	281	600	110	90	263	346	1300	386	212	153	479
19	678	267	500	105	90	251	360	1180	378	210	134	436
20	751	259	480	100	90	240	385	1120	373	200	125	394
21	601	251	500	95	95	232	487	1060	363	193	121	363
22	505	269	470	95	95	228	3440	974	349	189	119	356
23	449	283	420	95	100	237	9860	930	332	182	130	394
24	417	273	380	90	100	239	9790	901	315	178	135	430
25	402	275	350	90	110	236	5850	843	309	179	134	437
26	393	273	400	85	130	233	3800	799	420	181	130	440
27	386	267	400	85	150	248	3900	768	824	167	123	415
28	365	259	500	80	200	271	2860	719	744	160	118	398
29	346	257	600	80	---	258	2270	687	689	154	2240	409
30	335	273	400	75	---	242	1970	683	613	147	1330	486
31	331	---	350	75	---	233	---	682	---	146	583	---
TOTAL	10383	8767	11239	3650	2575	20436	52149	32143	14820	8165	8155	13561
MEAN	335	292	363	118	92.0	659	1738	1037	494	263	263	452
MAX	751	369	700	250	200	2710	9860	1790	824	559	2240	905
MIN	157	251	175	75	75	228	203	682	309	146	115	279
CFSM	.38	.33	.41	.13	.10	.74	1.96	1.17	.56	.30	.30	.51
IN.	.44	.37	.47	.15	.11	.86	2.19	1.35	.62	.34	.34	.57
AC-FT	20590	17390	22290	7240	5110	40530	103400	63760	29400	16200	16180	26900

CAL YR 1984	TOTAL	319482	MEAN	873	MAX	7050	MIN	140	CFSM	.99	IN.	13.41	AC-FT	633700
WTR YR 1985	TOTAL	186043	MEAN	510	MAX	9860	MIN	75	CFSM	.58	IN.	7.81	AC-FT	369000

06602020 WEST FORK DITCH AT HORNICK, IA

LOCATION.--Lat 42°13'37", long 96°04'40", in SW1/4 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 mi².

PERIOD OF RECORD.--April 1939 to September 1969 (published as "at Holly Springs"), July 1974 to current year.

REVISED RECORDS.--WSP 1240: 1943, 1945 (M). WSP 1310: 1941 (M) 1944-46 (M). WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,045.82 ft above NGVD. Prior to June 16, 1959, nonrecording gage at site 3.0 mi upstream and June 16, 1959 to Sept. 30, 1969, recording gage at site 2.2 mi upstream at datum 7.0 ft higher.

REMARKS.--Estimated daily discharge: Dec. 3 to Mar.3. Records good except those for Dec. 3 to Mar. 3, which are poor. West Fork ditch is a dredged channel which diverts flow of West Fork Little Sioux River at Holly Springs 5.5 mi south, thence 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.

AVERAGE DISCHARGE.--41 years (water years 1940-69, 1975-85), 108 ft³/s, 3.64 in/yr, 78,250 acre-ft/yr; median of yearly mean discharges 89 ft³/s, 3.0 in/yr, 64,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Mar. 28, 1962, gage height, 22.46 ft, site and datum then in use; maximum gage height, 25.2 ft Mar. 30, 1960, from floodmark, site and datum then in use; minimum daily discharge, 0.2 ft³/s July 30, Aug. 17, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	1400	5,460	19.28	Apr. 24	0015	3,860	17.95
Apr. 22	2045	*5,630	*19.78	Aug. 29	2330	2,440	15.89

Minimum daily discharge, 60 ft³/s Feb. 6-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	126	120	150	70	95	130	421	239	174	97	164
2	79	120	123	120	70	90	155	378	238	167	92	139
3	79	121	120	110	70	120	225	349	213	162	92	129
4	79	125	120	110	65	3320	250	323	206	154	92	118
5	80	117	100	105	65	593	245	303	208	148	90	145
6	87	114	140	100	60	261	231	293	201	143	87	203
7	93	115	120	100	60	224	210	273	195	140	85	147
8	93	115	130	100	60	234	194	258	191	135	82	125
9	93	131	130	90	60	208	185	246	182	135	79	115
10	93	255	130	80	60	163	179	235	177	131	79	110
11	99	216	135	80	60	136	177	238	185	126	80	110
12	98	175	140	80	60	132	171	271	190	123	81	110
13	101	164	140	80	60	126	166	218	184	123	88	124
14	98	165	140	80	60	125	168	302	183	122	86	152
15	149	156	200	75	65	120	166	587	299	119	82	141
16	204	142	550	75	65	117	159	417	210	116	78	129
17	178	148	300	75	65	116	155	347	180	115	81	125
18	183	144	230	70	65	116	146	312	168	110	88	122
19	222	136	200	70	70	116	147	291	166	109	81	112
20	223	136	240	70	80	116	148	515	167	109	76	109
21	170	131	300	70	110	116	393	296	165	108	75	107
22	148	137	230	65	200	116	3430	262	161	107	75	109
23	141	139	210	65	150	119	3730	252	155	105	78	121
24	133	134	200	65	110	129	1780	247	153	105	82	136
25	130	133	190	65	95	129	595	244	152	107	79	129
26	130	134	180	65	85	127	991	229	157	102	75	124
27	127	131	200	65	80	146	843	223	219	99	74	120
28	126	124	500	65	90	168	533	219	219	98	73	117
29	122	130	250	65	---	154	466	214	190	95	380	124
30	119	127	220	70	---	140	495	249	180	95	1000	148
31	118	---	190	70	---	140	---	285	---	98	228	---
TOTAL	3875	4241	6178	2550	2210	8012	16863	9297	5733	3780	3915	3864
MEAN	125	141	199	82.3	78.9	258	562	300	191	122	126	129
MAX	223	255	550	150	200	3320	3730	587	299	174	1000	203
MIN	79	114	100	65	60	90	130	214	152	95	73	107
CFSM	.31	.35	.49	.20	.20	.64	1.39	.74	.47	.30	.31	.32
IN.	.36	.39	.57	.24	.20	.74	1.56	.86	.53	.35	.36	.36
AC-FT	7690	8410	12250	5060	4380	15890	33450	18440	11370	7500	7770	7660

CAL YR 1984	TOTAL	142255	MEAN	389	MAX	7690	MIN	40	CFSM	.97	IN.	13.13	AC-FT	282200
WTR YR 1985	TOTAL	70518	MEAN	193	MAX	3730	MIN	60	CFSM	.48	IN.	6.51	AC-FT	139900

06602400 MONONA-HARRISON DITCH NEAR TURIN, IA

LOCATION.--Lat 41°57'52", long 95°59'30", in NW1/4 NE1/4 sec.32, T.83 N., R.44 W., Monona County, Hydrologic Unit 10230004, on left pier at downstream 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 mi².

PERIOD OF RECORD.--April 1939 to current year. Records for April 1939 to January 1958 not equivalent owing to diversion from Little Sioux River through equalizer ditch 1.5 mi upstream. Prior to May 1942, published as "near Blencoe".

GAGE.--Water-stage recorder. Datum of gage is 1,015.00 ft above NGVD (U. S. Army Corps of Engineers bench mark). Prior to May 7, 1942, nonrecording gage at site 4.8 mi downstream at datum 5.40 ft lower. 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.--Estimated daily discharges: Dec. 4-7, 13, 14, 17-26, 28-31, Jan. 1 to Feb. 17, and May 23 to June 18. Records good except those for estimated discharges, which are poor. Monona-Harrison ditch is a dug channel 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 gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--27 years (water years 1959-85), 245 ft³/s, 3.70 in/yr, 177,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,900 ft³/s Feb. 19, 1971, gage height, 28.03 ft, present datum; minimum daily, 8.5 ft³/s Jan. 3-11, 1959.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	1545	7,730	19.47	Apr. 23	1830	9,720	21.19
Apr. 22	1530	*9,860	*21.30	Apr. 26	2000	5,060	16.70

Minimum daily discharge, 100 ft³/s Feb. 6-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	217	212	500	160	221	227	1250	580	315	171	311
2	152	212	199	400	130	221	240	959	530	298	167	259
3	148	210	114	300	120	225	368	874	490	291	167	234
4	152	214	105	290	120	4650	417	801	470	274	186	214
5	149	201	135	270	110	2150	397	733	450	256	177	239
6	172	190	280	250	100	722	377	700	450	248	161	379
7	199	192	220	230	100	559	342	658	430	243	154	284
8	199	192	198	200	100	427	314	606	420	232	147	226
9	220	209	192	190	100	442	301	591	410	229	141	200
10	205	357	219	170	100	373	292	565	420	223	135	194
11	218	186	244	150	100	305	287	550	440	211	141	192
12	214	363	227	130	100	272	284	618	440	205	146	192
13	231	319	155	250	100	245	270	523	440	210	170	216
14	212	308	180	230	100	234	268	902	500	206	178	296
15	363	283	249	230	105	220	273	1700	740	199	155	289
16	549	250	1050	220	110	212	273	1100	500	193	147	239
17	497	244	1400	200	110	205	266	874	420	193	157	219
18	451	252	1000	190	111	200	251	779	333	187	184	210
19	504	233	700	170	117	203	247	727	340	183	163	192
20	478	225	500	150	142	202	249	1210	341	180	142	175
21	363	223	350	210	207	197	1120	824	329	177	141	170
22	288	240	250	180	241	197	5740	700	314	177	144	172
23	257	245	220	170	232	201	8160	630	297	174	156	196
24	244	240	200	155	204	221	5560	570	287	176	175	231
25	233	241	180	150	197	222	2360	500	285	183	159	219
26	237	236	250	150	232	226	4080	490	287	174	149	202
27	231	230	457	150	196	245	3810	480	494	162	144	189
28	216	219	1150	150	189	302	2040	470	466	158	141	176
29	210	212	1000	150	---	268	1380	470	371	157	158	186
30	201	224	800	140	---	234	1340	540	336	156	1630	232
31	212	---	600	120	---	233	---	640	---	164	560	---
TOTAL	8155	7167	13036	6445	3933	14834	41533	23034	12610	6434	6746	6733
MEAN	263	239	421	208	140	479	1384	743	420	208	218	224
MAX	549	363	1400	500	241	4650	8160	1700	740	315	1630	379
MIN	148	186	105	120	100	197	227	470	285	156	135	170
CFSM	.29	.27	.47	.23	.16	.53	1.54	.83	.47	.23	.24	.25
IN.	.34	.30	.54	.27	.16	.61	1.72	.95	.52	.27	.28	.28
AC-FT	16180	14220	25860	12780	7800	29420	82380	45690	25010	12760	13380	13350

CAL YR 1984	TOTAL	280605	MEAN	767	MAX	11000	MIN	80	CFSM	.85	IN.	11.60	AC-FT	556600
WTR YR 1985	TOTAL	150660	MEAN	413	MAX	8160	MIN	100	CFSM	.46	IN.	6.23	AC-FT	298800

06604200 WEST OKOBOJI LAKE AT LAKESIDE LABORATORY NEAR MILFORD, IA

LOCATION.--Lat 43°22'43", long 95°10'52", in NE1/4 SW1/4 sec.23, T.99N., R.37W., 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 mi².

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, 94.51 ft above Iowa Lake Survey datum, and about 4.0 ft below crest of spillway. Prior to June 17, 1938, nonrecording gage at State Pier at Arnolds Park at same datum.

REMARKS.--Lake formed by concrete dam with ungated spillway at elevation 1,395.8 ft above NGVD. Lake is used for conservation and recreation. Area of lake is approximately 3,900 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.28 ft June 22, 1984; minimum observed, 0.20 ft Sept. 20, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.92 ft Apr. 26; minimum, 3.73 ft Oct. 4, 5.

GAGE HEIGHT (FEET ABOVE DATUM) WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.76	3.86	3.85	4.04	4.06	4.10	4.53	4.82	4.49	4.37	3.97	3.92
2	3.75	3.84	3.84	4.04	4.06	4.10	4.51	4.79	4.48	4.37	3.95	3.93
3	3.74	3.80	3.83	4.04	4.05	4.18	4.52	4.76	4.45	4.35	3.94	3.95
4	3.73	3.81	3.82	4.04	4.05	4.27	4.61	4.73	4.43	4.34	3.93	3.98
5	3.73	3.80	3.81	4.04	4.06	4.27	4.64	4.73	4.43	4.32	3.92	4.18
6	3.75	3.80	3.81	4.04	4.06	4.27	4.63	4.71	4.40	4.30	3.91	4.19
7	3.76	3.80	3.80	4.04	4.06	4.28	4.61	4.69	4.39	4.27	3.90	4.18
8	3.77	3.80	3.80	4.04	4.05	4.29	4.60	4.66	4.37	4.28	3.88	4.19
9	3.77	3.86	3.81	4.04	4.05	4.34	4.57	4.63	4.35	4.28	3.87	4.17
10	3.78	3.92	3.81	4.05	4.06	4.43	4.56	4.63	4.35	4.27	3.85	4.15
11	3.79	3.90	3.81	4.05	4.06	4.55	4.55	4.64	4.37	4.26	3.83	4.13
12	3.79	3.90	3.80	4.05	4.06	4.61	4.55	4.60	4.39	4.24	3.88	4.13
13	3.79	3.89	3.81	4.05	4.05	4.63	4.54	4.59	4.36	4.23	3.92	4.13
14	3.79	3.89	3.84	4.05	4.05	4.63	4.54	4.64	4.36	4.22	3.90	4.12
15	3.88	3.87	3.86	4.05	4.05	4.63	4.54	4.65	4.40	4.20	3.89	4.09
16	3.92	3.86	3.96	4.05	4.05	4.61	4.55	4.64	4.40	4.18	3.88	4.08
17	3.95	3.86	3.99	4.06	4.05	4.60	4.52	4.63	4.38	4.16	3.89	4.08
18	3.96	3.86	4.00	4.06	4.05	4.59	4.52	4.60	4.37	4.14	3.87	4.09
19	3.94	3.85	4.00	4.07	4.05	4.58	4.53	4.58	4.35	4.13	3.86	4.09
20	3.94	3.85	4.00	4.06	4.06	4.56	4.53	4.59	4.34	4.11	3.84	4.09
21	3.94	3.84	4.00	4.06	4.07	4.55	4.57	4.57	4.33	4.10	3.82	4.08
22	3.93	3.83	4.00	4.06	4.08	4.53	4.74	4.54	4.31	4.09	3.80	4.09
23	3.91	3.84	4.00	4.06	4.09	4.54	4.86	4.53	4.30	4.06	3.86	4.09
24	3.89	3.83	4.01	4.06	4.09	4.53	4.89	4.54	4.29	4.07	3.87	4.08
25	3.90	3.84	4.01	4.06	4.10	4.52	4.88	4.52	4.27	4.06	3.86	4.08
26	3.90	3.85	4.00	4.06	4.10	4.53	4.89	4.51	4.31	4.05	3.85	4.07
27	3.89	3.84	4.01	4.06	4.10	4.56	4.87	4.49	4.40	4.03	3.84	4.05
28	3.90	3.84	4.02	4.06	4.10	4.55	4.86	4.46	4.40	4.01	3.87	4.06
29	3.88	3.85	4.02	4.07	---	4.54	4.85	4.47	4.40	4.00	3.93	4.09
30	3.87	3.85	4.02	4.07	---	4.53	4.84	4.48	4.39	4.00	3.93	4.11
31	3.86	---	4.04	4.07	---	4.55	---	4.48	---	3.99	3.92	---
MEAN	3.84	3.85	3.92	4.05	4.06	4.47	4.65	4.61	4.38	4.18	3.88	4.09
MAX	3.96	3.92	4.04	4.07	4.10	4.63	4.89	4.82	4.49	4.37	3.97	4.19
MIN	3.73	3.80	3.80	4.04	4.05	4.10	4.51	4.46	4.27	3.99	3.80	3.92

CAL YR 1984 MEAN 4.52 MAX 6.23 MIN 3.73
WTR YR 1985 MEAN 4.16 MAX 4.89 MIN 3.73

06605000 OCHEYEDAN RIVER NEAR SPENCER, IA

LOCATION.--Lat 43°07'44", long 95°12'37", in SW1/4SW1/4 sec.15, T.96N., R.37W., Clay County, Hydrologic Unit 10230003, on left bank 3 ft downstream from bridge on county highway M38, 3.4 mi west by southwest of Spencer, and at mile 4.1.

DRAINAGE AREA.--426 mi².

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.

REMARKS.--Estimated dialy discharges: Dec. 4 to Mar. 8, Mar. 30, 31, and Apr. 9-14. Records good except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--8 years, 256 ft³/s, 8.16 in/yr, 185,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,450 ft³/s June 21, 1983, gage height, 10.49 ft; no flow Jan. 24 to Mar. 9, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1953 reached a stage of 12.89 ft, discharge, 26,000 ft³/s on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 9	1315	2,650	8.92	Apr. 24	0130	*3,500	*9.60

Minimum daily discharge, 17 ft³/s Jan 30 to Feb. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	68	60	28	17	28	219	659	391	236	42	40
2	29	64	58	26	17	40	256	582	366	215	39	39
3	29	67	69	26	17	90	332	520	346	194	40	65
4	30	68	69	25	17	740	442	466	336	179	40	81
5	30	62	74	24	17	250	689	427	325	158	39	372
6	34	65	66	24	17	125	544	398	312	144	37	617
7	40	58	61	23	17	170	435	374	302	134	36	385
8	41	57	57	23	17	580	376	348	292	127	33	280
9	39	65	56	22	17	1860	336	329	270	118	33	273
10	37	82	51	22	17	1600	330	310	258	106	34	266
11	42	75	43	21	17	1270	309	301	277	99	32	217
12	40	73	38	21	17	788	297	297	286	93	49	195
13	39	74	31	21	17	497	287	272	276	87	50	209
14	38	79	29	21	17	437	279	372	283	83	40	268
15	55	79	31	21	17	351	269	772	750	77	36	290
16	74	65	62	21	17	329	249	765	550	72	33	248
17	95	75	105	21	17	288	239	637	418	67	35	227
18	103	68	82	20	17	266	241	554	349	63	34	213
19	127	66	72	20	18	256	234	495	306	61	32	188
20	117	63	58	20	18	240	231	486	279	57	30	167
21	98	62	48	20	18	234	374	440	262	57	29	149
22	87	70	43	20	20	226	1160	410	234	53	31	165
23	79	61	38	20	23	231	2600	460	211	50	60	195
24	74	61	37	20	25	238	3050	653	194	53	59	239
25	72	60	34	19	25	217	1940	521	183	52	43	233
26	71	61	34	19	25	216	1360	450	183	48	36	223
27	69	60	34	19	25	253	1280	398	288	44	33	217
28	66	55	33	18	26	274	1040	364	333	42	34	201
29	63	65	31	18	---	261	870	363	296	40	44	221
30	65	61	30	17	---	229	756	382	263	41	47	339
31	65	---	29	17	---	215	---	405	---	44	43	---
TOTAL	1879	1989	1563	657	529	12799	21024	14210	9419	2894	1203	6822
MEAN	60.6	66.3	50.4	21.2	18.9	413	701	458	314	93.4	38.8	227
MAX	127	82	105	28	26	1860	3050	772	750	236	60	617
MIN	29	55	29	17	17	28	219	272	183	40	29	39
CFSM	.14	.16	.12	.05	.04	.97	1.65	1.08	.74	.22	.09	.53
IN.	.16	.17	.14	.06	.05	1.12	1.84	1.24	.82	.25	.11	.60
AC-FT	3730	3950	3100	1300	1050	25390	41700	28190	18680	5740	2390	13530

CAL YR 1984	TOTAL	142191	MEAN	389	MAX	4640	MIN	28	CFSM	.91	IN.	12.42	AC-FT	282000
WTR YR 1985	TOTAL	74988	MEAN	205	MAX	3050	MIN	17	CFSM	.48	IN.	6.55	AC-FT	148700

06605850 LITTLE SIOUX RIVER AT LINN GROVE, IA

LOCATION.--Lat 42°53'24", long 95°14'30", in SW1/4 SW1/4 sec.5, T.93 N., R.37 W., Buena Vista County, Hydrologic Unit 10230003, on right bank at downstream side of bridge on State Highway 264, in Linn Grove, and at mile 123.7.

DRAINAGE AREA.--1,548 mi².

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.

REMARKS.--Estimated daily discharges: Oct. 21-24, and Dec. 9 to Mar. 5. Records good except for estimated daily discharges which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--13 years, 720 ft³/s, 6.32 in/yr, 521,600 acre-ft/yr; median of yearly mean discharges, 680 ft³/s, 6.0 in/yr, 493,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s June 17, 1984, gage height, 19.58 ft; maximum gage height, 19.58 ft June 17, 1984; minimum daily discharge, 0.70 ft³/s Feb. 4, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 13	1230	3,130	13.37	May 18	1000	2,150	11.07
Apr. 7	2000	1,980	10.56	May 25	1530	2,140	11.04
Apr. 26	0330	*6,000	*16.21	June 17	1215	1,630	9.71

Minimum daily discharge, 67 ft³/s Feb. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	219	223	330	74	155	780	3600	1180	874	129	167
2	130	210	198	280	73	162	779	3190	1190	780	128	157
3	131	201	134	260	71	210	894	2820	1150	702	126	173
4	129	199	103	240	71	280	1100	2490	1130	635	122	177
5	126	195	131	230	71	305	1410	2230	1090	569	123	312
6	130	189	156	208	70	340	1730	1960	1030	513	123	912
7	131	184	152	195	70	551	1940	1720	956	469	116	1240
8	144	184	117	188	70	1010	1910	1550	883	427	111	1290
9	156	207	118	177	70	1430	1700	1420	817	391	108	975
10	159	318	120	167	69	2190	1520	1300	754	365	110	766
11	154	371	130	158	69	2870	1370	1210	731	338	106	726
12	151	337	140	148	69	3020	1240	1140	757	315	111	682
13	150	312	160	138	69	3100	1160	1070	807	293	158	643
14	149	307	180	127	68	2890	1110	1190	812	276	162	642
15	171	315	150	122	67	2310	1090	1530	1100	259	136	678
16	218	307	250	121	68	2010	1060	1880	1420	244	131	698
17	254	277	600	114	69	1910	1010	2090	1610	230	126	651
18	296	290	620	110	72	1800	958	2140	1510	215	116	599
19	339	278	570	103	76	1620	887	2020	1260	201	126	556
20	359	239	520	101	86	1420	847	1880	1110	188	105	510
21	348	223	470	99	104	1230	874	1770	992	178	101	469
22	329	243	430	96	130	1100	1200	1630	880	169	104	453
23	308	273	380	93	147	1020	1800	1500	764	161	214	461
24	289	253	350	91	150	999	2570	1650	671	161	282	502
25	251	245	310	88	150	981	4800	2070	601	167	249	589
26	249	249	280	86	150	910	5880	2010	553	162	194	629
27	249	251	260	85	148	868	5390	1670	617	152	163	636
28	241	239	350	83	151	896	5330	1420	924	140	154	633
29	227	223	450	79	---	937	4830	1280	1040	134	161	630
30	216	233	400	77	---	889	4140	1200	977	130	164	712
31	214	---	350	76	---	844	---	1180	---	129	167	---
TOTAL	6524	7571	8802	4470	2552	40257	61309	55810	29316	9967	4426	18268
MEAN	210	252	284	144	91.1	1299	2044	1800	977	322	143	609
MAX	359	371	620	330	151	3100	5880	3600	1610	874	282	1290
MIN	126	184	103	76	67	155	779	1070	553	129	101	157
CFSM	.14	.16	.18	.09	.06	.84	1.32	1.16	.63	.21	.09	.39
IN.	.16	.18	.21	.11	.06	.97	1.47	1.34	.70	.24	.11	.44
AC-FT	12940	15020	17460	8870	5060	79850	121600	110700	58150	19770	8780	36230

CAL YR 1984	TOTAL	547806	MEAN	1497	MAX	11700	MIN	103	CFSM	.97	IN.	13.16	AC-FT	1087000
WTR YR 1985	TOTAL	249272	MEAN	683	MAX	5880	MIN	67	CFSM	.44	IN.	5.99	AC-FT	494400

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IA

LOCATION.--Lat 42°28'20", long 95°47'49", in NE1/4 NW1/4 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 at mile 56.0.

DRAINAGE AREA.--2,500 mi².

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. 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.--Estimated daily discharges: Dec. 20-27, Dec. 29 to Mar. 3, Mar. 18-20, 22, Apr. 22-25, 29, 30, May 1, 18, 19, June 2-5, and Sept. 10. Records good except those for periods of estimated discharge, which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--58 years (water years 1919-24, 1927-31, 1937-85), 807 ft³/s, 4.38 in/yr, 584,700 acre-ft/yr; median of yearly mean discharge, 610 ft³/s, 3.3 in/yr, 442,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s Apr. 7, 1965, gage height, 25.86 ft; minimum daily, 2.6 ft³/s July 17, 25, 1936, caused by construction dam above gage; minimum daily discharge excluding regulation, 4.0 ft³/s Oct. 9, 12, 1956.

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).

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	0615	4,970	14.08	Apr. 25	0600	*9,640	*18.38
Mar. 9	0100	4,370	13.26	Apr. 28	1800	9,540	18.28

Minimum daily discharge, 220 ft³/s Feb. 10-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	564	489	1100	240	400	1370	7730	2190	1390	332	474
2	267	535	476	900	240	400	1360	6730	2100	1290	315	437
3	264	529	365	1200	230	1040	1450	5570	2050	1200	315	417
4	262	529	354	900	230	3910	1610	4820	2000	1110	322	405
5	264	513	390	800	230	2120	1830	4260	1900	1030	319	544
6	288	502	387	700	230	1760	2100	3800	1740	946	317	1120
7	305	497	408	680	230	1760	2310	3390	1670	871	301	1340
8	317	494	423	640	230	2620	2490	3000	1600	806	295	1670
9	312	530	438	620	230	3750	2530	2680	1510	764	284	1820
10	305	776	430	600	220	3000	2400	2490	1440	714	291	1710
11	312	767	434	600	220	2860	2200	2330	1410	666	284	1440
12	339	780	440	500	220	3190	2020	2190	1390	628	293	1320
13	328	769	475	450	220	3310	1890	2060	1360	601	319	1320
14	311	732	397	400	220	3350	1800	2120	1400	586	351	1320
15	401	696	410	390	220	3380	1720	2730	1920	557	324	1330
16	467	660	1370	380	220	3110	1680	3130	1500	531	323	1340
17	595	651	2180	360	220	2550	1620	3240	1730	503	325	1320
18	661	650	1740	350	230	2340	1560	3300	1910	481	317	1270
19	748	602	1360	330	230	2220	1500	3300	1930	462	301	1190
20	822	583	1050	310	270	2070	1460	3320	1760	443	287	1130
21	826	537	1300	290	300	1900	2160	3250	1580	430	286	1070
22	774	566	1200	270	320	1720	2860	3040	1470	410	282	1030
23	729	566	1150	260	350	1610	6710	2790	1360	395	297	1020
24	685	551	1100	250	350	1550	8600	2760	1250	387	311	1020
25	655	571	1000	240	350	1510	9110	2710	1170	390	353	1060
26	629	565	1000	240	350	1490	7150	2680	1100	372	400	1110
27	611	548	1000	240	360	1500	7560	2730	1100	363	378	1150
28	590	527	2200	240	380	1490	9060	2730	1110	358	345	1150
29	566	520	1500	240	---	1440	9240	2620	1260	356	868	1170
30	548	519	1300	240	---	1450	8560	2450	1400	335	857	1240
31	539	---	1200	240	---	1440	---	2320	---	332	551	---
TOTAL	14989	17829	27966	14960	7340	66240	107910	102270	47310	19707	11143	33937
MEAN	484	594	902	483	262	2137	3597	3299	1577	636	359	1131
MAX	826	780	2200	1200	380	3910	9240	7730	2190	1390	868	1820
MIN	262	494	354	240	220	400	1360	2060	1100	332	282	405
CFSM	.19	.24	.36	.19	.10	.85	1.44	1.32	.63	.25	.14	.45
IN.	.22	.27	.42	.22	.11	.99	1.61	1.52	.70	.29	.17	.50
AC-FT	29730	35360	55470	29670	14560	131400	214000	202900	93840	39090	22100	67310

CAL YR 1984	TOTAL	947192	MEAN	2588	MAX	19400	MIN	262	CFSM	1.04	IN.	14.09	AC-FT	1879000
WTR YR 1985	TOTAL	471601	MEAN	1292	MAX	9240	MIN	220	CFSM	.52	IN.	7.02	AC-FT	935400

06607200 MAPLE RIVER AT MAPLETON, IA

LOCATION.--Lat 42°09'25", long 95°48'35", in SE1/4 SE1/4 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 mi².

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 1,085.86 ft above NGVD. See WSP 1730 for history of changes prior to Sept. 20, 1956.

REMARKS.--Estimated daily discharges: Oct. 25-28, 30, Dec. 5-11, 14, 15, 18-27 and Jan. 1 to Mar. 5, Mar. 13-27, 30, 31 and Apr. 1, 2, 11-18. Records good except those for winter period, which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--44 years, 261 ft³/s, 5.30 in/yr, 189,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft³/s Sept. 12, 1978, gage height, 16.74 ft; maximum gage height, 22.1 ft June 12, 1950; no flow Sept. 21, 22, 1945 caused by temporary dam above gage; minimum daily discharge excluding regulation, 2.5 ft³/s Feb. 17-20, 1959.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 15	0500	*3,260	*6.40				

Minimum discharge, 71 ft³/s, Dec. 4, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	240	213	230	180	260	320	780	575	424	236	308
2	177	222	210	270	180	270	342	716	607	413	225	239
3	180	227	132	320	180	300	456	625	611	399	220	201
4	178	232	96	400	180	500	597	583	526	386	221	181
5	177	218	130	430	180	895	582	563	521	365	218	236
6	220	206	200	400	180	644	532	542	511	355	211	311
7	245	208	300	360	180	583	486	511	491	352	201	259
8	262	205	400	340	180	654	449	485	482	348	189	220
9	270	242	450	320	180	724	425	466	454	355	183	194
10	232	437	400	300	180	552	441	451	446	346	183	190
11	214	510	320	290	160	471	500	464	463	330	181	188
12	258	421	229	250	150	443	450	461	465	340	193	181
13	265	342	154	180	150	420	400	451	448	336	208	208
14	224	332	300	270	150	400	370	517	436	336	212	206
15	414	281	600	350	150	380	360	1400	1730	322	190	212
16	390	268	1820	280	150	370	340	1120	695	311	174	198
17	449	271	1050	260	150	360	330	919	542	302	196	192
18	462	265	600	250	170	360	321	780	481	292	205	193
19	500	245	450	250	170	360	317	690	457	726	177	180
20	405	235	400	240	170	355	311	780	447	455	164	189
21	328	224	400	240	200	350	303	734	434	338	160	197
22	298	245	350	230	200	350	432	645	412	302	155	193
23	279	254	300	230	250	350	626	610	394	284	180	195
24	252	248	350	220	250	355	955	635	387	281	186	200
25	250	245	400	200	250	360	785	742	380	288	168	200
26	240	257	600	200	250	365	934	655	396	261	161	200
27	227	250	900	200	250	370	1260	606	540	242	150	188
28	221	232	2370	180	250	379	1060	588	541	227	142	186
29	209	231	1550	180	---	385	880	556	467	286	1010	211
30	213	230	803	180	---	363	860	584	441	251	1010	276
31	220	---	519	180	---	345	---	578	---	243	455	---
TOTAL	8439	8023	16996	8230	5270	13273	16424	20237	15780	10496	7764	6332
MEAN	272	267	548	265	188	428	547	653	526	339	250	211
MAX	500	510	2370	430	250	895	1260	1400	1730	726	1010	311
MIN	177	205	96	180	150	260	303	451	380	227	142	180
CFSM	.41	.40	.82	.40	.28	.64	.82	.98	.79	.51	.37	.32
IN.	.47	.45	.95	.46	.29	.74	.91	1.13	.88	.58	.43	.35
AC-FT	16740	15910	33710	16320	10450	26330	32580	40140	31300	20820	15400	12560

CAL YR 1984	TOTAL	292163	MEAN	798	MAX	10800	MIN	96	CFSM	1.19	IN.	16.25	AC-FT	579500
WTR YR 1985	TOTAL	137264	MEAN	376	MAX	2370	MIN	96	CFSM	.56	IN.	7.63	AC-FT	272300

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 at mile 13.5.

DRAINAGE AREA.--3,526 mi². Prior to Jan. 15, 1958, 4,426 mi², combined area above this station and Monona-Harrison ditch station 1.0 mi west.

PERIOD OF RECORD.--January 1958 to current year. April 1939 to May 1942 at site 4.7 mi downstream, published as "near Blencoe" 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.

GAGE.--Water-stage recorder. Datum of gage is 1,019.850 ft above NGVD (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.--Estimated daily discharges: Dec. 4-7, 14, 15, 18-27, Jan. 1 to Mar. 1 and April 24 to May 1. Records good except for winter period, which are poor. U. S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--27 years (water years 1959-85), 1,362 ft³/s, 5.25 in/yr, 986,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s June 21, 1983 gage height, 26.54 ft; maximum gage height, 27.44 ft Feb. 19, 1971, backwater from ice; minimum daily discharge, 17 ft³/s Jan. 18-20, Jan. 28 to Feb. 1, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1815	4,790	11.78	Apr. 24	1230	8,530	14.47
Dec. 28	0015	6,700	13.05	Apr. 27	unknown	*15,700	*17.58
Mar. 4	1715	5,100	11.93	May 20	1900	5,070	12.29
Mar. 9	1445	5,430	12.16				

Minimum recorded discharge, 434 ft³/s Aug 21, but may have been less during period of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	565	838	867	1200	530	1450	1860	8980	2680	2000	590	1040
2	582	872	833	1100	530	1120	1810	8280	2610	1960	579	832
3	594	877	659	1950	520	1070	1890	7490	2610	1850	567	745
4	603	838	740	1600	510	3650	2060	6750	2420	1730	577	697
5	599	824	650	1450	500	3820	2250	5980	2350	1620	569	758
6	633	800	800	1400	500	2710	2420	5240	2300	1510	545	999
7	695	796	960	1350	500	2190	2590	4660	2230	1400	532	1610
8	736	777	1200	1250	500	2270	2750	4070	2160	1310	497	1700
9	824	824	1240	1150	500	4480	2890	3550	2060	1240	484	1860
10	777	1060	1300	1100	500	4550	2880	3230	1950	1170	470	1920
11	745	1300	1300	1100	500	3630	2710	3010	1900	1110	466	1770
12	758	1290	1020	1050	490	3930	2560	2840	1860	1030	485	1530
13	838	1230	819	1000	490	4240	2430	2650	1820	993	497	1480
14	786	1200	1010	800	490	4270	2310	2800	1790	952	549	1460
15	989	1120	1500	1000	490	4330	2230	4250	3220	901	577	1430
16	1090	1080	3690	900	490	4110	2180	4850	2590	849	537	1440
17	1160	1050	3220	800	500	3410	2110	4860	2220	815	566	1460
18	1280	1030	2500	750	510	2930	2080	4660	2390	776	574	1440
19	1370	1020	2000	700	580	2720	1980	4680	2510	867	543	1360
20	1290	973	1600	650	680	2590	1950	4880	2480	1090	495	1260
21	1240	953	1700	620	750	2410	2230	4610	2290	826	479	1210
22	1170	912	1650	570	790	2240	2660	4070	2120	769	461	1150
23	1090	942	1750	550	820	2110	5360	3710	1990	729	480	1120
24	1040	942	2000	550	860	2030	7700	3680	1880	706	503	1120
25	1000	922	2900	540	920	1950	9600	3690	1770	692	504	1110
26	994	942	3900	540	1050	1910	12000	3610	1690	676	541	1160
27	953	927	4600	540	1250	1920	14300	3880	1660	647	613	1220
28	902	907	5030	540	1800	1940	12000	3720	1750	629	596	1260
29	877	887	4160	530	---	1910	9920	3220	1720	622	721	1310
30	848	877	2560	530	---	1870	9600	2970	1880	660	2590	1430
31	843	---	1820	530	---	1890	---	2860	---	595	1570	---
TOTAL	27871	29010	59978	28340	18550	85650	131310	137730	64900	32724	19752	38881
MEAN	899	967	1935	914	663	2763	4377	4443	2163	1056	637	1296
MAX	1370	1300	5030	1950	1800	4550	14300	8980	3220	2000	2590	1920
MIN	565	777	650	530	490	1070	1810	2650	1660	595	461	697
CFSM	.25	.27	.55	.26	.19	.78	1.24	1.26	.61	.30	.18	.37
IN.	.29	.31	.63	.30	.20	.90	1.39	1.45	.68	.35	.21	.41
AC-FT	55280	57540	119000	56210	36790	169900	260500	273200	128700	64910	39180	77120

CAL YR 1984	TOTAL	1396627	MEAN	3816	MAX	28000	MIN	513	CFSM	1.08	IN.	14.73	AC-FT	2770000
WTR YR 1985	TOTAL	674696	MEAN	1848	MAX	14300	MIN	461	CFSM	.52	IN.	7.12	AC-FT	1338000

06608500 SOLDIER RIVER AT PISGAH, IA

LOCATION.--Lat 41°49'50", long 95°55'54", in NW1/4 NE1/4 sec.14, T.81 N., R.44 W., Harrison County, Hydrologic Unit 10230001, on right bank at downstream side 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 13.1 mi upstream from mouth.

DRAINAGE AREA.--407 mi².

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. 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.

REMARKS.--Estimated daily discharges: Dec. 4-16, 18-28 and Dec. 31 to Mar. 4. Records good except those for periods of estimated discharge, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--45 years, 131 ft³/s, 4.37 in/yr, 94,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s June 12, 1950, gage height, 28.17 ft; minimum daily, 2.0 ft³/s Jan. 2-10, 1945.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 28	----	*2,900	a *14.17				

a ice jam
Minimum daily discharge, 73 ft³/s Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	177	146	110	130	140	177	322	189	146	113	94
2	153	157	150	109	130	140	212	251	183	143	105	90
3	139	158	138	108	130	250	255	237	175	134	103	86
4	141	160	132	111	130	536	231	229	174	134	105	84
5	145	152	129	112	130	187	221	426	180	127	105	124
6	191	150	128	120	130	170	208	388	172	125	99	130
7	205	154	127	123	130	176	196	244	170	125	91	90
8	174	155	126	128	130	159	193	227	171	125	89	77
9	301	179	126	130	130	153	190	218	164	129	88	73
10	209	322	125	130	130	154	187	215	162	129	88	75
11	170	193	126	132	131	167	188	222	191	125	89	79
12	178	174	128	132	131	160	217	233	167	125	89	81
13	176	171	129	132	131	154	258	217	152	127	95	120
14	168	170	130	132	131	154	192	368	150	127	98	107
15	523	161	260	132	132	150	185	534	434	123	100	89
16	280	146	900	132	132	152	177	277	217	118	91	82
17	358	149	527	131	135	150	168	244	179	116	96	82
18	283	148	250	131	145	151	167	234	165	113	111	83
19	317	142	230	131	170	159	163	230	165	113	91	79
20	213	145	450	131	200	156	169	375	158	115	86	80
21	193	149	340	130	400	157	164	249	154	115	92	85
22	185	157	300	130	330	157	165	225	146	115	100	88
23	178	160	270	130	215	161	191	222	146	105	103	98
24	174	159	250	130	175	165	191	224	146	104	112	101
25	177	161	235	130	163	152	195	221	145	118	88	94
26	179	170	230	130	155	146	336	208	143	107	85	92
27	172	152	530	130	149	221	345	202	199	101	81	89
28	165	145	1100	130	143	212	264	194	174	105	81	88
29	157	147	571	130	---	176	250	188	150	96	129	123
30	161	147	289	130	---	168	291	237	148	119	199	157
31	163	---	130	130	---	182	---	210	---	120	109	---
TOTAL	6380	4910	8702	3927	4468	5515	6346	8071	5269	3724	3111	2820
MEAN	206	164	281	127	160	178	212	260	176	120	100	94.0
MAX	523	322	1100	132	400	536	345	534	434	146	199	157
MIN	139	142	125	108	130	140	163	188	143	96	81	73
CFSM	.51	.40	.69	.31	.39	.44	.52	.64	.43	.29	.25	.23
IN.	.58	.45	.80	.36	.41	.50	.58	.74	.48	.34	.28	.26
AC-FT	12650	9740	17260	7790	8860	10940	12590	16010	10450	7390	6170	5590

CAL YR 1984	TOTAL	130163	MEAN	356	MAX	5110	MIN	90	CFSM	.87	IN.	11.90	AC-FT	258200
WTR YR 1985	TOTAL	63243	MEAN	173	MAX	1100	MIN	73	CFSM	.43	IN.	5.78	AC-FT	125400

06609500 BOYER RIVER AT LOGAN, IA

LOCATION.--Lat 41°38'33", 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 9 ft downstream from Illinois Central Railroad bridge at Logan, 0.4 mi downstream from Elk Grove Creek, 10.5 mi upstream from Willow Creek, and 15.8 mi upstream from mouth.

DRAINAGE AREA.--871 mi².

PERIOD OF RECORD.--May 1918 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 (Chicago and Northwestern Railway Company bench mark). See WSP 1918 for history of changes prior to Oct. 18, 1960.

REMARKS.--Estimated daily discharges: Dec. 5-28, Dec. 31 to Feb. 21, and May 15-24. Records fair except for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--53 years (water years 1919-24, 1939-85), 345 ft³/s, 5.07 in/yr, 235,400 acre-ft/yr; median of yearly mean discharge, 280 ft³/s, 4.4 in/yr, 203,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s Feb. 19, 1971, gage height, 22.65 ft, from floodmark; maximum gage height, 25.22 ft Mar. 1, 1965, backwater from ice; minimum daily discharge, 1.5 ft³/s July 16, 1938.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	----	a*8,600	*15.54				

a backwater from ice.
Minimum discharge, 113 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	226	277	228	330	240	383	306	720	489	315	179	181
2	222	265	222	300	238	370	339	593	476	312	173	152
3	217	251	211	295	235	380	478	550	450	304	162	137
4	232	252	205	290	232	810	591	540	476	284	161	137
5	234	240	205	288	230	592	653	601	459	263	157	482
6	329	233	201	285	230	375	556	725	447	247	152	210
7	336	230	200	281	230	347	507	543	430	265	149	206
8	274	231	200	280	230	336	467	474	413	263	146	157
9	376	235	198	280	230	306	435	455	397	256	140	141
10	357	327	195	279	230	294	425	441	388	245	137	137
11	280	355	190	278	229	304	416	437	494	216	130	138
12	261	322	189	274	229	308	416	450	489	206	125	143
13	247	291	188	270	229	292	444	450	419	208	128	187
14	250	278	185	270	229	304	434	567	401	214	137	181
15	367	267	280	269	229	284	412	1070	724	208	137	172
16	542	253	2500	265	229	279	400	850	524	197	141	157
17	541	251	1600	262	230	268	381	660	411	181	156	152
18	450	256	600	261	245	261	368	540	364	175	151	148
19	439	245	310	260	265	267	359	530	348	399	141	134
20	390	233	270	260	330	265	350	800	338	268	120	148
21	339	230	330	255	1950	263	351	650	327	227	228	179
22	298	234	290	254	1600	260	366	590	312	181	210	164
23	280	249	230	251	686	294	389	560	519	183	146	164
24	269	241	190	250	506	310	406	529	410	187	156	166
25	269	241	200	249	424	302	396	533	318	193	138	168
26	294	246	230	248	443	282	577	524	307	214	128	168
27	282	246	400	247	371	339	759	682	339	191	123	160
28	255	238	3000	245	356	414	805	590	382	173	120	156
29	249	233	1930	244	---	350	683	460	368	168	118	181
30	244	235	1020	242	---	321	675	675	336	183	225	257
31	244	---	380	240	---	335	---	547	---	184	270	---
TOTAL	9593	7685	16577	8302	11105	10495	14144	18336	12555	7110	4784	5263
MEAN	309	256	535	268	397	339	471	591	419	229	154	175
MAX	542	355	3000	330	1950	810	805	1070	724	399	270	482
MIN	217	230	185	240	229	260	306	437	307	168	118	134
CFSM	.35	.29	.61	.31	.46	.39	.54	.68	.48	.26	.18	.20
IN.	.41	.33	.71	.35	.47	.45	.60	.78	.54	.30	.20	.22
AC-FT	19030	15240	32880	16470	22030	20820	28050	36370	24900	14100	9490	10440

CAL YR 1984	TOTAL	309430	MEAN	845	MAX	5980	MIN	170	CFSM	.97	IN.	13.22	AC-FT	613800
WTR YR 1985	TOTAL	125949	MEAN	345	MAX	3000	MIN	118	CFSM	.40	IN.	5.38	AC-FT	249800

06610000 MISSOURI RIVER AT OMAHA, NE

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 at mile 615.9.

DRAINAGE AREA.--322,800 mi², approximately.

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. 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.--Estimated daily discharges: Dec. 7-10, Jan. 11-14, 20, 21, 23-27, and Feb. 1-3. Records good except estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. U.S. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--57 years, 30,560 ft³/s, 22,141,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 396,000 ft³/s Apr. 18, 1952, gage height, 40.20 ft, present datum; minimum, about 2,200 ft³/s Jan. 6, 1937; minimum gage height observed, 7.23 ft, present datum, Jan. 10, 1957, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70,700 ft³/s April 24, gage height, 22.98 ft; minimum daily discharge, 20,800 ft³/s Jan. 23; minimum gage height 10.00 ft Jan 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49600	56600	54000	24300	28500	28100	38400	40100	40900	39000	35900	36300
2	49700	55600	54200	24700	27000	27500	37100	44900	41200	38900	35600	34200
3	49000	54300	50900	24300	28000	27800	36400	45500	42600	38900	34800	35600
4	48500	54300	46100	24900	28000	35000	36800	43000	42600	38500	35000	35900
5	47800	54100	41700	27300	28000	41400	38100	41600	40900	38100	35500	36300
6	48300	54600	38300	28300	27400	31600	39100	41500	38300	37500	34800	36500
7	47700	55400	35800	27200	26600	29700	39600	40100	36900	37100	34400	36400
8	48800	54600	34000	26400	26000	29800	40000	40200	39200	36800	34500	37500
9	47500	55100	32000	25800	25800	30500	39800	40700	40700	36800	34600	38700
10	47500	57400	32200	25100	25300	33300	38500	39800	40000	37000	34500	38400
11	47800	57200	32600	27500	25400	34200	37700	39100	39400	36800	34500	36900
12	48600	55200	33400	25000	24900	34500	38200	38100	39100	36500	34500	35500
13	49100	54600	33500	24500	24100	35600	39800	37800	38500	36300	35200	35100
14	50100	55900	32300	24400	24200	36700	39100	38100	37400	36300	37200	37400
15	52200	57100	32100	26000	24600	36900	38100	43500	37200	36000	35600	39100
16	53800	56500	43000	23400	24500	37800	37000	45300	40800	35700	34400	36800
17	53300	54400	41700	23600	24900	37600	35700	41600	39600	35500	35200	36700
18	52700	52900	34500	24800	25200	36600	35900	39000	38500	35700	35200	38000
19	53300	52500	31100	25200	25600	36300	36500	39100	37000	39300	35200	36800
20	55400	52800	31200	24500	25700	37300	36200	42400	35900	38800	33800	37000
21	56100	53100	32800	23500	28800	38000	37000	43800	35800	38900	33400	38400
22	55700	52300	32800	21000	33300	38000	43500	42200	35500	36500	34400	38600
23	56300	52000	29500	20800	28800	37600	56100	41200	36300	35100	34300	38700
24	56700	53300	28000	25300	27200	37400	68800	40700	37500	35200	34100	37900
25	57700	54400	27300	27500	27000	37100	63200	40900	36000	35800	34200	37100
26	56800	54700	25000	30000	27200	37900	50400	41300	36000	35900	33700	36700
27	56900	56200	27000	29500	28400	39000	48800	42100	38100	35700	33500	36500
28	58900	55400	35000	27100	28800	40100	51000	42400	44500	35100	33200	36000
29	58000	55000	32000	29000	---	39800	45700	41600	43600	35400	33200	36600
30	57400	54300	29400	30200	---	38600	41000	40900	39700	36600	36200	37600
31	57100	---	25200	29700	---	38600	---	41400	---	36500	43500	---
TOTAL	1628300	1641800	1088600	800800	749200	1100300	1263500	1279900	1169700	1142200	1084100	1109200
MEAN	52530	54730	35120	25830	26760	35490	42120	41290	38990	36850	34970	36970
MAX	58900	57400	54200	30200	33300	41400	68800	45500	44500	39300	43500	39100
MIN	47500	52000	25000	20800	24100	27500	35700	37800	35500	35100	33200	34200
AC-FT	3230000	3257000	2159000	1588000	1486000	2182000	2506000	2539000	2320000	2266000	2150000	2200000

CAL YR 1984 TOTAL 17825200 MEAN 48700 MAX 114000 MIN 22200 AC-FT35356000
WTR YR 1985 TOTAL 14057600 MEAN 38510 MAX 68800 MIN 20800 AC-FT27883000

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. Samples for particle-size distribution were collected from boat cross-section 3.6 mi downstream from gaging station.

PERIOD OF RECORD.--Water years 1969-76, 1978 to current year. Daily sediment loads for April 1939 to September 1971 are in reports of Corps of Engineers.

PERIOD OF DAILY RECORD.--
CHEMICAL ANALYSES: July 1969 to June 1972.
SPECIFIC CONDUCTANCE: October 1972 to September 1976, January 1978 to September 1981.
WATER TEMPERATURES: October 1971 to September 1976, January 1978 to September 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 950 microsiemens Dec. 4,5, 1980; minimum daily, 335 microsiemens Mar. 22, 1978.
WATER TEMPERATURES: Maximum daily, 32.0°C July 24, 1972; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,180 mg/L May 19, 1974; minimum daily mean, 165 mg/L Sept. 13, 1976.
SEDIMENT LOADS: Maximum daily, 1,060,000 tons May 19, 1974; minimum daily, 3,990 tons Jan. 14, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 1984											
13...	10:15	52900	820	7.8	6.5	26	9.1	77	735	100	2300
JAN 1985											
07...	12:30	27200	830	8.0	1.5	24	12.2	90	737	K420	440
MAR											
11...	12:30	31800	655	8.1	5.0	54	11.8	97	731	580	4700
MAY											
06...	10:30	41900	830	7.8	17.0	68	8.4	90	736	1000	1900
JUN											
24...	11:30	37500	768	8.1	22.0	140	--	--	735	3600	4200
AUG											
27...	12:30	34300	748	8.3	22.0	33	8.4	99	740	180	44

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1984											
13...	110	290	72	27	71	34	2	4.9	180	230	13
JAN 1985											
07...	110	310	77	28	65	31	2	5.2	200	210	14
MAR											
11...	70	250	62	22	48	29	1	5.5	176	180	11
MAY											
06...	140	350	89	31	48	23	1	5.8	210	210	13
JUN											
24...	28	260	65	24	62	33	2	5.5	185	200	11
AUG											
27...	84	260	65	24	67	35	2	5.1	178	210	11

K Results based on colony count outside ideal range.

06610000 MISSOURI RIVER AT OMAHA, NE--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)
NOV 1984											
13...	0.5	7.8	536	540	0.73	76600	0.60	0.04	0.05	0.9	0.03
JAN 1985											
07...	0.5	11	541	530	0.74	39700	1.50	0.13	0.17	1.0	0.03
MAR											
11...	0.4	11	422	450	0.57	36200	1.70	0.17	0.22	2.6	0.08
MAY											
06...	0.6	10	557	530	0.76	63000	2.80	0.10	0.13	0.8	0.14
JUN											
24...	0.4	7.7	495	520	0.67	50100	1.20	0.06	0.08	1.5	0.06
AUG											
27...	0.5	7.3	497	500	0.68	46000	0.14	0.02	0.03	0.7	<0.01

DATE	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)
NOV 1984											
13...	--	0.02	0.09	450	64300	16	1	20	59	<0.5	<1
JAN 1985											
07...	--	0.04	0.17	342	25100	37	--	--	--	--	--
MAR											
11...	--	0.09	0.57	1160	99600	78	1	<10	140	<0.5	4
MAY											
06...	--	0.48	0.16	894	101000	79	1	30	120	<0.5	--
JUN											
24...	2.0	0.16	0.66	957	96900	83	--	--	--	--	--
AUG											
27...	0.12	0.03	0.04	401	37100	32	3	10	79	<0.5	<1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)
NOV 1984											
13...	<1	<3	39	10	<1	53	6	<0.1	<10	8	2
JAN 1985											
07...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	1	<3	2	23	--	39	10	<0.1	<10	10	<1
MAY											
06...	<1	<3	5	10	--	52	4	<0.1	<10	3	3
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
27...	<1	<3	3	4	<1	48	1	0.2	<10	1	2

DATE	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)
NOV 1984											
13...	<1	560	<6	25	--	--	--	--	--	--	--
JAN 1985											
07...	--	--	--	--	<13	5.3	<7.2	<6.2	7.1	6.1	0.11
MAR											
11...	<1	440	<6	50	--	--	--	--	--	--	--
MAY											
06...	<1	510	<6	11	--	--	--	--	--	--	--
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
27...	<1	560	<6	5	--	--	--	--	--	--	--

06610000 MISSOURI RIVER AT OMAHA, NE--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
OCT 1984											
03...	WATER	TEMPERATURE	13.0°C	(1030-1300	HOURS);	DISCHARGE,		48,600 ft³/s			
03...	10:30	180	12.0	2.80	4.37	280	--	38	56	98	100
03...	10:35	180	--	6.00	3.72	805	--	15	26	65	100
03...	10:40	180	--	8.60	2.98	615	--	18	27	69	100
03...	10:45	180	--	10.0	3.24	1140	--	11	18	68	100
03...	10:50	180	--	10.8	2.76	1450	--	8	14	62	100
03...	11:10	310	12.4	2.90	6.32	296	--	40	51	96	100
03...	11:15	310	--	6.20	6.11	399	--	33	47	97	100
03...	11:20	310	--	8.90	6.32	514	--	25	38	97	100
03...	11:25	310	--	10.3	5.89	520	--	22	34	94	100
03...	11:29	310	--	11.2	5.59	701	--	17	28	91	100
03...	11:30	410	15.8	3.70	6.24	--	--	--	--	--	--
03...	11:35	410	--	7.90	6.02	--	--	--	--	--	--
03...	11:40	410	--	11.3	5.89	--	--	--	--	--	--
03...	11:42	410	--	--	--	690	5	11	--	--	--
03...	11:45	410	--	13.2	6.11	--	--	--	--	--	--
03...	11:50	410	--	14.2	5.32	--	--	--	--	--	--
03...	11:55	410	--	14.9	4.70	--	--	--	--	--	--
03...	12:00	510	17.0	3.90	7.20	283	--	57	70	100	--
03...	12:05	510	--	8.50	6.99	353	--	38	51	99	100
03...	12:10	510	--	12.1	6.54	454	--	29	44	98	100
03...	12:15	510	--	14.2	6.28	630	--	22	36	97	100
03...	12:20	510	--	15.3	6.11	697	--	18	30	97	100
03...	12:23	510	--	16.0	5.80	1680	--	8	14	90	100
03...	12:25	590	18.8	4.30	6.11	268	--	50	64	98	100
03...	12:30	590	--	9.40	5.67	340	--	36	54	98	100
03...	12:35	590	--	13.4	5.32	525	--	30	45	96	100
03...	12:40	590	--	15.7	5.45	449	--	27	40	93	100
03...	12:45	590	--	16.9	4.98	562	--	20	34	92	100
03...	12:50	590	--	17.7	4.07	717	--	16	29	88	100
MAY 1985											
01...	WATER	TEMPERATURE	16.0°C	(1115-1530	HOURS);	DISCHARGE,		40,300 ft³/s			
01...	11:15	140	9.80	2.30	4.00	1050	--	92	95	99	100
01...	11:25	140	--	4.90	3.89	1170	--	85	87	98	100
01...	11:35	140	--	7.00	3.57	1270	--	80	83	96	100
01...	11:45	140	--	8.20	3.55	1400	--	72	74	91	100
01...	11:55	140	--	8.80	3.37	1330	--	74	78	93	100
01...	12:00	265	11.2	2.60	4.15	1160	--	87	90	100	--
01...	12:05	265	--	5.60	4.09	1290	--	80	84	98	100
01...	12:10	265	--	8.00	4.41	1310	--	79	83	98	100
01...	12:15	265	--	9.30	4.46	1400	--	75	80	94	100
01...	12:20	265	--	10.0	4.00	1390	--	75	79	96	100
01...	12:35	390	14.8	3.40	3.94	--	--	--	--	--	--
01...	12:45	390	--	7.40	4.11	--	--	--	--	--	--
01...	12:50	390	--	--	--	1480	28	67	--	--	--
01...	12:55	390	--	10.6	3.87	--	--	--	--	--	--
01...	13:05	390	--	12.3	3.98	--	--	--	--	--	--
01...	13:10	390	--	13.3	4.11	--	--	--	--	--	--
01...	13:15	390	--	13.9	3.87	--	--	--	--	--	--
01...	13:20	490	17.8	4.10	5.17	1450	--	74	78	98	100
01...	13:30	490	--	8.90	4.61	1450	--	72	76	97	100
01...	13:40	490	--	12.7	4.59	1400	--	75	79	97	100
01...	13:50	490	--	14.8	4.76	1480	--	73	77	97	100
01...	13:55	490	--	16.0	4.30	1620	--	66	71	96	100
01...	14:00	490	--	16.8	4.87	1740	--	62	66	95	100
01...	14:05	590	18.4	4.30	5.54	1350	--	78	83	99	100
01...	14:10	590	--	9.20	5.39	1180	--	85	89	100	--
01...	14:15	590	--	13.1	4.54	1170	--	85	90	100	--
01...	14:20	590	--	15.3	4.30	1630	--	68	73	98	100
01...	14:25	590	--	16.6	4.28	1800	--	61	67	98	100
01...	14:30	590	--	17.3	3.24	1790	--	59	63	98	100

06610000 MISSOURI RIVER AT OMAHA, NE--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED MATERIAL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
JUN 1985											
05...	WATER TEMPERATURE	17.0°C (1030-1430 HOURS);		DISCHARGE,	41,400 ft³/s						
05...	10:30	210	10.8	2.50	4.02	448	--	84	90	100	--
05...	10:35	210	--	5.40	3.87	449	--	80	85	98	100
05...	10:40	210	--	7.70	3.37	536	--	68	75	97	100
05...	10:45	210	--	9.00	3.02	609	--	60	68	93	100
05...	10:50	210	--	9.70	2.65	556	--	64	71	94	100
05...	11:00	340	14.2	3.30	5.04	512	--	70	79	97	100
05...	11:05	340	--	7.10	4.65	663	--	58	68	98	100
05...	11:10	340	--	10.1	4.30	835	--	45	54	95	100
05...	11:15	340	--	11.8	4.33	947	--	40	48	94	100
05...	11:20	340	--	12.8	3.61	949	--	40	48	93	100
05...	11:25	340	--	13.4	3.37	1110	--	33	40	90	100
05...	11:35	470	18.4	4.30	5.37	--	--	--	--	--	--
05...	11:40	470	--	9.20	5.02	--	--	--	--	--	--
05...	11:45	470	--	13.1	4.78	--	--	--	--	--	--
05...	11:48	470	--	--	--	799	23	43	--	--	--
05...	11:50	470	--	15.3	3.98	--	--	--	--	--	--
05...	11:55	470	--	16.6	3.78	--	--	--	--	--	--
05...	12:00	470	--	17.3	3.37	--	--	--	--	--	--
05...	12:45	560	18.6	4.30	5.17	441	--	79	85	100	--
05...	12:50	560	--	9.30	5.22	536	--	65	75	100	--
05...	12:55	560	--	13.3	4.67	593	--	62	72	99	100
05...	13:00	560	--	15.5	4.63	728	--	50	63	99	100
05...	13:05	560	--	16.7	3.96	921	--	42	52	96	100
05...	13:10	560	--	17.5	4.54	772	--	47	60	98	100
05...	13:20	650	24.4	5.60	4.65	403	--	85	92	100	--
05...	13:25	650	--	12.2	4.00	415	--	80	88	100	--
05...	13:30	650	--	17.4	3.72	453	--	76	81	100	--
05...	13:35	650	--	20.3	3.68	474	--	72	80	99	100
05...	13:40	650	--	22.0	3.11	641	--	54	60	97	100
05...	13:45	650	--	23.0	2.85	735	--	48	56	88	100
05...	13:50	650	--	23.5	2.85	1330	--	27	32	91	100
JUL 1985											
17...	WATER TEMPERATURE	25.5°C (1000-1250 HOURS);		DISCHARGE,	37,000 ft³/s						
17...	10:00	200	12.0	2.80	4.11	150	--	85	94	100	--
17...	10:05	200	--	6.00	3.39	199	--	65	83	100	--
17...	10:10	200	--	8.60	3.57	286	--	60	70	100	--
17...	10:15	200	--	10.0	3.35	316	--	50	61	96	100
17...	10:20	200	--	10.8	3.22	325	--	55	64	98	100
17...	10:35	300	13.4	3.10	4.04	257	--	58	69	97	100
17...	10:40	300	--	6.60	3.76	352	--	44	56	97	100
17...	10:45	300	--	9.40	3.35	430	--	38	49	96	100
17...	10:50	300	--	11.0	3.07	460	--	34	46	94	100
17...	10:55	300	--	11.9	3.00	634	--	26	38	94	100
17...	11:00	300	--	12.4	2.37	633	--	27	38	93	100
17...	11:15	420	18.8	4.30	4.35	--	--	--	--	--	--
17...	11:20	420	--	9.40	3.85	--	--	--	--	--	--
17...	11:25	420	--	13.4	3.20	--	--	--	--	--	--
17...	11:28	420	--	--	--	588	9	24	--	--	--
17...	11:30	420	--	15.7	2.57	--	--	--	--	--	--
17...	11:35	420	--	16.9	2.27	--	--	--	--	--	--
17...	11:40	420	--	17.7	1.72	--	--	--	--	--	--
17...	11:55	520	17.6	4.10	4.67	348	--	50	64	100	--
17...	11:59	520	--	8.80	4.33	284	--	60	76	100	--
17...	12:03	520	--	12.6	3.94	302	--	56	70	100	--
17...	12:07	520	--	14.7	4.04	373	--	45	61	100	--
17...	12:11	520	--	15.8	3.15	423	--	42	58	99	100
17...	12:15	520	--	16.6	2.85	513	--	36	52	99	100
17...	12:30	595	20.0	4.60	4.28	199	--	77	88	100	--
17...	12:33	595	--	10.0	3.94	294	--	60	72	98	100
17...	12:36	595	--	14.3	3.63	289	--	61	74	98	100
17...	12:39	595	--	16.7	3.28	346	--	50	62	98	100
17...	12:42	595	--	18.0	2.85	353	--	50	63	97	100
17...	12:45	595	--	18.8	2.50	448	--	40	53	96	100

06610000 MISSOURI RIVER AT OMAHA, NE--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED MATERIAL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
AUG 1985											
28...	WATER	TEMPERATURE	23.0°C (1025-1320 HOURS);			DISCHARGE,	33,300 ft³/s				
28...	10:25	170	10.0	2.30	3.33	210	--	56	64	97	100
28...	10:30	170	--	5.00	3.11	195	--	54	67	97	100
28...	10:35	170	--	7.10	2.89	245	--	44	53	98	100
28...	10:40	170	--	8.30	2.91	324	--	38	47	96	100
28...	10:45	170	--	9.00	2.48	494	--	24	31	95	100
28...	11:03	305	10.4	2.40	4.50	221	--	54	67	100	--
28...	11:06	305	--	5.20	4.37	293	--	43	54	100	--
28...	11:09	305	--	7.40	3.94	412	--	31	47	99	100
28...	11:12	305	--	8.70	3.33	528	--	23	35	94	100
28...	11:15	305	--	9.40	2.85	626	--	22	34	93	100
28...	11:30	425	15.0	3.50	4.65	--	--	--	--	--	--
28...	11:35	425	--	7.50	4.11	--	--	--	--	--	--
28...	11:40	425	--	10.7	4.30	--	--	--	--	--	--
28...	11:42	425	--	--	--	471	8	20	--	--	--
28...	11:45	425	--	12.5	4.00	--	--	--	--	--	--
28...	11:50	425	--	13.5	3.72	--	--	--	--	--	--
28...	11:55	425	--	14.1	3.76	--	--	--	--	--	--
28...	12:05	505	18.6	4.30	4.70	254	--	53	66	100	--
28...	12:10	505	--	9.20	4.15	371	--	36	49	97	100
28...	12:15	505	--	13.1	3.96	410	--	34	48	97	100
28...	12:20	505	--	15.3	3.72	497	--	28	44	96	100
28...	12:25	505	--	16.6	3.55	546	--	24	38	97	100
28...	12:30	505	--	17.3	3.18	628	--	21	36	98	100
28...	12:45	605	20.0	4.60	4.85	145	--	72	91	100	--
28...	12:50	605	--	10.0	4.54	201	--	59	74	100	--
28...	13:00	605	--	14.3	4.04	205	--	65	79	100	--
28...	13:05	605	--	16.7	3.72	206	--	55	68	91	100
28...	13:10	605	--	18.0	3.28	224	--	58	73	100	--
28...	13:15	605	--	18.8	2.96	259	--	52	68	100	--

PARTICLE SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
OCT									
03...	13:00	5	0	1	29	98	100	--	--
MAY									
01...	15:30	4	0	1	28	99	100	--	--
JUN									
05...	14:30	5	0	1	21	99	100	--	--
JUL									
17...	12:50	5	0	1	23	99	100	--	--
AUG									
28...	13:20	5	0	1	19	98	99	99	100

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE

LOCATION.--Lat 40°40'55", long 95°50'48", in NW1/4 NE1/4 sec.9, T.8 N., R.14 E., Otoe County, Hydrologic Unit 10240001, on right bank 0.7 mi upstream from Waubonsie Highway Bridge at Nebraska City, and at mile 562.6.

DRAINAGE AREA .--410,000 mi², approximately. The 3,959 mi² in Great Divide basin are not included.

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, supplementary adjustment of 1954. See WSP 1918 or 1919 for history of changes prior to Apr. 1, 1963.

REMARKS.--Estimated daily discharges: Dec. 13-16, 19-22 and 26, 31. Records good except for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. U.S. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--56 years, 36,690 ft³/s, 26,580,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 414,000 ft³/s Apr. 19, 1952; maximum gage height, 27.66 ft Apr. 18, 1952; minimum discharge, 1,600 ft³/s Dec. 31, 1946 (discharge measurement); minimum gage height observed, -0.28 ft Dec. 24, 1960, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83,900 ft³/s April 25, gage height, 17.55 ft; minimum daily, 21,800 ft³/s Jan 23; minimum gage height, 5.41 ft Jan. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52900	64700	61700	35900	31000	45200	46700	54900	48600	47900	36700	41100
2	52100	63500	61700	32500	30000	49200	46300	57500	48300	46600	37300	37700
3	52700	62000	60200	28500	29000	48400	46100	61700	48800	45600	38300	37900
4	52400	61700	56300	28500	29200	46700	45900	56400	49800	44500	38600	38200
5	52000	60700	52200	30300	29600	57700	46200	52000	49000	43100	39700	38100
6	53400	59500	48200	31900	29000	48700	47400	51200	48100	41500	40100	38800
7	54000	59400	46100	33200	28700	42400	47000	49200	46100	40600	39100	38300
8	55100	59300	44400	33900	28400	41700	47400	47600	46000	39200	39000	39000
9	56300	59800	43000	34800	28300	39700	47400	46800	46700	39000	38600	39800
10	57200	62300	41400	33400	28600	41300	47500	45700	46500	38300	38800	40500
11	56700	63600	41500	31400	28800	42900	45900	45300	45500	38100	38700	40100
12	55900	63700	43000	29500	29100	43300	45000	45700	45200	37600	38000	39500
13	55600	63200	43400	28300	28400	43900	45600	45900	44100	37300	38000	39500
14	55600	62400	41200	27400	29000	45400	43600	49200	43100	37100	39200	42000
15	57300	62500	41400	27700	29500	45400	43400	61100	42200	36500	39800	47700
16	60700	63300	50800	28800	29600	46100	42200	75700	43600	36100	38600	47300
17	62900	63000	60600	27600	29900	46800	41200	65100	46000	36300	39300	44200
18	63400	61400	51000	28300	30700	46300	40900	60400	44600	36400	39600	44100
19	64800	60700	47100	30400	31600	46400	40900	56600	43900	44700	39800	43500
20	66200	60600	43600	30500	32100	47000	41500	58000	43200	53700	38600	42800
21	65400	61100	42600	27500	35300	46800	41300	58500	42900	44400	38300	43100
22	65100	60700	42100	24100	43500	46800	44300	55800	42400	42800	38200	43100
23	64900	61400	39400	21800	39600	46400	51800	52700	42300	39900	38800	43200
24	63900	60700	37200	25300	37700	46100	71000	51300	45300	39100	38900	42600
25	63400	60500	35100	30000	38200	45200	79100	49700	45400	38900	39000	41800
26	63500	61100	33900	32000	39200	45300	67000	49200	42600	38500	38800	41400
27	63000	61500	34400	31400	40400	46700	66500	49500	43000	37400	38800	41400
28	64500	62500	42600	29500	41400	46700	77200	49700	48600	36400	38000	41100
29	64400	62400	48100	29600	---	47000	67300	48800	53200	35900	37400	40700
30	64000	62000	44600	30900	---	46300	57300	48000	51700	36900	37300	41800
31	63900	---	39700	30800	---	46700	---	48100	---	37200	41600	---
TOTAL	1843200	1851200	1418500	925700	905800	1424500	1520900	1647300	1376700	1247500	1200900	1240300
MEAN	59460	61710	45760	29860	32350	45950	50700	53140	45890	40240	38740	41340
MAX	66200	64700	61700	35900	43500	57700	79100	75700	53200	53700	41600	47700
MIN	52000	59300	33900	21800	28300	39700	40900	45300	42200	35900	36700	37700
AC-FT	3656000	3672000	2814000	1836000	1797000	2825000	3017000	3267000	2731000	2474000	2382000	2460000

CAL YR 1984 TOTAL 23716500 MEAN 64800 MAX 180000 MIN 29300 AC-FT47042000
WTR YR 1985 TOTAL 16602500 MEAN 45490 MAX 79100 MIN 21800 AC-FT32931000

06807000 MISSOURI RIVER AT NEBRASKA CITY, NB--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1951 to current year. Daily sediment loads August 1957 to September 1971 in reports of Corps of Engineers.

REMARKS.--Samples for particle size distribution were collected from boat cross-section 0.7 mi upstream from gage.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1951 to September 1976.
WATER TEMPERATURES: May 1951 to September 1976.
SEDIMENT DISCHARGE: October 1971 to September 1976.

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°C July 26, 1977; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,220 mg/L May 19, 1974; minimum daily mean, 137 mg/L Jan. 14, 1975.
SEDIMENT LOADS: Maximum daily, 1,590,000 tons May 19, 1974; minimum daily, 4,050 tons Jan. 17, 1972.

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
OCT 1984												
02...	WATER TEMPERATURE, 13.0°C (1105-1330 HOURS); DISCHARGE, 51,900 ft³/s.											
02...	11:05	120	18.0	4.20	6.11	354	--	37	44	90	100	--
02...	11:10	120	--	9.00	5.89	434	--	29	38	78	100	--
02...	11:15	120	--	12.9	2.63	780	--	16	21	67	99	100
02...	11:20	120	--	15.0	1.68	1470	--	9	11	61	99	100
02...	11:25	120	--	16.2	1.68	1870	--	8	12	50	96	100
02...	11:30	120	--	17.0	1.76	1640	--	6	8	48	97	100
02...	11:35	220	12.0	2.80	8.08	336	--	44	55	100	--	--
02...	11:40	220	--	6.00	7.86	464	--	30	42	97	100	--
02...	11:45	220	--	8.60	6.98	637	--	21	31	91	100	--
02...	11:50	220	--	10.0	6.85	809	--	17	26	97	100	--
02...	11:55	220	--	10.8	6.32	1260	--	11	15	90	100	--
02...	12:05	320	12.2	2.80	8.30	--	--	--	--	--	--	--
02...	12:10	320	--	6.10	7.86	--	--	--	--	--	--	--
02...	12:14	320	--	--	--	510	9	19	--	--	--	--
02...	12:15	320	--	8.70	7.64	--	--	--	--	--	--	--
02...	12:20	320	--	10.2	7.42	--	--	--	--	--	--	--
02...	12:25	320	--	11.0	7.42	--	--	--	--	--	--	--
02...	12:30	420	17.0	3.90	6.85	177	--	69	73	82	100	--
02...	12:35	420	--	8.50	6.32	230	--	57	75	100	--	--
02...	12:40	420	--	12.1	5.85	488	--	30	50	100	--	--
02...	12:45	420	--	14.2	5.30	440	--	30	50	100	--	--
02...	12:50	420	--	15.3	5.32	665	--	21	37	100	--	--
02...	12:55	420	--	16.0	4.37	1050	--	13	31	100	--	--
02...	13:00	550	16.6	3.80	4.07	183	--	75	82	97	100	--
02...	13:05	550	--	8.30	4.15	192	--	76	84	98	100	--
02...	13:10	550	--	11.9	3.50	222	--	72	79	97	100	--
02...	13:15	550	--	13.8	3.07	199	--	63	73	99	100	--
02...	13:20	550	--	14.9	2.72	233	--	56	66	95	100	--
02...	13:25	550	--	15.6	2.37	231	--	56	66	99	100	--

06807000 MISSOURI RIVER AT NEBRASKA CITY, NB--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	% FINER	SED. SUSP. FALL DIAM. THAN .004 MM	% FINER	SED. SUSP. FALL DIAM. THAN .062 MM	% FINER	SED. SUSP. FALL DIAM. THAN .125 MM	% FINER	SED. SUSP. FALL DIAM. THAN .250 MM	% FINER	SED. SUSP. FALL DIAM. THAN .500 MM	% FINER	SED. SUSP. FALL DIAM. THAN 1.00 MM
APR 1985																		
30...	WATER TEMPERATURE 14.0°C (1100-1530 HOURS); DISCHARGE, 57,100 ft³/s.																	
30...	11:00	85.0	22.2	5.10	5.24	2050	--		94		96		100		--		--	
30...	11:05	85.0	--	11.1	5.45	2120	--		90		93		100		--		--	
30...	11:10	85.0	--	15.9	4.80	2390	--		82		86		98		100		--	
30...	11:15	85.0	--	18.5	4.37	2520	--		77		81		95		100		--	
30...	11:20	85.0	--	20.0	3.50	2400	--		81		85		98		100		--	
30...	11:25	85.0	--	20.9	3.94	2920	--		68		71		88		99		100	
30...	11:30	85.0	--	21.4	4.15	2690	--		73		77		93		100		--	
30...	12:05	195	21.6	5.00	6.54	2110	--		90		92		99		100		--	
30...	12:10	195	--	10.8	5.67	2270	--		85		89		98		100		--	
30...	12:15	195	--	15.4	5.15	2500	--		78		81		94		100		--	
30...	12:20	195	--	18.0	4.69	2810	--		70		73		90		100		--	
30...	12:25	195	--	19.4	3.81	3180	--		61		64		82		100		--	
30...	12:30	195	--	20.3	3.15	3090	--		65		68		88		100		--	
30...	12:35	195	--	20.8	7.42	2920	--		68		71		87		99		100	
30...	12:45	295	20.8	4.80	6.54	--	--		--		--		--		--		--	
30...	12:50	295	--	10.4	5.76	--	--		--		--		--		--		--	
30...	12:53	295	--	--	--	2580		40	77		--		--		--		--	
30...	12:55	295	--	14.9	5.15	--	--		--		--		--		--		--	
30...	13:00	295	--	17.3	3.98	--	--		--		--		--		--		--	
30...	13:10	295	--	18.7	3.68	--	--		--		--		--		--		--	
30...	13:20	395	17.8	4.00	5.76	2010	--		95		98		100		--		--	
30...	13:25	395	--	8.70	5.59	2180	--		89		92		100		--		--	
30...	13:30	395	--	12.4	5.02	2420	--		82		86		100		--		--	
30...	13:35	395	--	14.5	5.11	2550	--		78		81		100		--		--	
30...	13:40	395	--	15.7	4.95	2730	--		73		77		99		100		--	
30...	13:45	395	--	16.4	4.24	3530	--		56		60		99		100		--	
30...	14:00	545	23.4	5.40	3.85	1920	--		97		99		100		--		--	
30...	14:05	545	--	11.7	4.24	1960	--		97		99		100		--		--	
30...	14:10	545	--	16.7	3.42	1980	--		96		98		100		--		--	
30...	14:15	545	--	19.5	3.02	2000	--		96		98		100		--		--	
30...	14:20	545	--	21.1	2.72	2020	--		94		97		100		--		--	
30...	14:25	545	--	22.0	2.81	1990	--		95		97		100		--		--	
30...	14:30	545	--	22.5	2.55	2060	--		95		97		100		--		--	
JUN 1985																		
04...	WATER TEMPERATURE 27.0°C (1015-1400 HOURS); DISCHARGE, 50,000 ft³/s.																	
04...	10:15	90.0	19.0	4.40	4.98	412	--		75		83		99		100		--	
04...	10:20	90.0	--	9.50	5.02	461	--		70		78		98		100		--	
04...	10:25	90.0	--	13.6	4.07	451	--		66		75		98		100		--	
04...	10:30	90.0	--	15.8	3.55	527	--		61		71		98		100		--	
04...	10:35	90.0	--	17.1	3.65	588	--		56		66		96		100		--	
04...	10:40	90.0	--	17.9	3.11	603	--		54		63		95		100		--	
04...	11:00	200	18.4	4.30	5.76	442	--		72		78		100		--		--	
04...	11:05	200	--	9.20	5.74	633	--		51		60		97		100		--	
04...	11:10	200	--	13.1	5.17	656	--		51		61		96		100		--	
04...	11:15	200	--	15.3	4.54	777	--		44		52		97		100		--	
04...	11:20	200	--	16.6	4.46	1090	--		33		42		96		100		--	
04...	11:25	200	--	17.3	4.80	1230	--		29		39		94		100		--	
04...	11:30	300	15.0	3.50	6.06	--	--		--		--		--		--		--	
04...	11:35	300	--	7.50	5.80	--	--		--		--		--		--		--	
04...	11:40	300	--	10.7	5.20	--	--		--		--		--		--		--	
04...	11:45	300	--	12.5	5.30	--	--		--		--		--		--		--	
04...	11:50	300	--	13.5	5.56	--	--		--		--		--		--		--	
04...	11:55	300	--	14.1	5.06	--	--		--		--		--		--		--	
04...	12:00	300	--	--	--	879		14	33		--		--		--		--	
04...	12:15	425	15.4	3.60	6.02	471	--		70		82		100		--		--	
04...	12:20	425	--	7.70	5.95	489	--		69		80		100		--		--	
04...	12:25	425	--	11.0	5.59	656	--		50		64		99		100		--	
04...	12:30	425	--	12.8	5.26	805	--		42		58		98		100		--	
04...	12:35	425	--	13.9	5.17	930	--		37		51		100		--		--	
04...	12:40	425	--	14.5	4.63	1120	--		32		43		99		100		--	
04...	12:50	525	18.4	4.30	4.28	345	--		88		96		100		--		--	
04...	12:55	525	--	9.20	3.61	352	--		85		92		100		--		--	
04...	13:00	525	--	13.1	3.35	352	--		84		91		100		--		--	
04...	13:05	525	--	15.3	3.11	384	--		79		85		100		--		--	
04...	13:10	525	--	16.6	2.68	430	--		74		81		97		100		--	
04...	13:15	525	--	17.3	2.27	436	--		70		79		97		100		--	

06807000 MISSOURI RIVER AT NEBRASKA CITY, NB--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SAMPLING DEPTH (FEET)	STREAM VELOCITY, POINT) (FPS)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
JUL 1985												
16...	WATER TEMPERATURE	27.5°C	(1105-1540 HOURS);		DISCHARGE, 36,000 ft³/s.							
16...	11:05	60.0	17.2	4.00	4.83	209	--	83	92	100	--	--
16...	11:10	60.0	--	8.60	4.33	316	--	58	65	98	100	--
16...	11:15	60.0	--	12.3	3.87	323	--	57	67	97	100	--
16...	11:20	60.0	--	14.3	3.24	337	--	53	61	92	100	--
16...	11:25	60.0	--	15.5	2.92	433	--	40	48	87	100	--
16...	11:30	60.0	--	16.2	2.29	628	--	29	36	75	99	100
16...	11:50	150	14.4	3.30	5.67	304	--	60	69	97	100	--
16...	11:52	150	--	7.10	5.11	433	--	42	55	99	100	--
16...	11:54	150	--	10.1	4.72	617	--	30	41	98	100	--
16...	11:56	150	--	11.8	4.67	604	--	32	42	97	100	--
16...	11:58	150	--	12.8	4.33	740	--	26	36	96	100	--
16...	12:00	150	--	13.4	3.50	817	--	23	32	97	100	--
16...	12:50	275	14.6	3.30	5.80	110	--	--	--	--	--	--
16...	12:53	275	--	7.20	5.45	303	--	--	--	--	--	--
16...	12:56	275	--	10.3	4.85	435	--	--	--	--	--	--
16...	12:58	275	--	--	--	624	9	28	--	--	--	--
16...	12:59	275	--	12.0	3.98	787	--	--	--	--	--	--
16...	13:02	275	--	13.0	3.20	1100	--	--	--	--	--	--
16...	13:05	275	--	13.6	2.96	1640	--	--	--	--	--	--
16...	13:40	375	13.0	3.00	5.24	323	--	58	68	99	100	--
16...	13:43	375	--	6.40	4.80	379	--	46	56	99	100	--
16...	13:46	375	--	9.10	4.33	444	--	45	56	99	100	--
16...	13:49	375	--	10.7	4.11	702	--	31	42	99	100	--
16...	13:52	375	--	11.5	3.70	725	--	27	38	99	100	--
16...	13:55	375	--	12.0	3.65	684	--	30	40	92	100	--
16...	14:25	515	16.2	3.70	4.22	200	--	89	96	100	--	--
16...	14:30	515	--	8.10	3.57	216	--	85	95	100	--	--
16...	14:35	515	--	11.6	3.44	219	--	89	97	100	--	--
16...	14:40	515	--	13.5	2.98	222	--	83	92	100	--	--
16...	14:45	515	--	14.6	3.24	222	--	86	96	100	--	--
16...	14:50	515	--	15.2	2.74	283	--	71	80	95	100	--
AUG 1985												
27...	WATER TEMPERATURE	23.0°C	(1035-1130 HOURS);		DISCHARGE	39,000 ft³/s.						
27...	10:35	85.0	15.2	3.50	5.35	181		77	88	100	--	--
27...	10:40	85.0	--	7.50	5.09	268	--	52	62	99	100	--
27...	10:45	85.0	--	10.7	4.52	339	--	42	51	94	100	--
27...	10:50	85.0	--	12.5	3.87	502	--	29	37	83	100	--
27...	10:55	85.0	--	13.5	3.57	499	--	29	39	87	100	--
27...	11:00	85.0	--	14.1	2.79	584	--	26	36	83	100	--
27...	11:20	160	14.2	3.30	5.72	275	--	54	70	100	--	--
27...	11:25	160	--	7.10	5.45	372	--	40	54	99	100	--
27...	11:30	160	--	10.1	4.98	521	--	30	44	91	100	--
27...	11:35	160	--	11.8	4.26	575	--	26	39	96	100	--
27...	11:40	160	--	12.8	4.24	545	--	28	43	99	100	--
27...	11:45	160	--	13.4	4.17	652	--	23	36	92	100	--
27...	11:50	285	14.4	--	--	844	6	16	25	92	100	--
27...	11:55	285	--	3.30	5.56	--	--	--	--	--	--	--
27...	12:00	285	--	7.20	4.91	--	--	--	--	--	--	--
27...	12:05	285	--	10.3	4.41	--	--	--	--	--	--	--
27...	12:10	285	--	12.0	4.07	--	--	--	--	--	--	--
27...	12:15	285	--	13.0	3.61	--	--	--	--	--	--	--
27...	12:20	285	--	13.6	3.00	--	--	--	--	--	--	--
27...	12:30	410	12.2	2.80	5.09	208	--	67	78	100	--	--
27...	12:35	410	--	6.10	4.80	265	--	53	62	100	--	--
27...	12:40	410	--	8.70	4.59	415	--	39	50	100	--	--
27...	12:45	410	--	10.2	4.37	417	--	37	46	99	100	--
27...	12:50	410	--	11.0	4.15	503	--	32	43	99	100	--
27...	13:05	525	17.0	3.90	4.15	162	--	90	98	100	--	--
27...	13:10	525	--	8.50	3.72	161	--	86	95	100	--	--
27...	13:15	525	--	12.1	3.57	173	--	82	94	100	--	--
27...	13:20	525	--	14.2	3.35	171	--	80	93	100	--	--
27...	13:25	525	--	15.3	2.63	188	--	80	90	100	--	--
27...	13:30	525	--	16.0	2.46	199	--	73	82	99	100	--

06807000 MISSOURI RIVER AT NEBRASKA CITY, NB--Continued

WATER-QUALITY RECORDS

PARTICLE SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
OCT 02...	13:30	5	--	0	21	62	76	89	97	99	100
APR 30...	15:30	5	--	0	19	58	87	97	99	100	--
JUN 04...	14:00	5	0	1	22	49	80	96	99	100	--
JUL 16...	15:40	5	0	1	17	45	77	92	98	100	--
AUG 27...	13:35	5	--	0	24	51	77	91	97	99	100

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, 59.6 mi upstream from confluence with East Nishnabotna River, and at mile 75.1 mi upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--609 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,085.83 ft above NGVD. Prior to Sept. 15, 1980, on downstream end of right pier at same datum.

REMARKS.--Estimated daily discharge: Dec. 1-15, 19-27, Dec. 30 to Feb. 22. Records good excepts for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--26 years, 286 ft³/s, 6.38 in/yr, 207,200 acre-ft/yr; median of yearly mean discharges, 240 ft³/s, 5.4 in/yr, 174,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft³/s Sept. 13, 1972, gage height, 22.12 ft; minimum daily, 2.2 ft³/s Feb. 8, 9, 1971.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1845	4,700	8.62	Feb. 21	1715	ice jam	*14.49
Dec. 28	0745	*5,610	9.48				

Minimum discharge, 85 ft³/s Sept. 19.

REVISIONS.--The peak discharge for June 13, 1984 has been revised to 5,700 ft³/s.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	352	163	240	188	248	222	510	376	284	191	112
2	153	268	145	225	188	236	271	445	343	274	178	107
3	148	236	125	220	187	316	339	408	310	262	171	100
4	157	228	120	220	187	990	401	381	304	254	169	98
5	195	216	118	220	185	409	387	377	305	245	167	103
6	274	202	113	220	185	291	340	477	287	231	166	202
7	262	196	111	221	184	279	307	388	277	226	158	132
8	196	195	110	225	183	257	289	364	267	224	150	106
9	220	200	108	228	183	239	275	347	253	223	146	96
10	250	459	107	229	183	235	267	335	242	217	147	93
11	176	327	104	220	182	239	263	343	258	202	136	94
12	166	266	103	211	182	239	257	340	298	198	134	95
13	160	257	103	205	182	235	278	324	254	201	133	123
14	243	252	200	208	182	233	272	368	242	213	132	125
15	504	242	350	210	182	222	255	464	863	194	132	108
16	698	218	2720	210	189	221	244	383	358	184	127	99
17	476	215	1720	209	195	218	235	357	317	180	143	97
18	381	217	745	209	200	215	223	342	240	175	145	94
19	328	216	600	200	215	218	219	334	223	605	128	89
20	291	207	470	197	280	216	222	343	217	348	118	136
21	256	205	600	195	600	213	218	322	209	238	125	169
22	238	209	720	195	1500	212	229	304	194	208	230	126
23	223	210	450	194	595	227	256	301	232	187	145	122
24	214	209	340	193	669	242	261	577	1720	184	177	121
25	213	207	370	192	368	229	248	419	407	342	140	129
26	221	207	600	192	328	225	328	342	344	228	128	125
27	220	202	1500	191	267	237	409	632	631	184	121	110
28	205	192	4090	190	251	249	397	399	433	178	114	103
29	191	190	1220	190	---	236	368	322	335	170	112	118
30	187	189	600	189	---	231	388	1000	301	194	115	162
31	220	---	370	189	---	245	---	632	---	220	118	---
TOTAL	7822	6989	19195	6437	8420	8302	8668	12880	11040	7273	4496	3494
MEAN	252	233	619	208	301	268	289	415	368	235	145	116
MAX	698	459	4090	240	1500	990	409	1000	1720	605	230	202
MIN	148	189	103	189	182	212	218	301	194	170	112	89
CFSM	.41	.38	1.02	.34	.49	.44	.47	.68	.60	.39	.24	.19
IN.	.48	.43	1.17	.39	.51	.51	.53	.79	.67	.44	.27	.21
AC-FT	15510	13860	38070	12770	16700	16470	17190	25550	21900	14430	8920	6930

CAL YR 1984	TOTAL	245314	MEAN	670	MAX	6690	MIN	100	CFSM	1.10	IN.	14.98	AC-FT	486600
WTR YR 1985	TOTAL	105016	MEAN	288	MAX	4090	MIN	89	CFSM	.47	IN.	6.41	AC-FT	208300

06808500 WEST NISHNABOTNA RIVER AT RANDOLPH, IA

LOCATION.--Lat 40°52'23", long 95°34'48", in NE1/4 NE1/4 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, and 16.0 mi upstream from confluence with East Nishnabotna River and at mile 31.5 upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--1,326 mi².

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, unadjusted. Prior to Aug. 26, 1955, non-recording gage with supplementary water-stage recorder operating above 8.4 ft June 30, 1949 to Aug. 25, 1955 at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 7-13, 23-26 and Jan. 2 to Feb. 22. Records good except those for estimated discharges, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--37 years, 572 ft³/s, 5.86 in/yr, 414,100 acre-ft/yr; median of yearly mean discharges, 500 ft³/s, 51 in/yr, 362,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,500 ft³/s June 21, 1967, gage height, 22.60 ft; maximum gage height, 24.8 ft Mar. 5, 1949, from graph based on gage readings (backwater from ice); minimum daily discharge, 10 ft³/s Dec. 17-21, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of about 24 ft, discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 6,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	----	*5,600	a*17.57				

a Ice jam.
Minimum discharge, 195 ft³/s Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	363	666	363	443	410	679	540	655	739	473	394	251
2	359	779	356	440	405	658	534	712	572	456	348	238
3	356	625	335	440	400	783	590	660	552	443	329	229
4	360	570	328	470	400	1390	672	614	528	434	326	221
5	403	536	295	480	400	1290	704	589	534	415	314	219
6	566	498	286	490	400	747	660	584	528	401	461	219
7	772	477	283	490	400	653	598	654	512	387	326	274
8	560	471	278	470	400	640	534	581	505	380	294	250
9	498	469	265	450	400	607	524	559	487	373	285	212
10	649	470	260	425	400	590	516	543	467	368	288	203
11	548	661	250	405	400	597	514	553	480	359	289	202
12	459	531	245	400	400	592	508	564	495	354	271	207
13	446	459	240	415	400	589	512	567	518	354	268	224
14	453	431	233	430	400	572	520	698	487	354	264	253
15	977	418	305	450	400	550	509	770	484	359	264	257
16	1270	397	877	445	400	536	485	788	889	341	264	233
17	1250	383	3210	440	400	522	469	670	557	328	311	218
18	962	385	1190	440	430	519	457	629	514	319	338	210
19	810	385	779	420	450	515	447	599	448	679	295	202
20	706	375	658	400	500	509	473	734	435	864	273	213
21	653	372	783	400	1500	502	459	648	422	507	259	264
22	614	374	1180	410	3500	493	451	592	405	397	265	381
23	585	381	860	420	1780	503	469	571	401	363	422	433
24	568	383	750	425	1300	509	507	570	1090	335	317	288
25	572	385	1050	420	1070	512	507	763	1130	456	326	274
26	584	389	1300	415	825	506	502	646	626	593	295	274
27	588	380	2820	415	739	524	580	603	815	402	272	265
28	571	372	3210	410	676	532	644	818	784	344	260	249
29	554	366	2670	410	---	532	624	618	608	328	253	281
30	541	370	1130	410	---	517	662	567	503	340	248	336
31	539	---	830	410	---	548	---	1090	---	402	252	---
TOTAL	19136	13758	27619	13388	19585	19216	16171	20209	17515	12908	9371	7580
MEAN	617	459	891	432	699	620	539	652	584	416	302	253
MAX	1270	779	3210	490	3500	1390	704	1090	1130	864	461	433
MIN	356	366	233	400	400	493	447	543	401	319	248	202
CFSM	.47	.35	.67	.33	.53	.47	.41	.49	.44	.31	.23	.19
IN.	.54	.39	.77	.38	.55	.54	.45	.57	.49	.36	.26	.21
AC-FT	37960	27290	54780	26560	38850	38110	32080	40080	34740	25600	18590	15030

CAL YR 1984	TOTAL	457794	MEAN	1251	MAX	19000	MIN	233	CFSM	.94	IN.	12.84	AC-FT	908000
WTR YR 1985	TOTAL	196456	MEAN	538	MAX	3500	MIN	202	CFSM	.41	IN.	5.51	AC-FT	389700

06809210 EAST NISHNABOTNA RIVER NEAR ATLANTIC, IA

LOCATION.--Lat 41°20'46", long 95°04'36", in NW1/4 NW1/4 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, 69.1 mi upstream from confluence with West Nishnabotna River, and at mile 84.6 above mouth of Nishnabotna River.

DRAINAGE AREA.--436 mi².

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,105.83 ft above NGVD. Prior to Oct. 1, 1970, at site 2.2 mi upstream at datum 5.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 6 to Dec. 15, Dec. 19-27, Jan. 1 to Feb. 20, Feb. 24 and June 1-6, 10-15, 18, 19, 21, and 22. Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--25 years, 217 ft³/s, 6.76 in/yr, 157,200 acre-ft/yr; median of yearly mean discharges, 230 ft³/s, 7.2 in/yr, 167,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s Sept. 12, 1972, gage height, 22.81 ft; minimum daily, 2.5 ft³/s July 10, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 2, 1958 (corrected) reached a stage of 22.49 ft, from floodmark, discharge, 34,200 ft ³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	1645	*5,400	*10.93	No other peak greater than base discharge.			

Minimum discharge, 28 ft³/s Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	519	119	100	72	150	114	232	153	110	71	47
2	79	278	117	120	70	136	122	196	136	103	62	43
3	76	207	79	140	68	144	241	173	117	99	55	40
4	82	183	70	120	68	558	241	153	117	86	55	39
5	119	153	76	105	70	271	201	144	117	81	57	41
6	127	150	80	100	72	169	173	163	107	77	55	54
7	146	145	88	100	74	153	141	138	112	74	47	45
8	130	142	100	98	74	138	122	125	106	69	42	34
9	137	142	145	86	74	112	114	117	93	71	42	30
10	136	145	170	84	74	102	114	114	87	67	60	30
11	121	150	100	84	74	104	114	138	102	60	44	32
12	118	142	86	88	74	107	119	153	104	60	44	34
13	108	139	100	92	74	99	144	130	96	60	47	53
14	111	135	150	94	74	102	127	161	93	67	82	48
15	498	132	200	94	75	96	117	136	90	64	65	38
16	475	129	561	94	76	90	107	118	212	55	56	36
17	360	125	438	90	78	90	99	112	107	53	80	37
18	249	122	179	88	130	90	87	102	64	51	64	35
19	218	122	165	84	300	93	85	107	58	262	58	33
20	171	120	165	80	970	87	99	131	80	311	53	35
21	152	119	300	77	2820	85	99	102	60	114	65	50
22	137	120	250	76	1180	87	127	85	100	93	106	54
23	127	122	180	78	473	87	127	76	1120	82	64	77
24	121	123	140	80	400	109	138	238	312	82	107	71
25	121	125	150	80	278	114	133	230	196	127	65	67
26	119	128	300	80	260	102	173	145	175	82	57	64
27	113	128	600	76	150	96	179	145	322	64	55	55
28	129	128	1410	74	160	107	163	128	183	55	53	51
29	112	124	446	74	---	107	153	112	139	53	53	102
30	105	120	254	74	---	100	190	124	120	85	51	160
31	105	---	196	72	---	96	---	201	---	96	54	---
TOTAL	4880	4617	7414	2782	8362	3981	4163	4429	4878	2813	1869	1535
MEAN	157	154	239	89.7	299	128	139	143	163	90.7	60.3	51.2
MAX	498	519	1410	140	2820	558	241	238	1120	311	107	160
MIN	76	119	70	72	68	85	85	76	58	51	42	30
CFSM	.36	.35	.55	.21	.69	.29	.32	.33	.37	.21	.14	.12
IN.	.42	.39	.63	.24	.71	.34	.36	.38	.42	.24	.16	.13
AC-FT	9680	9160	14710	5520	16590	7900	8260	8780	9680	5580	3710	3040

CAL YR 1984	TOTAL	151859	MEAN	415	MAX	5700	MIN	50	CFSM	.95	IN.	12.96	AC-FT	301200
WTR YR 1985	TOTAL	51723	MEAN	142	MAX	2820	MIN	30	CFSM	.33	IN.	4.41	AC-FT	102600

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IA

LOCATION.--Lat 41°00'31", long 95°14'29", in NW1/4 SE1/4 sec.29, T.72 N., R.38 W., Montgomery County, Hydrologic Unit 10240003, on left bank on downstream side of Coolbaugh Street bridge in Red Oak, and 0.2 mi upstream from Red Oak Creek, 38.0 mi upstream from confluence with West Nishnabotna River, and at mile 53.6 upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--894 mi².

PERIOD OF RECORD.--May 1918 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. 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--Estimated daily discharges: Dec. 4-27, Dec. 31 to Feb. 21, Feb. 24, Aug. 18-28 and Sept. 6-10, 23, 28-30. Records good except those for estimated daily discharges, which are poor. U.S. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--55 years (water years 1919-24, 1937-85), 386 ft³/s, 5.86 in/yr, 279,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s Sept. 13, 1972, gage height, 27.43 ft; maximum gage height, 28.23 ft June 13, 1947, present datum; minimum daily discharge, 6 ft³/s Aug. 18, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	2200	*7,890	*14.55	No other peak greater than base discharge.			

Minimum daily discharge, 88 ft³/s Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	405	231	300	200	356	249	422	321	267	225	122
2	127	891	227	400	200	338	251	426	264	252	192	108
3	128	426	196	370	200	525	328	366	275	239	182	106
4	126	373	135	340	200	1480	434	334	240	228	175	103
5	146	335	150	320	210	793	399	321	239	223	178	101
6	198	302	165	300	210	395	355	307	237	212	179	120
7	258	290	185	290	210	376	324	328	224	202	155	101
8	247	288	200	280	220	352	298	304	212	199	145	97
9	198	281	240	270	220	311	278	290	201	196	137	97
10	257	279	320	250	230	294	273	278	189	192	142	97
11	203	299	250	250	230	297	267	293	191	186	149	103
12	180	282	175	250	230	301	265	313	200	174	131	96
13	172	269	140	250	230	291	285	325	199	176	124	103
14	163	270	120	250	230	291	296	325	194	178	132	117
15	316	268	110	250	240	276	274	334	195	184	154	108
16	1210	253	130	240	240	261	265	298	196	171	144	97
17	669	244	900	240	250	253	252	278	703	162	150	94
18	492	249	440	220	300	243	243	271	393	157	180	91
19	382	249	360	220	350	243	236	264	216	458	147	88
20	347	238	370	220	500	239	239	299	195	799	126	89
21	300	230	400	220	2500	233	257	305	180	336	123	109
22	277	236	820	220	3690	232	251	267	169	239	165	109
23	261	244	400	220	1220	233	289	254	167	214	221	153
24	249	242	330	210	900	254	298	254	2260	203	185	171
25	248	241	300	210	706	247	291	452	884	283	160	148
26	251	244	310	210	523	231	301	345	422	401	145	136
27	254	254	500	210	422	236	337	313	705	222	135	130
28	246	252	3550	210	346	244	328	317	552	194	120	130
29	261	242	1740	210	---	239	309	287	344	185	115	219
30	235	240	790	210	---	229	317	271	293	193	113	310
31	229	---	400	210	---	245	---	298	---	247	117	---
TOTAL	8761	8916	14584	7850	15207	10538	8789	9739	11060	7572	4746	3653
MEAN	283	297	470	253	543	340	293	314	369	244	153	122
MAX	1210	891	3550	400	3690	1480	434	452	2260	799	225	310
MIN	126	230	110	210	200	229	236	254	167	157	113	88
CFSM	.32	.33	.53	.28	.61	.38	.33	.35	.41	.27	.17	.14
IN.	.36	.37	.61	.33	.63	.44	.37	.41	.46	.32	.20	.15
AC-FT	17380	17680	28930	15570	30160	20900	17430	19320	21940	15020	9410	7250

CAL YR 1984	TOTAL	323309	MEAN	883	MAX	12200	MIN	110	CFSM	.99	IN.	13.45	AC-FT	641300
WTR YR 1985	TOTAL	111415	MEAN	305	MAX	3690	MIN	88	CFSM	.34	IN.	4.64	AC-FT	221000

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA
(National stream-quality accounting network station)

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 at mile 13.8.

DRAINAGE AREA.--2,806 mi².

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. See WSP 1730 for history of changes prior Nov. 16, 1950.

REMARKS.--Estimated daily discharges: Dec. 5-26,Jan. 1 to Feb. 22, April 3-6, Apr. 11 to May 2, May 8-21 and Sept. 13. Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain-gage and gage-height satellite data collection platform at station.

AVERAGE DISCHARGE--58 years (water years 1923, 1929-85), 1,082 ft³/s, 5.24 in/yr, 783,900 acre-ft/yr; median of yearly mean discharges, 940 ft³/s, 4.6 in/yr, 681,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,500 ft³/s June 24, 1947, gage height, 26.03 ft, from flood-mark, present site and datum; maximum gage height, 27.46 ft Mar. 7, 1979 (back-water from ice); minimum daily discharge, 4.5 ft³/s Aug. 30, 1934. Flood 72' Peak 27.42 Q25,200

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	----	*12,300	a*21.90	No other peak greater than base discharge.			

(a) Ice jam
Minimum daily discharge, 258 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	528	1090	772	1000	680	1310	905	1200	1290	933	763	331
2	524	1310	748	800	680	1290	905	1300	1000	889	705	328
3	519	1430	701	800	680	1270	950	1080	918	846	667	317
4	515	1130	638	820	680	2130	1100	1100	921	814	662	305
5	542	1050	590	830	680	2390	1200	1090	893	778	620	297
6	716	986	560	840	680	2050	1200	1090	887	755	1050	286
7	920	935	540	830	680	1420	1100	1080	871	728	750	303
8	1000	906	570	780	680	1260	1080	990	851	698	580	362
9	805	907	600	750	680	1190	1040	900	819	684	539	308
10	864	906	630	720	680	1130	1000	900	791	666	535	284
11	903	1020	600	730	680	1090	980	900	789	647	533	268
12	749	1070	560	720	680	1100	970	1000	793	633	516	258
13	665	972	520	740	680	1080	960	1020	820	630	487	340
14	662	936	500	770	680	1030	950	1100	812	625	472	361
15	904	908	500	800	680	1020	930	1200	798	619	477	368
16	1770	881	1210	810	690	978	910	1200	988	616	489	328
17	2230	853	3320	800	690	950	890	1180	990	584	543	308
18	1860	851	2730	790	700	931	865	1050	1190	560	605	292
19	1510	854	1900	780	780	907	830	960	963	869	560	271
20	1280	836	980	750	880	875	840	1000	790	1450	480	265
21	1180	817	1500	730	2500	836	850	1110	736	1490	438	354
22	1090	816	2100	720	7000	825	850	1040	709	926	419	391
23	981	821	1900	720	4030	833	860	953	690	743	598	731
24	914	840	1600	720	4100	844	860	928	879	695	701	560
25	896	830	1200	700	2600	855	880	994	3070	982	503	461
26	913	827	1300	700	1880	864	890	1210	1450	1030	542	424
27	901	810	1570	690	1570	855	1000	1050	1510	1000	444	407
28	887	798	4220	680	1410	855	1100	1110	1500	701	404	381
29	849	784	4920	680	---	855	1000	1100	1330	634	377	416
30	830	776	2410	680	---	855	980	971	1030	651	361	576
31	811	---	1650	680	---	875	---	1100	---	705	337	---
TOTAL	29718	27950	43539	23560	39030	34753	28875	32906	31078	24581	17157	10881
MEAN	959	932	1404	760	1394	1121	963	1061	1036	793	553	363
MAX	2230	1430	4920	1000	7000	2390	1200	1300	3070	1490	1050	731
MIN	515	776	500	680	680	825	830	900	690	560	337	258
CFSM	.34	.33	.50	.27	.50	.40	.34	.38	.37	.28	.20	.13
IN.	.39	.37	.58	.31	.52	.46	.38	.44	.41	.33	.23	.14
AC-FT	58950	55440	86360	46730	77420	68930	57270	65270	61640	48760	34030	21580

CAL YR 1984	TOTAL	974606	MEAN	2663	MAX	22800	MIN	400	CFSM	.95	IN.	12.92	AC-FT	1933000
WTR YR 1985	TOTAL	344028	MEAN	943	MAX	7000	MIN	258	CFSM	.34	IN.	4.56	AC-FT	682400

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1979 to September 1981.
WATER TEMPERATURES: April 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 815 microsiemens Sept. 16,18, 19, 28,30, 1979; minimum daily, 155 microsiemens, July 20, 1981.
WATER TEMPERATURES: Maximum daily, 32.0°C July 14, 1980; minimum daily 0.0°C, on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 1984												
14...	11:30	982	552	8.2	9.0	66	10.6	97	725	5400	1000	53
FEB 1985												
19...	14:00	772	530	8.3	0.0	24	10.5	75	734	2500	3700	40
MAY												
08...	11:45	1240	545	7.6	23.0	240	8.0	96	740	5600	3100	46
AUG												
23...	14:15	543	542	8.7	24.5	35	10.8	134	738	400	310	39

DATE	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 1984												
14...	270	73	22	11	8	0.3	3.3	220	36	15	0.4	17
FEB 1985												
19...	260	68	21	12	9	0.3	3.0	217	--	--	0.3	16
MAY												
08...	280	74	22	10	7	0.3	3.2	230	37	13	0.5	14
AUG												
23...	290	77	24	14	9	0.4	3.3	253	43	15	0.4	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
NOV 1984												
14...	328	310	0.45	870	5.80	0.04	0.05	1.5	0.14	--	0.15	0.42
FEB 1985												
19...	--	--	--	--	5.20	0.36	0.46	1.1	0.15	--	0.19	0.29
MAY												
08...	360	310	0.49	1210	6.00	0.11	0.14	2.1	0.24	--	0.33	0.62
AUG												
23...	334	340	0.45	490	2.00	0.02	0.03	1.1	0.03	1.3	0.09	0.41

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
NOV 1984												
14...	255	676	95	2	10	130	2	<1	<1	<3	3	11
FEB 1985												
19...	105	219	99	<1	30	170	0.6	--	--	<3	5	12
MAY												
08...	963	3220	99	3	90	140	2	2	2	<3	7	470
AUG												
23...	170	249	97	4	10	190	<0.5	<1	<1	<3	4	5

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
NOV 1984											
14...	<1	14	23	<0.1	<10	2	3	<1	250	<6	27
FEB 1985											
19...	1	13	79	<0.1	10	9	4	<1	230	<6	11
MAY											
08...	--	16	12	<0.1	<10	3	4	<1	240	<6	30
AUG											
23...	<1	14	14	0.1	<10	<1	3	<1	270	<6	8

06811840 TARKIO RIVER AT STANTON, IA

LOCATION.--Lat 40°58'52", long 95°06'32", in NW1/4 SW1/4 sec.4, T.71 N., R.37 W., Montgomery County, Hydrologic Unit 10240005, on right bank 10 ft downstream from bridge on county highway H42, 0.1 mi downstream from Little Tarkio Creek, and 0.5 mi west of Stanton.

DRAINAGE AREA.--49.3 mi².

PERIOD OF RECORD.--October 1957 to current year. Annual maximum, water years 1952-57.

REVISED RECORDS.--WSP 1919: 1960 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,104.67 ft above NGVD.

REMARKS.--Estimated daily discharges: Dec. 4-14, 19-26, Dec. 29 to Feb. 22. and July 16-18. Records fair except those for estimated discharges, which are poor.

AVERAGE DISCHARGE.--28 years, 28.2 ft³/s, 7.77 in/yr, 20,430 acre-ft/yr; median of yearly mean discharge, 25 ft³/s, 6.9 in/yr, 18,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s June 9, 1967, gage height, 28.56 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,500 ft³/s, and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 3	1400	*765	*11.82				

Minimum daily discharge, no flow Oct. 1, 2, July 3-18, 22, 23, 28, 29, Aug. 3 and Sept. 7, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	51	5.8	5.0	2.5	15	9.5	5.6	3.5	.58	.66	1.1
2	.00	7.1	5.8	5.0	2.5	14	14	5.2	3.5	.14	.05	.71
3	.10	6.5	5.3	5.0	2.5	231	17	4.9	3.4	.00	.00	.32
4	.42	6.2	4.5	5.2	2.5	52	11	4.8	3.5	.00	.17	.22
5	1.4	5.8	5.0	5.4	3.0	14	9.8	4.7	3.6	.00	.38	.17
6	3.3	5.8	4.5	5.5	3.0	12	8.2	4.5	3.4	.00	4.3	.02
7	3.2	5.8	4.2	5.5	3.0	9.6	7.5	4.4	3.3	.00	.96	.00
8	3.0	5.7	4.5	5.2	3.1	8.2	7.0	4.3	3.2	.00	.10	.01
9	3.2	6.3	5.0	5.0	3.3	7.8	6.7	4.2	3.1	.00	.28	.01
10	4.2	6.0	6.0	4.5	3.5	8.1	6.7	4.2	2.9	.00	.99	.00
11	2.9	6.1	5.8	4.5	3.5	8.7	6.5	4.2	3.3	.00	.68	.01
12	2.6	5.8	5.6	4.5	3.5	7.9	6.1	3.9	3.2	.00	.54	.03
13	2.7	5.8	5.0	4.5	3.5	8.6	6.6	4.0	3.0	.00	.76	.54
14	2.8	5.4	5.0	4.5	3.5	8.4	5.9	4.4	2.9	.00	1.8	.60
15	23	5.3	6.8	4.5	3.5	8.0	5.8	4.1	3.1	.00	3.2	.34
16	22	5.8	47	4.5	3.6	7.7	5.6	4.0	2.9	.00	1.5	.30
17	10	6.0	11	4.5	4.0	7.5	5.3	3.9	2.5	.00	3.1	.28
18	7.2	5.8	8.4	4.5	4.5	7.5	5.2	3.9	1.7	.00	2.9	.34
19	6.3	5.6	6.0	4.0	6.0	7.4	5.0	3.8	1.6	3.2	1.4	.39
20	5.4	5.7	5.0	3.5	15	7.2	5.9	4.5	1.5	1.7	.99	.56
21	5.4	5.6	7.0	3.0	100	7.0	5.1	3.9	1.2	.04	.90	.95
22	5.2	5.9	6.0	3.0	30	7.1	5.4	3.9	.89	.00	1.7	1.3
23	5.3	6.0	5.5	3.0	75	7.6	5.5	3.9	1.4	.00	1.9	1.7
24	5.3	6.0	5.2	3.0	42	7.3	5.2	3.9	4.5	.01	1.4	1.6
25	5.6	5.8	5.0	3.0	17	7.2	5.1	3.9	3.3	.61	1.1	1.5
26	6.0	5.9	7.0	2.7	12	7.1	5.2	3.9	2.8	.27	1.1	1.1
27	5.8	5.9	26	2.7	10	7.7	5.2	4.1	4.2	.02	.85	1.2
28	5.7	5.9	24	2.7	11	7.4	4.9	3.9	3.9	.00	.73	1.3
29	5.4	6.0	8.0	2.7	---	7.2	4.8	3.9	2.5	.00	.95	2.4
30	5.4	5.9	6.0	2.6	---	7.8	5.7	3.8	1.3	.46	.88	3.3
31	5.9	---	4.5	2.5	---	10	---	3.7	---	1.0	.90	---
TOTAL	164.72	222.4	260.4	125.7	376.5	534.0	207.4	130.3	85.09	8.03	37.17	22.30
MEAN	5.31	7.41	8.40	4.05	13.4	17.2	6.91	4.20	2.84	.26	1.20	.74
MAX	23	51	47	5.5	100	231	17	5.6	4.5	3.2	4.3	3.3
MIN	.00	5.3	4.2	2.5	2.5	7.0	4.8	3.7	.89	.00	.00	.00
CFSM	.11	.15	.17	.08	.27	.35	.14	.09	.06	.01	.02	.02
IN.	.12	.17	.20	.09	.28	.40	.16	.10	.06	.01	.03	.02
AC-FT	327	441	517	249	747	1060	411	258	169	16	74	44

CAL YR 1984	TOTAL	18252.17	MEAN	49.9	MAX	814	MIN	.00	CFSM	1.01	IN.	13.77	AC-FT	36200
WTR YR 1985	TOTAL	2174.01	MEAN	5.96	MAX	231	MIN	.00	CFSM	.12	IN.	1.64	AC-FT	4310

06813500 MISSOURI RIVER AT RULO, NE

LOCATION.--Lat 40°03'13", long 95°25'19", in NW1/4 NW1/4 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 at mile 498.0.

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

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

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

REMARKS.--Estimated daily discharges: Dec. 26 to Jan. 31. Records good except those for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers gage-height satellite data collection platform at station.

AVERAGE DISCHARGE.--36 years, 41,100 ft³/s, 29,780,000 acre-ft/yr.

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

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88,800 ft³/s April 25, gage height, 16.76 ft; minimum daily, 24,500 ft³/s Jan. 23; minimum gage height not determined, occurred during period of no gage-height record Jan. 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53900	66200	64000	36000	32000	44800	47000	59800	50800	48900	38200	44600
2	53300	65600	63700	32000	31600	50500	46500	58800	50200	46400	38000	39800
3	53800	64600	63200	29000	30100	51700	46300	62000	50300	45100	39100	37700
4	53600	63900	59800	31500	29700	49100	46600	61000	50800	44400	42300	38800
5	52800	62600	55200	31000	30400	55200	47200	55500	51000	43100	41200	38800
6	53700	61600	49700	32500	30100	59000	48400	52600	49700	41600	43700	39100
7	55300	61400	46500	33500	29600	45400	49000	52000	48000	40300	43100	39400
8	55600	61700	44200	34000	29300	43100	48900	49400	46300	39400	40900	39100
9	57500	61300	42600	34500	29200	42000	48900	47900	47400	38400	40200	40400
10	58000	62600	41300	35000	29100	40700	48700	48100	47900	38100	42200	41200
11	58900	64800	40600	33000	29400	42800	47400	47500	47000	37700	42300	40700
12	57700	65400	41300	31000	29500	43900	45700	48800	46300	37600	40400	39400
13	57700	64900	42300	28500	29500	44700	46900	49900	46500	37700	39400	40500
14	56600	63600	41200	28000	29100	45900	46100	53600	45000	37900	40800	47900
15	57000	62700	38400	28600	29900	47100	45500	61300	44200	38100	44300	46700
16	60700	63900	41400	29700	30200	47000	44600	77700	43900	37500	40900	52200
17	64300	64500	61400	28500	30500	47400	43700	76200	48900	37300	39400	45100
18	65200	64100	54400	29200	30900	48300	43000	65300	46500	37200	41500	43800
19	64900	62700	45600	30800	32100	47700	42900	61200	45100	39300	42300	44000
20	65400	61800	43000	30500	33400	48400	44000	60700	43700	61300	42100	43000
21	67000	61700	41700	28500	36500	48000	44200	63000	42800	51900	39700	42500
22	65700	61700	41800	26000	52700	47900	44900	61400	42400	46400	39100	43800
23	66000	62000	41000	24500	47300	48000	50600	56500	42100	43000	39100	45200
24	65400	61200	38400	29000	44000	47600	66800	54600	45100	41000	40000	45300
25	64400	61100	36400	31500	40900	46800	85600	52000	50400	42500	40100	42900
26	65300	61900	34700	34900	41300	46400	75700	51500	45700	41600	39000	42000
27	64600	61700	33000	35200	42000	46800	67100	52700	45600	39700	38500	41900
28	64700	63100	43000	33000	42700	47700	76100	52300	46900	38300	38700	41200
29	65200	64100	52000	31500	---	47200	77900	50400	52300	37000	38000	42300
30	65000	64400	46000	32500	---	47000	65300	50400	53300	37500	37600	48100
31	65000	---	41000	33000	---	46700	---	50500	---	38600	39400	---
TOTAL	1874200	1892800	1428800	966400	953000	1464800	1581500	1744600	1416100	1284800	1251500	1277400
MEAN	60460	63090	46090	31170	34040	47250	52720	56280	47200	41450	40370	42580
MAX	67000	66200	64000	36000	52700	59000	85600	77700	53300	61300	44300	52200
MIN	52800	61100	33000	24500	29100	40700	42900	47500	42100	37000	37600	37700
AC-FT	3717000	3754000	2834000	1917000	1890000	2905000	3137000	3460000	2809000	2548000	2482000	2534000

CAL YR 1984 TOTAL 25226900 MEAN 68930 MAX 216000 MIN 29800 AC-FT50038000
WTR YR 1985 TOTAL 17135900 MEAN 46950 MAX 85600 MIN 24500 AC-FT33989000

06817000 NODAWAY RIVER AT CLARINDA, IA

LOCATION.--Lat 40°44'19", long 95°00'47", in SW1/4 NE1/4 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, and 7.5 mi upstream from East Nodaway River.

DRAINAGE AREA.--762 mi².

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--May 1918 to July 1925, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

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 960.36 ft above NVGD. Prior to July 5, 1925, and May 28, 1936, to Mar. 26, 1957 nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 5-15, 18-26, and Jan. 1 to Feb. 21. Records good except those for winter period, which are poor. Clarinda municipal water supply is taken from Nodaway River, 500 ft above station. Average daily pumpage was 1.40 ft³/s. U.S. National Weather Service gage-height telemeter at station.

COOPERATION.--Average pumpage furnished by City of Clarinda water works.

AVERAGE DISCHARGE.--55 years (1918-24, 1936-85), 342 ft³/s, 6.09 in/yr, 247,800 acre-ft/yr; median of yearly mean discharges, 260 ft³, 4.6 in/yr, 188,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,100 ft³/S June 13, 1947, gage-height, 25.3 ft, from floodmark, from rating curve extended above 15,000 ft³/s on basis of an overflow profile and extended channel rating; minimum daily, 1.0 ft³/s Sept. 5, 9, 12, 1918, Dec. 9 27-31 1923. 27-31, 1923.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1903 reached a stage of 25.4 ft, from floodmarks, discharge not determined.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	2030	*7,170	*8.62

No other peak greater than base discharge.

Minimum discharge, 16 ft³/s July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	669	83	80	86	290	193	216	68	73	63	34
2	43	647	81	90	86	291	200	237	63	68	54	30
3	41	203	68	100	86	881	245	169	62	66	50	27
4	42	156	59	100	86	3010	332	140	62	59	50	26
5	53	133	70	100	86	758	262	126	56	57	44	28
6	71	117	78	105	90	372	236	123	52	52	592	28
7	66	108	82	105	90	343	208	120	52	48	122	26
8	70	100	78	105	90	305	183	110	50	40	71	25
9	63	100	74	100	95	265	167	97	44	41	60	24
10	66	107	80	95	100	249	166	93	41	35	63	24
11	54	118	95	90	105	251	167	98	38	35	54	24
12	49	110	105	85	110	251	162	102	34	33	54	24
13	51	103	70	90	115	242	179	113	33	33	48	34
14	54	101	54	92	120	244	195	125	33	40	63	44
15	101	95	105	95	120	235	173	125	33	34	98	34
16	180	89	290	95	120	220	161	107	33	27	57	27
17	203	83	661	95	130	214	149	94	55	25	71	25
18	175	87	130	95	140	203	132	88	160	20	86	24
19	131	89	92	95	200	199	121	82	71	63	59	24
20	115	86	92	95	400	194	121	105	44	432	43	30
21	98	84	120	90	4400	189	131	108	35	201	37	37
22	79	85	150	85	2900	185	131	100	29	96	65	53
23	70	90	140	90	1380	188	140	83	29	70	101	130
24	65	90	120	90	2860	192	136	80	328	70	96	197
25	67	90	110	90	891	191	134	81	370	252	62	131
26	71	89	160	88	587	181	129	89	145	156	58	87
27	72	84	590	88	354	180	135	80	186	73	51	61
28	71	81	1720	88	274	183	134	81	174	52	46	51
29	69	81	603	87	---	182	116	81	103	42	42	91
30	65	81	282	86	---	174	126	74	82	50	38	232
31	65	---	156	86	---	187	---	68	---	62	38	---
TOTAL	2461	4156	6598	2875	16101	11049	5064	3395	2565	2405	2436	1632
MEAN	79.4	139	213	92.7	575	356	169	110	85.5	77.6	78.6	54.4
MAX	203	669	1720	105	4400	3010	332	237	370	432	592	232
MIN	41	81	54	80	86	174	116	68	29	20	37	24
CFSM	.10	.18	.28	.12	.75	.47	.22	.14	.11	.10	.10	.07
IN.	.12	.20	.32	.14	.79	.54	.25	.17	.13	.12	.12	.08
AC-FT	4880	8240	13090	5700	31940	21920	10040	6730	5090	4770	4830	3240

CAL YR 1984	TOTAL	259149	MEAN	708	MAX	8970	MIN	39	CFSM	.93	IN.	12.65	AC-FT	514000
WTR YR 1985	TOTAL	60737	MEAN	166	MAX	4400	MIN	20	CFSM	.22	IN.	2.97	AC-FT	120500

06817000 NODAWAY RIVER AT CLARINDA, IA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to September 1978, October 1979 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1975 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis. Suspended-sediment samples at normal flows and winter period are collected below dam 300 ft upstream from gage. Samples at higher stages are collected from bridge at gage. Random water temperatures are on file for the 1979 water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 600 microsiemens Aug. 22, 1982; minimum daily, 130 microsiemens June 15, 1976.
WATER TEMPERATURES: Maximum daily, 30.5°C Aug. 23, 1978; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 23,800 mg/L Apr. 17, 1978; minimum daily mean, 5 mg/L Dec. 14, 1977, Feb. 24, 1978.
SEDIMENT LOADS: Maximum daily, 1,500,000 tons June 16, 1982; minimum daily, 0.23 ton Dec. 14, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 530 microsiemens Dec. 7, 8; minimum daily, 180 microsiemens June 25,
SEDIMENT CONCENTRATIONS: Maximum daily mean, 12,300 mg/L Mar. 4; minimum daily mean, 6 mg/L Nov. 18, Dec. 9, Feb. 14-16.
SEDIMENT LOADS: Maximum daily, 105,000 tons Mar. 4; minimum daily, 1.2 ton Dec.9.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C.), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
RANDOM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	300	430	350	---	330	380	360	420	390	380	360
2	400	280	430	370	---	320	380	360	410	410	390	350
3	---	280	440	430	460	320	380	365	410	410	390	340
4	380	320	460	430	430	260	360	400	410	360	380	330
5	380	360	460	360	400	250	350	---	400	380	380	330
6	360	400	460	360	440	280	360	400	410	390	310	310
7	380	410	530	370	440	320	360	405	410	380	220	300
8	400	410	530	380	440	330	380	400	420	380	300	300
9	400	400	450	380	420	340	380	410	420	400	350	300
10	400	400	430	400	430	360	400	420	420	390	360	340
11	400	400	410	400	420	360	385	400	410	400	360	360
12	410	410	400	400	420	360	385	415	400	380	380	350
13	400	400	410	420	430	370	360	405	400	380	380	340
14	410	420	420	430	440	370	370	380	400	380	360	360
15	380	420	420	420	420	380	380	390	380	370	300	370
16	365	420	360	430	420	380	380	400	380	370	340	340
17	360	420	330	420	430	390	380	400	360	340	340	370
18	370	420	---	420	380	390	390	410	220	340	350	340
19	380	430	---	410	330	390	390	410	300	280	360	350
20	400	425	340	420	280	400	390	380	340	260	390	380
21	420	425	360	460	220	---	380	385	360	240	380	380
22	430	420	380	440	210	400	380	400	400	300	380	390
23	410	420	320	400	220	390	380	400	400	340	310	320
24	410	420	300	430	240	390	380	405	360	360	310	300
25	410	420	350	410	240	400	385	410	180	310	350	280
26	410	420	360	440	270	400	380	410	240	260	370	350
27	450	420	320	420	280	400	380	400	280	320	380	370
28	450	420	350	360	300	390	380	400	240	370	370	400
29	430	420	210	430	---	390	380	410	310	400	360	370
30	440	420	270	430	---	390	380	410	320	380	360	340
31	440	---	300	440	---	380	---	410	---	360	360	---

06817000 NODAWAY RIVER AT CLARINDA, IA--Continued

WATER-QUALITY RECORDS
SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14	1.5	2920	6630	12	2.7	101	22	16	3.7	650	509
2	16	1.9	3180	6440	15	3.3	31	7.5	20	4.6	475	373
3	16	1.8	850	466	10	1.8	80	22	10	2.3	2390	5690
4	19	2.2	265	112	11	1.8	124	33	16	3.7	12300	105000
5	33	4.7	145	52	12	2.3	160	43	10	2.3	5000	12200
6	19	3.6	97	31	13	2.7	129	37	8	1.9	1610	1620
7	21	3.7	92	27	11	2.4	108	31	10	2.4	1000	926
8	27	5.1	89	24	7	1.5	91	26	8	1.9	620	511
9	32	5.4	86	23	6	1.2	79	21	10	2.6	389	278
10	34	6.1	89	26	10	2.2	53	14	9	2.4	317	213
11	26	3.8	103	33	21	5.4	45	11	9	2.6	315	213
12	26	3.4	79	23	32	9.1	27	6.2	9	2.7	314	213
13	25	3.4	69	19	16	3.0	24	5.8	7	2.2	262	171
14	23	3.4	76	21	9	1.3	24	6.0	6	1.9	246	162
15	195	53	64	16	35	9.9	23	5.9	6	1.9	230	146
16	246	120	40	9.6	673	772	21	5.4	6	1.9	200	119
17	288	158	21	4.7	2140	4020	18	4.6	13	4.6	174	101
18	221	104	6	1.4	500	175	18	4.6	49	19	160	88
19	146	52	24	5.8	114	28	21	5.4	94	51	168	90
20	96	30	33	7.7	90	22	24	6.2	178	192	158	83
21	75	20	29	6.6	105	34	16	3.9	8350	99200	139	71
22	52	11	11	2.5	130	53	19	4.4	6770	63400	118	59
23	43	8.1	24	5.8	211	80	21	5.1	3110	13500	115	58
24	44	7.7	20	4.9	173	56	19	4.6	6350	53200	117	61
25	47	8.5	24	5.8	129	38	25	6.1	2400	5770	106	55
26	49	9.4	29	7.0	154	67	18	4.3	1250	1980	99	48
27	63	12	18	4.1	1130	2990	15	3.6	920	879	92	45
28	28	5.4	14	3.1	3890	18400	14	3.3	675	499	83	41
29	21	3.9	15	3.3	2620	4640	14	3.3	---	---	79	39
30	26	4.6	12	2.6	800	609	12	2.8	---	---	64	30
31	22	3.9	---	---	270	114	11	2.6	---	---	88	44
TOTAL	---	661.5	---	14017.9	---	32148.6	---	361.6	---	238735.6	---	129257

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	82	43	154	90	55	10	192	38	79	13	130	12
2	92	50	237	152	65	11	109	20	75	11	121	9.8
3	230	152	110	50	59	9.9	88	16	78	11	117	8.5
4	975	874	89	34	45	7.5	89	14	75	10	138	9.7
5	525	371	88	30	40	6.0	80	12	78	9.3	140	11
6	282	180	91	30	42	5.9	96	13	3220	8180	120	9.1
7	187	105	121	39	40	5.6	105	14	650	214	128	9.0
8	142	70	88	26	44	5.9	83	9.0	152	29	149	10
9	108	49	63	16	44	5.2	100	11	116	19	158	10
10	101	45	74	19	43	4.8	104	9.8	123	21	128	8.3
11	87	39	62	16	41	4.2	101	9.5	100	15	104	6.7
12	86	38	54	15	32	2.9	102	9.1	83	12	111	7.2
13	109	53	48	15	34	3.0	91	8.1	82	11	71	6.5
14	137	72	64	22	38	3.4	117	13	152	26	56	6.7
15	101	47	50	17	34	3.0	134	12	368	97	38	3.5
16	74	32	52	15	26	2.3	107	7.8	140	22	84	6.1
17	70	28	45	11	864	481	86	5.8	148	28	90	6.1
18	52	19	44	10	5530	2550	95	5.1	152	35	108	7.0
19	50	16	46	10	680	130	445	76	114	18	118	7.6
20	22	7.2	72	20	321	38	2100	2730	102	12	110	8.9
21	38	13	61	18	245	23	747	450	92	9.2	78	7.8
22	23	8.1	56	15	145	11	230	60	248	44	200	29
23	29	11	72	16	108	8.5	115	22	295	80	995	349
24	25	9.2	51	11	2930	6290	190	36	177	46	1460	777
25	25	9.0	45	9.8	4820	5620	1780	1670	110	18	216	76
26	24	8.4	38	9.1	1010	395	1600	860	108	17	84	20
27	36	13	37	8.0	1640	1150	202	40	112	15	75	12
28	40	14	43	9.4	2020	949	101	14	162	20	112	15
29	21	6.6	61	13	690	192	104	12	140	16	161	40
30	38	13	52	10	328	73	96	13	118	12	530	332
31	---	---	43	7.9	---	---	94	16	115	12	---	---
TOTAL	---	2395.5	---	764.2	---	18001.1	---	6226.2	---	9082.5	---	1821.5

TOTAL LOAD FOR YEAR: 453473.2 TONS.

NODAWAY RIVER BASIN

06817000 NODAWAY RIVER AT CLARINDA, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
NOV							
07...	09:50	10.0	105	131	37	--	--
DEC							
19...	13:41	0.0	94	117	30	82	84
FEB							
21...	07:30	--	2930	5500	43500	36	39
22...	14:30	1.0	2390	5610	36200	44	48
MAR							
04...	07:30	--	2720	14900	109000	38	42
14...	09:38	4.0	245	248	164	--	--
APR							
18...	09:40	18.0	130	60	21	--	--
MAY							
29...	11:05	20.0	82	79	17	--	--
JUN							
25...	07:30	--	408	6200	6830	63	73
JUL							
24...	09:00	24.5	57	95	15	--	--
AUG							
06...	13:15	25.0	1290	6480	22600	56	65

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV							
07...	--	--	--	--	--	--	96
DEC							
19...	85	87	94	94	96	100	--
FEB							
21...	41	54	91	96	100	--	--
22...	54	63	93	96	100	--	--
MAR							
04...	48	59	97	99	100	--	--
14...	--	--	--	--	--	--	96
APR							
18...	--	--	--	--	--	--	98
MAY							
29...	--	--	--	--	--	--	85
JUN							
25...	83	91	--	--	--	--	100
JUL							
24...	--	--	--	--	--	--	93
AUG							
06...	76	86	94	95	96	100	--

06817000 NODAWAY RIVER AT CLARINDA, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
NOV							
07...	10:00	105	3	1	1	4	28
DEC							
19...	13:41	94	4	1	1	6	31
JAN							
30...	11:00	86	2	5	10	22	43
MAR							
14...	09:45	245	3	0	1	8	40
APR							
18...	09:53	130	3	0	1	3	14
MAY							
29...	11:16	82	3	1	1	6	31
JUL							
24...	09:08	57	3	1	1	7	42
AUG							
06...	12:29	1290	3	0	1	10	67
13...	15:13	48	3	1	1	10	47
SEP							
19...	10:45	21	3	1	2	17	72

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
NOV						
07...	49	63	72	78	91	100
DEC						
19...	44	53	61	70	88	100
JAN						
30...	61	71	78	85	100	--
MAR						
14...	54	60	66	74	90	100
APR						
18...	26	34	46	64	82	100
MAY						
29...	50	58	65	75	91	100
JUL						
24...	62	69	74	81	91	100
AUG						
06...	89	96	99	100	--	--
13...	67	77	86	92	98	100
SEP						
19...	90	94	97	100	--	--

06818750 PLATTE RIVER NEAR DIAGONAL, IA

LOCATION.--Lat 40°46'02", long 94°24'46", in NE1/4 NW1/4 sec.22, T.69 N., R.31 W., Ringgold County, Hydrologic Unit 10240012, on left bank at downstream side of 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 mi².

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

REVISED RECORDS.--WSP 2119: 1969 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,095.27 ft above NGVD.

REMARKS.--Estimated daily discharges: Oct. 1 to Feb.20, Feb. 26,27, Mar.2 and Mar.4-9. Records good except those for estimated period, which are poor.

AVERAGE DISCHARGE.--17 years, 131 ft³/s, 8.20 in/yr, 94,910 acre-ft/yr; median of yearly mean discharges, 110 ft³/s, 6.9 in/yr, 79,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,420 ft³/s Oct. 12, 1973, gage height, 23.24 ft; minimum daily, 0.21 ft³/s Jan. 14, 15, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1967 reached a stage of 23.16 ft, from floodmark by local resident, discharge, 6,360 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	unknown	*2,720	a*14.88				

(a) from floodmark.
Minimum discharge, 1.8 ft³/s Sept. 16, 17, but may have been less during period of backwater from beaver dam.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	35	3.0	10	3.5	102	38	138	5.2	15	14	3.5
2	2.5	15	3.0	12	3.5	100	53	59	5.1	12	10	3.4
3	2.4	6.0	3.0	15	3.8	311	82	34	4.8	9.1	8.3	3.3
4	2.5	4.0	3.0	13	4.0	230	49	24	4.9	7.8	7.1	3.5
5	2.7	3.5	3.0	12	4.0	170	39	20	4.6	6.5	7.5	3.0
6	2.6	3.3	3.0	10	4.5	120	30	18	4.4	5.8	12	3.2
7	2.5	3.3	3.2	9.5	4.5	90	23	17	4.3	5.3	12	3.3
8	2.3	3.2	3.4	9.0	4.5	66	21	15	4.3	5.1	6.1	3.2
9	2.1	3.2	3.5	8.0	4.5	49	18	13	4.0	4.7	6.4	3.3
10	2.1	3.2	3.5	7.0	5.0	38	16	12	3.9	4.3	27	3.0
11	2.1	3.2	3.5	6.8	5.0	38	18	12	3.9	4.4	27	3.1
12	2.0	3.2	3.7	6.4	5.0	54	19	38	3.9	4.6	14	3.3
13	2.0	3.2	4.0	6.0	5.0	35	20	20	3.6	4.2	10	3.4
14	2.5	3.2	10	6.0	5.0	36	22	23	3.9	4.4	6.7	3.1
15	3.5	3.2	25	6.0	5.5	33	17	20	3.6	4.4	5.3	2.7
16	2.5	3.1	50	6.0	6.0	26	16	14	3.9	3.7	5.9	2.0
17	2.0	3.0	30	6.0	7.0	27	14	12	78	3.5	5.9	2.1
18	2.5	3.0	20	5.5	10	24	12	11	46	3.5	4.7	2.3
19	3.0	3.0	13	5.0	45	24	11	8.9	14	24	5.7	2.5
20	3.2	3.0	9.0	4.5	400	23	11	9.9	8.2	68	4.4	3.3
21	3.5	3.0	8.0	4.5	2400	22	9.9	22	6.7	15	5.1	6.8
22	3.5	3.0	9.0	4.5	763	21	9.8	12	6.2	7.0	42	8.8
23	3.5	3.0	10	4.5	873	21	9.6	8.8	152	5.1	29	95
24	3.5	3.0	8.0	4.0	590	24	9.9	8.3	967	81	11	108
25	3.8	3.0	7.0	4.0	246	20	9.1	10	100	357	6.0	26
26	4.1	3.0	8.0	4.0	170	17	8.1	7.9	51	121	4.9	13
27	4.5	3.0	150	3.8	122	19	11	7.1	291	29	3.8	8.4
28	4.7	3.0	100	3.7	91	25	10	6.7	66	15	3.5	6.2
29	5.0	3.0	60	3.5	---	20	7.9	6.8	30	11	3.4	283
30	5.0	3.0	35	3.5	---	18	33	6.3	20	11	3.6	666
31	15	---	15	3.5	---	23	---	6.4	---	20	3.3	---
TOTAL	105.6	140.8	609.8	207.2	5790.3	1826	647.3	621.1	1904.4	872.4	315.6	1281.7
MEAN	3.41	4.69	19.7	6.68	207	58.9	21.6	20.0	63.5	28.1	10.2	42.7
MAX	15	35	150	15	2400	311	82	138	967	357	42	666
MIN	2.0	3.0	3.0	3.5	3.5	17	7.9	6.3	3.6	3.5	3.3	2.0
CFSM	.02	.02	.09	.03	.95	.27	.10	.09	.29	.13	.05	.20
IN.	.02	.02	.10	.04	.99	.31	.11	.11	.33	.15	.05	.22
AC-FT	209	279	1210	411	11490	3620	1280	1230	3780	1730	626	2540

CAL YR 1984	TOTAL	78144.6	MEAN	214	MAX	5060	MIN	1.4	CFSM	.99	IN.	13.40	AC-FT	155000
WTR YR 1985	TOTAL	14322.2	MEAN	39.2	MAX	2400	MIN	2.0	CFSM	.18	IN.	2.46	AC-FT	28410

06819185 EAST FORK ONE HUNDRED AND TWO RIVER AT BEDFORD, IA

LOCATION.--Lat 40°39'38", long 94°42'59", in NE1/4 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, and 3.0 mi upstream from Daugherty creek.

DRAINAGE AREA.--85.4 mi².

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,069.16 ft above NGVD.

REMARKS.--Estimated daily discharges: Dec. 31 to Mar. 13 and July 3-23. Records good except those for estimated daily discharges, which are poor. Slight regulation at low flow by low dam used for water supply in Bedford. National Weather Service gage-height telemeter at station.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
July 25	0345	*1,160	*15.96				

Minimum discharge, 0.28 ft³/s Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	9.3	.75	.90	.70	43	8.6	54	1.3	2.0	1.9	.66
2	.39	5.4	.75	.90	.70	220	9.5	12	1.2	2.0	1.4	.66
3	.38	5.0	.75	.85	.70	156	11	4.4	1.1	1.9	1.6	.66
4	.39	3.7	.77	.80	.70	8.0	7.1	2.2	1.3	.70	1.3	.67
5	.44	2.1	.78	.75	.70	4.5	4.8	1.6	1.3	.58	1.0	.67
6	.42	1.4	.79	.70	.70	5.7	4.0	1.5	1.4	.60	5.8	.66
7	.38	.88	.80	.70	.70	6.2	5.8	1.4	1.3	.59	1.9	.66
8	.37	.87	.81	.90	.70	8.7	3.4	1.2	1.3	.70	.91	.66
9	.34	.87	.82	.90	.70	10	2.6	1.0	.91	.72	.89	.66
10	.34	.86	.83	.90	.70	9.4	2.4	.94	.95	.59	18	.65
11	.34	.83	.83	.90	.66	8.7	2.5	2.1	.88	.63	1.5	.65
12	.32	.80	.84	.85	.64	6.8	2.5	9.4	1.1	.63	1.4	.65
13	.32	.79	.83	.85	.62	6.2	3.0	6.0	1.1	.70	.89	.66
14	.38	.79	1.2	.80	.60	5.7	3.2	15	1.2	.86	78	.66
15	.56	.79	1.8	.80	.60	4.3	3.1	5.8	1.1	.81	17	.65
16	.37	.78	2.4	.80	.60	4.1	2.5	3.0	1.2	.83	3.6	.65
17	.29	.77	1.2	.80	.70	3.7	2.1	2.1	1.2	.88	2.4	.65
18	.38	.77	.92	.80	1.0	3.7	2.0	1.4	1.1	9.4	1.4	.65
19	.50	.76	1.1	.80	3.0	3.5	1.9	1.1	1.1	94	1.1	.64
20	.53	.76	1.1	.80	25	3.2	1.8	4.3	1.2	11	.82	.65
21	.56	.76	1.5	.80	100	2.9	1.6	1.7	1.2	2.9	.78	.66
22	.57	.75	1.2	.80	200	2.7	2.0	1.3	1.3	2.5	.74	.67
23	.57	.75	1.2	.75	350	3.3	1.8	.92	1.6	1.2	.70	.83
24	.56	.75	1.1	.75	200	3.7	1.8	.88	214	65	.70	3.0
25	.62	.75	1.0	.75	40	3.3	1.7	.88	8.7	557	.68	8.4
26	.68	.75	1.5	.75	29	2.6	2.0	.88	10	50	.66	3.6
27	.71	.76	3.0	.75	27	3.6	2.0	.88	.87	9.3	.66	2.3
28	.77	.76	10	.75	23	4.2	1.9	1.5	6.8	3.1	.66	2.2
29	.81	.76	3.9	.75	---	3.6	1.7	1.4	2.9	1.9	.66	607
30	.83	.75	2.0	.70	---	4.0	35	1.5	1.6	2.7	.66	503
31	2.0	---	1.2	.70	---	8.2	---	1.3	---	2.7	.66	---
TOTAL	16.52	45.76	47.67	24.75	1009.42	563.5	135.3	143.58	272.21	828.42	150.37	1144.78
MEAN	.53	1.53	1.54	.80	36.1	18.2	4.51	4.63	9.07	26.7	4.85	38.2
MAX	2.0	9.3	10	.90	350	220	35	54	214	557	78	607
MIN	.29	.75	.75	.70	.60	2.6	1.6	.88	.87	.58	.66	.64
CFSM	.01	.02	.02	.01	.42	.21	.05	.05	.11	.31	.06	.45
IN.	.01	.02	.02	.01	.44	.25	.06	.06	.12	.36	.07	.50
AC-FT	33	91	95	49	2000	1120	268	285	540	1640	298	2270

CAL YR 1984	TOTAL	29710.50	MEAN	81.2	MAX	2370	MIN	.29	CFSM	.95	IN.	12.94	AC-FT	58930
WTR YR 1985	TOTAL	4382.28	MEAN	12.0	MAX	607	MIN	.29	CFSM	.14	IN.	1.91	AC-FT	8690

06897950 ELK CREEK NEAR DECATUR CITY, IA
(Hydrologic bench-mark station)

LOCATION.--Lat 40°43'18", long 93°56'12", near SE corner sec.34, T.69 N., R.27 W., Decatur County, Hydrologic Unit 10280102, at right downstream corner of bridge on county highway, 1,000 ft downstream from West Elk Creek, 5.2 mi upstream from mouth, and 5.7 mi southwest of Decatur City.

DRAINAGE AREA.--52.5 mi².

WATER DISCHARGE RECORDS

PERIOD OF RECORD--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 924.70 ft above NGVD. Oct. 1, 1967, to Sept. 30, 1974, at datum 10.00 ft higher.

REMARKS.--Estimated daily discharges during water year: Oct. 1-6, 21-30, Nov. 2, 3, 5-21, Dec. 6 to April 1, May 29 to June 20, July 2-13 and Aug. 6, 18. Records fair except those for periods of estimated discharge, which are poor.

AVERAGE DISCHARGE.--18 years, 29.9 ft³/s, 7.73 in/yr, 21,660 acre-ft/yr; median of yearly mean discharges, 25 ft³/s, 6.5 in/yr, 18,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s June 2, 1980, gage height, 28.22 ft, from rating curve extended above 5,300 ft³/s on basis of step-backwater computation; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1967, reached a stage of 18.35 ft, datum in use prior to Oct. 1, 1974, discharge, 17,800 ft³/s, estimated from rating curve extended above 5,300 ft³/s on basis of step-backwater computation. Flood of Aug. 6, 1959, reached a stage between 20.5 and 22.5 ft, datum in use prior to Oct. 1, 1974, 300 ft downstream , from information by assistant county engineer, discharge not determined.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	----	550	ice jam	Sept. 29	2215	*1550	*16.23
Mar. 3	1100	1,250	15.65				

No flow Oct. 1-6, July 28, 29, Aug. 7,8 and Sept. 16, 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	24	1.6	.98	.77	15	23	10	1.1	.21	.56	1.1
2	.00	8.0	1.4	.96	.76	6.7	17	9.7	2.8	.13	.04	.78
3	.00	5.0	.77	.93	.74	248	14	6.4	1.5	.09	.07	.41
4	.00	1.4	.59	.95	.74	183	12	6.0	1.1	.06	.15	.34
5	.00	1.0	.47	1.0	.73	38	10	5.6	.80	.04	.06	.36
6	.00	.86	.43	1.0	.71	28	11	5.9	.68	.03	.03	.66
7	2.4	.75	.39	1.0	.71	27	8.5	8.5	.60	.03	.00	.26
8	3.0	.62	.44	1.0	.71	22	7.6	5.5	.55	.02	.00	.37
9	3.8	.54	.50	1.0	.70	19	7.5	4.0	.50	.02	.86	.50
10	3.0	.72	.58	.98	.70	18	7.8	3.5	.46	.02	5.6	.25
11	2.2	2.2	.78	1.1	.70	18	7.9	3.1	.44	.02	2.2	.21
12	1.9	1.4	.66	.93	.70	18	7.2	4.2	.47	.02	1.8	.08
13	1.3	1.0	.70	.98	.70	17	6.9	2.4	.50	.02	2.5	.10
14	1.1	.83	.76	.94	.72	14	6.9	2.5	.52	.06	18	.12
15	2.6	.70	1.2	.98	1.9	12	7.1	2.2	.57	6.8	2.4	.03
16	5.7	.62	1.9	.98	5.4	12	6.3	2.5	.65	.75	1.1	.00
17	1.3	.54	1.0	.93	64	10	6.1	2.0	.76	.17	1.1	.01
18	4.3	.66	.52	.93	86	10	5.9	1.8	.62	.04	1.3	.00
19	6.2	1.4	.33	.95	150	10	5.7	1.3	.52	6.7	6.0	.00
20	4.8	1.0	.37	.90	470	8.6	5.4	2.2	.46	2.8	1.8	.00
21	3.5	.90	.46	.89	530	8.2	5.1	1.7	.36	1.1	2.5	.67
22	2.1	.78	.60	.88	250	8.2	5.0	.89	.79	.54	46	1.1
23	1.8	.85	.90	.87	130	8.9	5.8	.17	9.5	.38	2.9	104
24	1.5	1.1	.74	.86	76	8.2	5.2	.56	32	.50	1.2	15
25	2.6	1.0	.60	.85	31	8.6	4.6	.68	.91	15	1.2	5.5
26	2.1	.89	.64	.83	15	7.3	4.8	.15	1.1	.99	.47	7.4
27	1.8	1.1	1.6	.81	7.1	7.9	6.2	.60	1.6	.18	.25	8.7
28	1.5	1.2	3.0	.80	6.4	10	5.1	.63	1.3	.00	.27	9.9
29	1.3	.80	1.8	.79	---	7.6	4.4	.56	.95	.00	.54	343
30	1.1	1.1	1.3	.78	---	8.9	22	.51	.37	.40	.91	306
31	12	---	1.1	.78	---	28	---	.45	---	1.7	.97	---
TOTAL	74.90	62.96	28.13	28.56	1832.89	846.1	252.0	96.20	64.48	38.82	102.78	806.85
MEAN	2.42	2.10	.91	.92	65.5	27.3	8.40	3.10	2.15	1.25	3.32	26.9
MAX	12	24	3.0	1.1	530	248	23	10	32	15	46	343
MIN	.00	.54	.33	.78	.70	6.7	4.4	.15	.36	.00	.00	.00
CFSM	.05	.04	.02	.02	1.25	.52	.16	.06	.04	.02	.06	.51
IN.	.05	.04	.02	.02	1.30	.60	.18	.07	.05	.03	.07	.57
AC-FT	149	125	56	57	3640	1680	500	191	128	77	204	1600

CAL YR 1984	TOTAL	12346.21	MEAN	33.7	MAX	843	MIN	.00	CFSM	.64	IN.	8.75	AC-FT	24490
WTR YR 1985	TOTAL	4234.67	MEAN	11.6	MAX	530	MIN	.00	CFSM	.22	IN.	3.00	AC-FT	8400

06897950 ELK CREEK NEAR DECATUR CITY, IA--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

REMARKS.--Miscellaneous biological data collected September 1970 to September 1972 are available in the District office.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 1984											
27...	14:30	1.3	492	8.1	6.0	9.0	12.0	100	734	220	830
APR 1985											
02...	15:45	20	400	8.3	16.0	30	10.8	114	732	600	510
MAY											
14...	15:15	2.6	489	8.4	21.0	19	10.2	120	731	740	910

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1984											
27...	38	260	75	17	10	8	0.3	4.4	220	49	10
APR 1985											
02...	63	210	60	14	10	9	0.3	3.5	144	57	7.9
MAY											
14...	74	270	80	17	12	9	0.3	3.7	196	52	9.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1984											
27...	0.2	4.3	316	300	0.43	1.1	0.15	0.04	0.05	0.7	0.01
APR 1985											
02...	0.2	9.3	261	250	0.35	14	0.68	0.03	0.04	1.0	0.02
MAY											
14...	0.3	7.8	303	300	0.41	2.1	<0.10	0.05	0.06	2.1	0.02

DATE	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
NOV 1984											
27...	--	0.03	0.07	39	0.14	92	<1	10	110	<0.5	<1
APR 1985											
02...	--	0.03	0.10	72	3.9	99	--	--	--	--	--
MAY											
14...	0.28	0.05	0.09	62	0.44	97	<1	<10	110	<0.5	<1

06897950 ELK CREEK NEAR DECATUR CITY, IA--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)
NOV 1984											
27...	<1	<3	2	8	2	8	830	<0.1	<10	1	<1
APR 1985											
02...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	<1	<3	3	12	4	14	150	0.3	<10	5	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)
NOV 1984											
27...	<1	280	<6	22	--	--	--	--	--	--	--
APR 1985											
02...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	<1	290	<6	4	<8.3	2.7	5.6	4.8	2.2	1.9	0.09

06898000 THOMPSON RIVER AT DAVIS CITY, IA

LOCATION.--Lat 40°38'25", long 93°48'29", in SE1/4 SE1/4 sec.35, T.68 N., R.26 W., Decatur County, Hydrologic Unit 10280102, on right bank 15 ft downstream from bridge on U.S. Highway 69 at Davis City, 2.6 mi upstream from Dickersons Branch, and 5.2 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--701 mi².

PERIOD OF RECORD.--May 1918 to July 1925, July 1941 to current year. Monthly discharge only for some periods, published in WSP 1310. 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. 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.--Estimated daily discharges during water year: Dec 4. to Feb. 22. Records good except those for periods of estimated discharges, which are fair. U.S. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years (water years 1919-24,1942-85), 371 ft³/s, 7.19 in/yr, 268,800 acre-ft/yr; median of yearly mean discharges, 320 ft³/s, 6.2 in/yr 232,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s June 10, 1974, gage height, 19.43 ft, from rating curve extended above 17,000 ft³/s on basis of velocity-area study; minimum daily, 0.1 ft³/s June 25, 1956.

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 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	2100	ice jam	*7.43	Feb. 23	0015	*4,020	6.66

Minimum discharge, 4.0 ft³/s Sept.18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	64	26	25	14	298	227	314	39	51	249	12
2	14	60	26	21	13	298	212	204	59	39	67	11
3	15	88	21	19	13	845	236	123	87	32	38	9.8
4	14	94	19	18	13	3020	213	104	77	27	30	9.0
5	14	52	16	17	13	1570	220	83	70	23	27	8.3
6	15	39	16	16	13	565	174	71	57	21	23	7.8
7	19	35	17	16	13	335	142	66	48	21	19	7.3
8	25	32	17	16	13	290	121	67	44	19	17	7.1
9	19	29	18	15	13	238	108	60	45	18	17	6.9
10	16	44	19	15	13	196	99	57	46	17	45	6.9
11	21	100	20	15	13	199	98	53	47	17	89	6.3
12	23	47	20	15	13	184	96	55	47	17	71	6.4
13	26	36	18	15	12	173	96	67	44	16	43	6.2
14	23	31	19	15	12	157	93	59	41	17	155	6.4
15	23	29	26	16	13	143	87	54	41	331	482	6.9
16	35	26	40	16	15	135	97	50	39	138	69	5.8
17	51	24	61	16	22	123	92	47	38	45	40	5.0
18	37	26	52	16	37	116	87	49	49	29	29	4.7
19	59	24	37	15	60	121	81	47	70	30	27	4.0
20	51	23	40	15	100	120	76	50	48	75	30	5.9
21	42	21	44	15	1200	115	72	56	46	63	23	9.3
22	35	21	52	14	3300	109	70	64	47	66	205	9.2
23	32	22	45	14	3160	107	70	61	42	48	458	472
24	28	23	35	14	2890	107	70	64	667	34	74	367
25	25	24	24	15	1760	105	68	59	500	48	40	60
26	22	24	29	15	916	105	65	56	161	148	32	60
27	22	25	39	14	468	105	73	56	94	61	24	45
28	20	26	145	14	271	106	67	55	64	50	18	41
29	22	26	300	14	---	167	64	48	107	39	18	705
30	24	26	155	14	---	123	74	47	81	32	16	3230
31	29	---	51	14	---	142	---	42	---	143	14	---
TOTAL	815	1141	1447	489	14393	10417	3348	2288	2845	1715	2489	5142.2
MEAN	26.3	38.0	46.7	15.8	514	336	112	73.8	94.8	55.3	80.3	171
MAX	59	100	300	25	3300	3020	236	314	667	331	482	3230
MIN	14	21	16	14	12	105	64	42	38	16	14	4.0
CFSM	.04	.05	.07	.02	.73	.48	.16	.11	.14	.08	.11	.24
IN.	.04	.06	.08	.03	.76	.55	.18	.12	.15	.09	.13	.27
AC-FT	1620	2260	2870	970	28550	20660	6640	4540	5640	3400	4940	10200

CAL YR 1984	TOTAL	205050	MEAN	560	MAX	5500	MIN	13	CFSM	.80	IN.	10.88	AC-FT	406700
WTR YR 1985	TOTAL	46529.2	MEAN	127	MAX	3300	MIN	4.0	CFSM	.18	IN.	2.47	AC-FT	92290

06898400 WELDON RIVER NEAR LEON, IA

LOCATION--Lat 40°41'45, long 93°38'07", in NE1/4 NE1/4 sec.17, T.68 N., R.24 W., Decatur County, Hydrologic Unit 10280102, on left bank 10 ft downstream from bridge on county highway A, 200 ft upstream from unnamed creek, 1.3 mi downstream from Brush Creek, and 6.5 mi southeast of post office at Leon.

DRAINAGE AREA.--104 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 906.26 ft above NGVD.

REMARKS.--Estimated daily discharge: Nov. 12-26 and Dec. 7 to April 1. Records fair except those for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--27 years, 70.2 ft³/s, 9.17 in/yr, 50,860 acre-ft/yr; median of yearly mean discharges, 59 ft³/s, 7.7 in/yr, 42,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,600 ft³/s Aug. 6, 1959, gage height, 25.27 ft, from rating curve extended above 5,600 ft³/s on basis of contracted-opening and flow-over-embankment measurement at gage height 25.27 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage and discharge of the flood of Aug. 6, 1959 are the greatest since at least 1919.

EXTREMES FOR CURRENT YEAR.--Peak discharges gtreater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 29	2000	*2,840	*12.28

Minimum daily discharge, .07 cfs Sept. 10. No flow part of each day on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	33	1.3	3.8	2.2	84	30	36	1.1	5.3	20	1.8
2	2.2	11	1.3	3.6	2.1	70	17	14	11	4.8	5.3	1.8
3	2.2	6.3	1.2	3.5	2.1	300	14	8.7	3.9	4.7	2.8	1.4
4	2.2	5.2	1.2	3.4	2.1	180	11	6.9	3.9	4.4	2.0	.82
5	2.3	3.9	1.1	3.8	2.0	100	11	5.9	3.3	4.1	1.4	.13
6	2.5	3.5	.91	4.1	2.0	70	11	5.8	2.1	3.5	.92	.21
7	3.0	3.4	.89	4.1	2.0	55	9.6	5.6	2.4	3.1	2.0	.74
8	2.9	3.4	.93	4.1	1.9	46	10	4.8	1.8	2.4	2.0	.27
9	2.7	4.0	1.0	4.0	1.9	39	11	3.8	1.4	3.1	1.6	.10
10	2.7	3.4	1.2	4.0	1.9	32	11	3.8	1.5	2.4	4.0	.07
11	2.8	3.2	1.4	3.9	1.9	90	9.0	27	1.9	2.9	2.2	.12
12	3.0	2.6	1.6	3.7	1.9	70	12	14	2.1	3.0	8.5	.19
13	3.3	2.5	1.9	3.4	1.8	50	12	8.0	1.5	2.8	7.5	.17
14	4.8	2.4	2.6	3.2	1.8	35	9.9	6.3	2.2	3.0	10	.22
15	6.6	2.1	4.6	3.0	1.8	26	7.9	5.2	1.7	3.2	4.0	.55
16	7.4	1.6	12	2.9	5.0	21	7.0	4.4	1.5	2.8	1.2	.19
17	6.6	1.2	5.0	2.9	9.0	19	6.4	3.8	3.2	2.9	.59	.35
18	4.3	1.4	3.1	2.9	15	17	6.1	3.1	2.7	2.5	1.8	1.4
19	3.5	1.7	2.5	2.9	31	16	5.8	2.7	2.5	4.4	3.1	.33
20	3.2	1.3	1.6	2.9	33	16	5.6	4.0	1.9	3.5	1.4	.86
21	3.4	1.0	1.9	2.8	330	15	5.5	2.8	1.3	3.0	1.0	1.4
22	2.9	.89	2.1	2.8	200	15	5.2	2.6	2.3	2.4	50	1.4
23	3.0	.86	1.9	2.7	150	17	5.5	2.2	92	1.7	11	600
24	4.1	.92	1.7	2.6	120	16	5.3	2.6	181	2.2	4.3	47
25	3.1	1.0	1.6	2.5	100	15	5.0	2.3	17	5.7	3.0	15
26	2.9	1.2	3.2	2.5	84	14	5.3	3.2	5.8	3.4	2.6	11
27	3.3	1.6	8.0	2.4	74	13	7.0	2.3	9.0	2.7	2.3	8.0
28	3.0	1.3	15	2.4	63	13	5.8	1.6	8.6	2.3	2.0	8.1
29	2.5	1.2	5.7	2.4	---	12	5.0	1.6	6.7	2.1	2.1	944
30	2.2	1.1	4.8	2.3	---	22	29	1.1	5.6	2.7	1.6	706
31	3.6	---	4.1	2.2	---	54	---	.85	---	294	1.7	---
TOTAL	104.4	108.17	97.33	97.7	1243.4	1542	295.9	196.95	382.9	391.0	163.91	2353.62
MEAN	3.37	3.61	3.14	3.15	44.4	49.7	9.86	6.35	12.8	12.6	5.29	78.5
MAX	7.4	33	15	4.1	330	300	30	36	181	294	50	944
MIN	2.2	.86	.89	2.2	1.8	12	5.0	.85	1.1	1.7	.59	.07
CFSM	.03	.03	.03	.03	.43	.48	.09	.06	.12	.12	.05	.75
IN.	.04	.04	.03	.03	.44	.55	.11	.07	.14	.14	.06	.84
AC-FT	207	215	193	194	2470	3060	587	391	759	776	325	4670

CAL YR 1984	TOTAL	22040.45	MEAN	60.2	MAX	1440	MIN	.08	CFSM	.58	IN.	7.88	AC-FT	43720
WTR YR 1985	TOTAL	6977.28	MEAN	19.1	MAX	944	MIN	.07	CFSM	.18	IN.	2.50	AC-FT	13840

06903400 CHARITON RIVER NEAR CHARITON, IA

LOCATION.--Lat 40°57'12", long 93°15'37", in SW1/4 NE1/4 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, 0.4 mi downstream from Wolf Creek and 5.0 mi southeast of Chariton.

DRAINAGE AREA.--182 mi².

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 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges during water year: Oct. 1-4, 6-15, Nov. 8-10, 14-17, 22-25, Dec. 2 to March 1, March 22-27, May 28-31, and Sept. 7-16. Records fair except those for periods of estimated record, which are poor. U.S. Army Corps of Engineers data collection platform at the station.

AVERAGE DISCHARGE.--20 years, 113 ft³/s, 8.43 in/yr, 81,870 acre-ft/yr; median of yearly mean discharges, 92 ft³/s, 6.9 in/yr, 66,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft³/s July 4, 1981, gage height, 23.14 ft; no flow Aug. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1960 reached a stage of about 23 ft, discharge, about 15,000 ft³/s and flood of June 5, 1947 reached a stage of 21.65 ft, from floodmark, discharge, 11,000 ft³/s. A discharge of 0.08 ft³/s was measured on Oct. 30, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 4	1345	1,730	16.67	July 31	1345	*5,120	*19.01

Minimum discharge, 0.42 ft³/s July 29, Sept.17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	12	.95	15	3.7	110	65	11	.98	5.8	1780	3.8
2	.83	17	.95	11	3.3	109	55	8.0	.94	3.6	1310	3.1
3	.76	8.4	.75	7.7	3.0	307	45	4.6	.89	2.3	761	3.1
4	.74	8.2	.65	6.3	2.9	1570	35	3.4	.95	2.0	91	2.4
5	.72	9.8	.60	6.5	2.9	873	28	2.8	1.1	1.6	37	2.4
6	.72	3.3	.56	7.0	2.9	824	24	2.6	1.4	1.1	22	2.2
7	.94	1.0	.54	7.1	2.9	204	19	2.8	1.3	.96	12	1.7
8	1.3	.66	.60	6.9	2.8	99	15	2.5	1.3	1.2	7.0	1.4
9	1.6	.70	.56	7.2	2.8	73	12	2.0	1.0	1.5	4.4	1.2
10	1.3	.80	.74	7.2	2.8	60	11	1.9	.92	1.9	5.6	1.0
11	2.3	1.6	.78	7.3	2.7	62	11	3.0	.91	1.9	6.0	.92
12	3.0	2.3	1.0	6.8	2.7	66	9.8	36	1.0	1.6	28	.82
13	3.4	1.1	1.1	6.8	2.7	59	9.4	8.9	.97	1.1	34	.74
14	2.7	.90	1.5	7.3	2.6	51	9.2	7.3	3.3	1.8	36	.67
15	1.8	.80	3.5	6.8	2.7	39	8.8	6.8	6.4	2.4	29	.59
16	6.0	.75	19	6.8	6.6	34	7.1	4.5	4.4	1.8	15	.54
17	6.9	.70	16	6.8	8.0	30	6.0	4.6	2.8	1.3	7.3	.51
18	2.8	.79	14	6.7	12	27	5.3	4.1	1.6	1.0	4.2	.97
19	5.0	1.7	12	6.3	27	24	4.8	3.4	1.1	2.6	3.2	1.1
20	1.9	1.4	7.3	5.9	45	22	4.2	3.0	.94	4.3	2.9	1.9
21	.83	1.2	6.4	5.5	250	20	4.1	3.1	1.1	2.5	2.2	3.2
22	.84	1.1	6.2	5.3	1200	19	3.9	2.7	3.6	1.8	151	3.3
23	1.6	1.0	5.8	5.2	990	19	4.3	2.4	109	1.1	620	588
24	3.2	.97	5.3	5.2	1100	18	4.0	2.2	971	1.1	226	849
25	3.1	1.0	4.9	5.0	800	18	3.3	1.9	439	3.9	55	658
26	3.3	1.1	5.6	5.0	320	17	3.2	1.2	95	4.4	29	282
27	3.3	1.3	23	4.9	160	17	3.2	1.4	42	1.8	21	57
28	3.4	1.3	33	4.7	105	20	3.7	1.3	22	1.1	15	29
29	3.8	1.3	36	4.5	---	18	3.7	1.2	12	.80	9.9	204
30	3.0	.90	28	4.2	---	18	3.8	1.1	8.1	2.8	6.6	1450
31	2.3	---	18	4.0	---	59	---	1.0	---	3090	4.8	---
TOTAL	74.23	85.07	255.28	202.9	5067.0	4886	421.8	142.7	1737.00	3153.06	5336.1	4154.56
MEAN	2.39	2.84	8.23	6.55	181	158	14.1	4.60	57.9	102	172	138
MAX	6.9	17	36	15	1200	1570	65	36	971	3090	1780	1450
MIN	.72	.66	.54	4.0	2.6	17	3.2	1.0	.89	.80	2.2	.51
CFSM	.01	.02	.05	.04	.99	.87	.08	.03	.32	.56	.95	.76
IN.	.02	.02	.05	.04	1.04	.00	.09	.03	.36	.64	1.09	.85
AC-FT	147	169	506	402	10050	9690	837	283	3450	6250	10580	8240

CAL YR 1984	TOTAL	46542.72	MEAN	127	MAX	1800	MIN	.36	CFSM	.70	IN.	9.51	AC-FT	92320
WTR YR 1985	TOTAL	25515.70	MEAN	6.9	MAX	3090	MIN	.51	CFSM	.38	IN.	5.22	AC-FT	50610

06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IA

LOCATION.--Lat 40°48'02", long 93°11'32", in SW1/4 SW1/4 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 and 4.3 mi northwest of Promise City.

DRAINAGE AREA.--168 mi².

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 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges: Oct. 7, Nov. 30 to Feb. 24 and July 9-16, July 21 to Aug. 5. Records good except those for periods of estimated record, which are poor. U.S. Army Corps of Engineers data collection platform at station.

AVERAGE DISCHARGE.--18 years, 116 ft³/s, 9.38 in/yr, 84,040 acre-ft/yr; median of yearly mean discharges, 100 ft³/s, 8.1 in/yr, 72,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s July 4, 1981, gage height, 29.95 ft; no flow July 6, 7, 21-24, 28-31, and Aug. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 21, 1965, reached a stage of 25.5 ft, from floodmarks, discharge, about 18,000 ft³/s.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 21	2245	ice jam	*18.06	Sept. 30	0330	2,490	14.86
Mar. 4	0915	*3,040	16.36				

Minimum daily discharge, 0.72 ft³/s June 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	47	1.8	23	11	138	93	90	1.2	3.4	150	4.7
2	2.5	42	1.5	21	11	132	51	79	1.2	2.6	35	4.3
3	2.1	19	1.3	20	11	563	38	27	1.1	2.5	16	3.9
4	2.0	9.1	1.1	20	11	2340	30	15	1.1	2.5	10	3.5
5	1.9	4.2	1.1	19	10	314	27	10	1.1	1.8	6.5	3.1
6	1.8	3.8	1.0	22	10	127	32	8.5	1.0	1.4	4.7	2.6
7	1.8	2.8	1.0	22	10	99	28	7.1	.90	1.8	3.1	2.0
8	2.3	2.3	1.1	21	9.8	83	21	5.7	.87	2.0	2.2	1.5
9	2.9	2.3	1.4	21	9.6	66	17	4.2	.79	2.0	1.9	1.2
10	1.5	2.1	1.5	20	9.6	60	15	3.1	.72	2.0	9.7	1.1
11	3.6	8.0	1.9	19	9.5	157	15	118	.72	2.0	9.5	1.1
12	4.6	7.6	2.5	18	9.5	121	15	360	.83	1.8	5.9	.97
13	2.9	4.9	2.8	17	9.4	75	13	61	.77	1.8	11	.91
14	2.2	3.3	14	17	9.3	63	13	45	1.7	1.6	12	.88
15	2.5	2.4	36	16	9.7	55	12	34	1.9	1.6	5.8	.88
16	3.4	1.8	62	15	13	46	12	18	1.1	1.5	2.9	.88
17	2.6	1.6	38	14	16	43	9.8	14	1.1	1.8	1.8	.88
18	40	1.8	26	14	20	43	9.6	10	.88	1.5	1.3	.88
19	56	2.2	12	14	25	42	8.3	7.0	.88	3.2	1.6	.89
20	12	1.5	9.4	14	39	37	7.1	6.2	1.1	2.9	4.6	1.1
21	8.3	1.4	11	13	410	30	6.6	5.0	1.6	2.7	7.8	2.0
22	5.0	1.4	12	13	1300	28	6.1	3.8	5.9	2.0	536	3.0
23	2.9	1.6	11	13	1100	28	6.6	3.4	73	1.4	517	146
24	2.2	1.8	10	13	840	30	5.7	3.2	726	1.2	82	118
25	2.6	2.3	9.2	13	743	27	4.9	2.9	85	1.5	44	28
26	3.4	2.0	14	12	254	26	4.5	2.5	25	1.5	25	33
27	6.2	3.1	52	12	137	24	8.2	17	20	1.4	16	15
28	24	3.2	62	12	117	25	15	7.8	7.4	1.4	10	9.4
29	12	2.8	58	12	--	23	14	2.9	5.5	1.4	7.6	319
30	6.2	2.3	36	12	--	23	18	2.3	3.9	2.7	6.1	1470
31	4.1	---	26	11	--	96	---	1.7	---	600	5.3	---
TOTAL	228.4	191.6	518.6	503	5164.4	4964	556.4	975.3	974.26	658.9	1552.3	2180.67
MEAN	7.37	6.39	16.7	16.2	184	160	18.5	31.5	32.5	21.3	50.1	72.7
MAX	56	47	62	23	1300	2340	93	360	726	600	536	1470
MIN	1.5	1.4	1.0	11	9.3	23	4.5	1.7	.72	1.2	1.3	.88
CFSM	.04	.04	.10	.10	1.10	.95	.11	.19	.19	.13	.30	.43
IN.	.05	.04	.11	.11	1.14	1.10	.12	.22	.22	.15	.34	.48
AC-FT	453	380	1030	998	10240	9850	1100	1930	1930	1310	3080	4330

CAL YR 1984	TOTAL	39974.69	MEAN	109	MAX	3460	MIN	.51	CFSM	.65	IN.	8.85	AC-FT	79290
WTR YR 1985	TOTAL	18467.83	MEAN	50.6	MAX	2340	MIN	.72	CFSM	.30	IN.	4.09	AC-FT	36630

06903880 RATHBUN LAKE NEAR RATHBUN, IA

LOCATION.--Lat 40°49'30", long 92°53'33", in NW1/4 NE1/4 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 and 3.9 mi upstream from Walnut Creek and at mile 142.3.

DRAINAGE AREA.--549 mi².

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD.

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 ft³/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.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 514,000 acre-ft July 22, 23, 1982; maximum elevation, 924.46 ft July 22, 1982; minimum daily contents, 100 acre-ft Oct. 1-15, Nov. 17-21, 1969; minimum elevation, 855.40 ft Oct. 6-10, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 212,000 acre-ft Sept. 30; maximum elevation 905.07 ft Sept. 30; minimum daily contents, 156,000 acre-ft Feb. 17-19; minimum elevation, 899.79 ft Feb. 17-19.

Capacity table (elevation, in feet, and contents, in acre-feet)

860	150	880	31,900	905	211,000
862	226	885	52,700	910	272,600
865	950	890	80,300	915	345,000
870	5,870	895	115,600	920	428,900
875	17,000	900	158,800	925	524,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188000	183000	160000	164000	157000	190000	176000	173000	173000	183000	195000	204000
2	188000	182000	160000	163000	157000	189000	175000	173000	173000	183000	203000	204000
3	187000	182000	159000	163000	157000	187000	175000	173000	173000	183000	206000	204000
4	187000	181000	157000	163000	157000	192000	175000	173000	172000	183000	209000	204000
5	187000	181000	157000	163000	157000	200000	175000	174000	172000	182000	210000	204000
6	187000	180000	158000	163000	157000	204000	175000	174000	172000	182000	210000	204000
7	187000	178000	157000	162000	157000	205000	175000	173000	172000	182000	209000	204000
8	187000	178000	157000	162000	157000	206000	175000	173000	172000	182000	208000	203000
9	187000	177000	157000	162000	157000	204000	174000	173000	172000	181000	206000	203000
10	187000	177000	157000	161000	157000	202000	174000	173000	172000	181000	206000	203000
11	188000	176000	157000	161000	157000	201000	174000	173000	172000	181000	205000	203000
12	188000	175000	157000	160000	157000	199000	174000	174000	172000	181000	203000	202000
13	188000	174000	157000	159000	157000	197000	174000	174000	171000	181000	202000	202000
14	187000	173000	157000	158000	157000	195000	174000	175000	172000	181000	201000	202000
15	188000	173000	157000	158000	157000	193000	174000	175000	172000	181000	200000	201000
16	188000	172000	159000	158000	157000	191000	174000	175000	172000	181000	200000	201000
17	188000	170000	159000	158000	156000	189000	173000	175000	172000	181000	200000	201000
18	187000	170000	159000	158000	156000	186000	173000	175000	172000	180000	200000	201000
19	189000	169000	159000	158000	156000	184000	173000	175000	171000	180000	200000	201000
20	188000	168000	159000	158000	157000	182000	173000	175000	171000	180000	200000	201000
21	189000	167000	159000	158000	157000	180000	173000	175000	172000	180000	199000	201000
22	188000	166000	160000	158000	163000	177000	173000	174000	172000	179000	199000	201000
23	187000	166000	159000	158000	170000	177000	173000	174000	171000	179000	201000	202000
24	186000	165000	160000	158000	178000	177000	173000	174000	177000	179000	203000	203000
25	186000	164000	159000	158000	185000	176000	172000	174000	181000	179000	204000	205000
26	185000	163000	159000	158000	190000	176000	172000	174000	182000	179000	205000	207000
27	184000	164000	160000	158000	192000	176000	172000	174000	184000	179000	205000	208000
28	185000	163000	160000	158000	191000	176000	172000	174000	184000	179000	204000	208000
29	184000	161000	162000	158000	---	176000	172000	173000	184000	179000	204000	208000
30	183000	161000	162000	158000	---	175000	172000	173000	183000	179000	204000	212000
31	182000	---	163000	158000	---	176000	---	173000	---	187000	204000	---
MEAN	187000	172000	159000	160000	163000	188000	174000	174000	174000	181000	203000	204000
MAX	189000	183000	163000	164000	192000	206000	176000	175000	184000	187000	210000	212000
MIN	182000	161000	157000	158000	156000	175000	172000	173000	171000	179000	195000	201000

CAL YR 1984 MEAN 193000 MAX 265000 MIN 157000
WTR YR 1985 MEAN 178000 MAX 212000 MIN 156000

06903900 CHARITON RIVER NEAR RATHBUN, IA

LOCATION.--Lat 40°49'22", long 92°53'22", in SE1/4 NE1/4 sec.35, T.70 N., R.18 W., Appanoose County, Hydrologic Unit 10280201, on left bank 600 ft downstream from outlet of Rathbun Dam, 1.8 mi north of Rathbun and 3.7 mi upstream from Walnut Creek and at mile 142.1.

DRAINAGE AREA.--549 mi².

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. 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.

REMARKS.--Estimated daily discharges during water year: Jan. 21 to Feb. 20, Feb. 22-25, June 24, July 31 and Aug. 1. Records good, except those for periods of estimated record, which are fair. Flow regulated by Rathbun Reservoir (station 06903880) since Nov. 21, 1969. Records of discharge include diversion of:

Date	Discharge (cfs)	Date	Discharge (cfs)	Date	Discharge (cfs)
Oct. 1-5	16	Oct. 23	16	Nov. 17-Dec. 28	11
Oct. 6,7	15	Oct. 24	15	Dec. 29	12
Oct. 8,9	16	Oct. 25	16	Dec. 30-Jan. 2	13
Oct. 10-14	15	Oct. 26-28	15	Jan. 3-Aug. 9	12
Oct. 15-19	16	Oct. 29-Nov. 15	16	Aug. 10	11
Oct. 20-22	15	Nov. 16	13	Aug. 11-Sept. 30	13

The diversion goes from the reservoir through fish ponds on left bank downstream from dam. Diverted flow returns to stream 0.1 mi downstream from gage. U.S. Army Corps of Engineers gage-height telemeter at station. Rathbun Regional Water Association permit No. 3663 allows withdrawal from Rathbun Dam discharge immediately downstream from gage for maximum rate of 4,200 gpm (9.36 ft³/s) and maximum quantity of 638 million gallons per year (1,955 acre-ft).

AVERAGE DISCHARGE.--29 years, 338 ft³/s, 8.36 in/yr, (unadjusted) 244,900 acre-ft/yr; median of yearly mean discharges, 270 ft³/s, 6.7 in/yr, 196,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,800 ft³/s Mar. 31, 1960, gage height, 25.3 ft from flood-mark, site and datum then in use; no flow Oct. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s March 11, gage height, 11.87 ft; minimum daily discharge, 13 ft³/s Dec. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	220	378	38	30	1100	194	25	20	19	23	28
2	28	32	378	35	30	1070	194	25	20	20	21	28
3	28	239	377	114	29	911	194	25	20	20	21	28
4	25	398	173	188	30	573	193	24	20	19	21	28
5	24	396	26	151	30	41	193	24	20	20	257	28
6	28	396	27	139	30	251	193	24	20	19	586	28
7	15	397	26	137	30	752	193	24	20	19	585	28
8	16	397	25	247	30	872	129	24	19	20	585	28
9	16	396	25	388	31	1140	59	24	20	19	580	28
10	15	395	25	388	31	1120	59	23	20	20	433	28
11	25	394	25	387	30	1130	59	22	20	20	583	28
12	32	393	26	386	30	1120	59	22	20	19	584	28
13	29	393	26	387	29	1080	59	23	20	20	585	28
14	30	393	27	187	30	1060	59	22	20	20	582	28
15	30	391	27	37	30	1040	60	21	20	20	270	28
16	156	388	26	37	30	1030	60	22	20	20	28	28
17	642	385	26	36	30	1020	58	23	20	233	29	28
18	412	384	26	36	30	1030	59	22	21	164	28	28
19	34	383	25	35	30	1040	59	22	20	61	29	28
20	30	383	25	34	30	1040	59	22	20	21	29	29
21	135	382	26	34	30	1030	58	22	20	21	29	29
22	314	382	25	32	30	557	50	22	20	21	29	29
23	394	382	26	32	29	202	56	21	21	21	29	31
24	392	381	27	31	29	197	56	21	22	21	28	29
25	394	380	30	31	29	197	57	21	20	22	28	29
26	391	379	26	30	177	193	57	21	20	21	28	29
27	398	382	26	30	545	195	58	21	20	20	28	29
28	398	380	23	29	907	195	59	21	20	21	28	29
29	397	380	15	29	---	195	59	21	20	21	28	33
30	397	379	13	30	---	194	38	21	20	22	28	32
31	400	---	19	30	---	194	---	21	---	23	28	---
TOTAL	5652	10960	1975	3725	2376	21769	2740	696	603	1027	6170	860
MEAN	182	365	63.7	120	84.9	702	91.3	22.5	20.1	33.1	199	28.7
MAX	642	398	378	388	907	1140	194	25	22	233	586	33
MIN	15	32	13	29	29	41	38	21	19	19	21	28
AC-FT	11210	21740	3920	7390	4710	43180	5430	1380	1200	2040	12240	1710

CAL YR 1984	TOTAL	147634	MEAN	403	MAX	1220	MIN	13	AC-FT	292800
WTR YR 1985	TOTAL	58553	MEAN	160	MAX	1140	MIN	13	AC-FT	116100

06904010 CHARITON RIVER NEAR MOULTON, IA

LOCATION.--Lat 40°41'30", long 92°46'15", in SE1/4 NE1/4 sec.14, T.68N., R.17W., Appanoose County, Hydrologic Unit 10280201, on right bank 6 ft downstream from bridge on county highway J45, 0.7 mi downstream from Hickory Creek, 5.0 mi west of Moulton, 8.0 mi upstream from Iowa-Missouri border, 20.8 mi downstream from Rathun dam, and at mile 121.5.

DRAINAGE AREA.--740 mi².

PERIOD OF RECORD--August 1979 to current year

GAGE--Water stage recorder. Datum of gage is 800.00 ft above NGVD (U.S. Army Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges during water year: Oct. 1-17 and Jan. 5 to Feb. 25. Records good except for periods of estimated record, which are poor. Flow regulated by Rathbun Reservoir (station 06903880) 20.8 mi upstream. U.S. Army Corps of Engineers rain-gage, gage-height telemeters and data collection platform at station.

AVERAGE DISCHARGE.--6 years, 642 ft³/s, 11.8 in/yr, 465,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s July 16, 1982, gage height, 36.83 ft; minimum daily, 19 ft³/s Oct. 26, 1979.

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.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 5,280 ft³/s March 4, gage height, 32.79 ft; minimum daily discharge, 21 ft³/s June 9-11, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	2220	417	113	45	1270	293	86	28	31	1390	33
2	33	719	415	163	43	1370	255	127	28	29	272	33
3	36	171	410	133	42	2050	241	85	25	29	85	33
4	38	405	393	153	42	4660	227	60	24	28	61	33
5	33	438	126	200	41	1810	227	49	24	27	52	32
6	31	426	63	160	40	321	230	46	24	27	445	32
7	33	422	59	150	39	604	223	43	24	26	613	31
8	40	422	53	150	38	771	218	42	23	25	610	31
9	28	423	72	280	38	1090	124	40	21	26	608	30
10	22	417	56	450	38	1200	91	38	21	25	527	29
11	22	414	55	450	38	1630	89	37	21	26	568	29
12	54	411	61	450	37	1820	89	38	22	25	620	30
13	220	412	59	450	36	1480	85	44	22	25	623	29
14	370	414	271	450	36	1380	81	131	29	27	616	28
15	320	414	282	120	37	1250	81	67	33	27	583	28
16	370	411	287	54	38	1230	80	47	25	26	141	27
17	550	412	221	52	42	1220	78	43	23	25	42	28
18	1290	414	130	52	47	1220	76	40	22	243	38	28
19	1270	413	99	52	51	1220	75	37	22	126	43	29
20	178	412	79	52	58	1220	73	35	21	59	46	28
21	138	414	93	53	72	1220	72	33	23	30	38	37
22	258	415	112	52	270	1140	71	31	40	28	43	42
23	382	416	93	51	2700	328	64	31	80	27	96	137
24	394	417	89	50	2300	242	67	31	1430	28	132	136
25	393	417	95	50	1800	238	66	30	349	46	71	81
26	398	422	101	49	586	242	66	30	78	39	49	71
27	409	458	198	48	522	241	68	28	50	33	42	55
28	512	462	311	47	868	240	73	29	40	31	38	46
29	446	436	496	47	---	237	72	28	36	32	36	59
30	416	425	357	46	---	236	75	28	33	45	36	715
31	576	---	169	46	---	290	---	28	---	1610	35	---
TOTAL	9293	14472	5702	4673	9944	33470	3630	1462	2641	2831	8599	1980
MEAN	300	482	184	151	355	1080	121	47.2	88.0	91.3	277	66.0
MAX	1290	2220	496	450	2700	4660	293	131	1430	1610	1390	715
MIN	22	171	52	46	36	236	64	28	21	25	35	27
AC-FT	18430	28710	11310	9270	19720	66390	7200	2900	5240	5620	17060	3930

CAL YR 1984	TOTAL	212119	MEAN	580	MAX	4650	MIN	22	AC-FT	420700
WTR YR 1985	TOTAL	98697	MEAN	270	MAX	4660	MIN	21	AC-FT	195800

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage 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.

Annual maximum discharge at crest-stage partial-record stations during water year 1985

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft³/s)
		Upper Iowa River Basin					
05387500	Upper Iowa River at Decorah, Iowa	Lat 43°18'19", long 91°47'48", in NE1/4 sec. 16, T.98N., R.8 W., Winneshiek County, on right bank 1,200 ft upstream from bridge on U.S. Highway 52 (city route) in Decorah.	511	1951-	02-23-85	8.72	5,210
05388310	Waterloo Creek near Dorchester, Ia.	Lat 43°27'04", long 91°30'18", in NW1/4 sec.25, T.100 N., R.6 W., Allamakee County, on State Highway 76, 1.4 mi south of Dorchester.	43.6	1966-	02-23-85	699.08	1,050
		Wexford Creek Basin					
05388400	Wexford Creek near Harpers Ferry, Ia.	Lat 43°16'22", long 91°08'00", in SE1/4 sec.25, T.98 N., R.3 W., Allamakee County, at bridge, 5 mi north of Harpers Ferry on county highway X52.	11.9	1953-	02-23-85	6.60	1,350
		Paint Creek Basin					
05388600	Paint Creek near Waterville, Ia.	Lat 43°10'24", long 91°15'42", near center sec.36, T.97 N., R.4 W., Allamakee County, at bridge on county highway, 3 mi southeast of Waterville.	56.0	1953-	02-23-85	8.80	1,350
05388700	Little Paint Creek tributary near Waterville, Ia.	Lat 43°14'23", long 91°15'07", in SE1/4 sec.1, T.97 N., R.4 W., Allamakee County, at culvert on county highway, 3.5 mi northeast of Waterville.	1.09	1953-	02-23-85	2.45	155
		Turkey River Basin					
05411530	North Branch Turkey River near Cresco, Ia.	Lat 43°22'15", long 92°12'49", in NW1/4 sec.25, T.99 N., R.12.W, Howard County, at bridge on state highway 9, 5 mi west of Cresco.	19.5	1966-	1985	87.33	78
05411700	Crane Creek near Lourdes, Ia.	Lat 43°14'57", long 92°18'32", in SE1/4 NW1/4 sec.6, T.97 N., R.12 W., Howard County, at bridge on State Highway 272, 1 mi southwest of Lourdes.	75.8	1951-	09-30-85	7.49	580
		Little Maquoketa River Basin					
05414350	Little Maquoketa River near Graf, Ia.	Lat 42°30'09", long 90°51'50", in SE1/4 sec.20, T.89 N., R.1 E., Dubuque County, at bridge on county highway, 300 ft downstream from Illinois Central railroad bridge, 0.5 mi northeast of Graf.	39.6	1951-	02-23-85	9.59	2,180
05414400	Middle Fork Little Maquoketa River near Rickardsville, Ia.	Lat 42°33'38", long 90°51'35", in SE1/4 sec.32, T.90 N., R.1 E., Dubuque County, at bridge on county highway, 2 mi southeast of Rickardsville.	30.2	1951-	02-23-85	15.02	640
05414450	North Fork Little Maquoketa River near Rickardsville, Ia.	Lat 42°35'09", long 90°51'20", near NW corner sec.28, T.90 N., R.1 E., Dubuque County, at bridge on county highway, 1 mi northeast of Rickardsville.	21.6	1951-	02-23-85	8.09	1,320
05414500	Little Maquoketa River near Durango, Ia.	Lat 42°33'18", long 90°44'46", in NW1/4 NE1/4 sec. 5, T.89 N., R.2 E., Dubuque County, on left bank 10 ft (3 m) upstream from bridge on county highway, 300 ft (91 m) upstream from Cloie Branch, 1.7 mi (2.7 km) east of Durango, 5.6 mi (9.0 km) northwest of court house at Dubuque and 6.4 mi (10.3 km) upstream from mouth.	130	1934-	1985	--	(+)
05414600	Little Maquoketa River tributary at Dubuque, Ia.	Lat 42°32'33", long 90°41'38", near NW corner sec.11, T.89 N., R.2 E., Dubuque County at bridge on State Highway 386, near north city limits of Dubuque.	1.54	1951-	02-23-85	11.18	170

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Maquoketa River Basin					
05417530	Plum Creek at Earlville, Ia.	Lat 42°28'13", long 91°14'53", in NE1/4 sec.1, T.88 N., R.4 W., Delaware County, at bridge on U.S. Highway 20, 1.5 mi southeast of Earlville.	41.1	1966-	02-23-85	85.91	1,700
05417590	Kitty Creek near Langworthy, Ia.	Lat 42°12'04", long 91°12'27", in NW1/4 sec.4, T.85 N., R.3 W., Jones County, at bridge on U.S. Highway 151, 1 mi northeast of Langworthy.	14.4	1966-	02-23-85	85.98	580
		Wapsipinicon River Basin					
05420600	Little Wapsipinicon River tributary near Riceville, Ia.	Lat 43°21'31", long 92°29'08", near S1/4 corner sec.27, T.99 N., R.14 W., Howard County, at culvert on county highway, 3.5 mi east of Riceville.	0.90	1953-	03-11-85	5.51	(b)
05420620	Little Wapsipinicon River near Acme, Ia.	Lat 43°19'37", long 92°29'07", near N1/4 corner sec.10, T.98 N., R.14 W., Howard County, at bridge on county highway, 1 mi north of Acme.	7.76	1953-	1985	(a)	<92
05420640	Little Wapsipinicon River at Elma, Ia.	Lat 43°14'30", long 92°27'04", in NW1/4 sec.12, T.97 N., R.14 W., Howard County, at bridge on county highway B17, near west city limits of Elma.	37.3	1953-	1985	(a)	<430
05420650	Little Wapsipinicon River near New Hampton, Ia.	Lat 43°03'58", long 92°23'38", in NW1/4 sec.9, T.95 N., R.13 W., Chickasaw County, at bridge on U.S. Highway 18, 4 mi west of New Hampton.	95.0	1966-	03-12-85	86.41	1,450
05420690	East Fork Wapsipinicon River near New Hampton, Ia.	Lat 43°05'11", long 92°18'22", in SE1/4 sec.31, T.96 N., R.12 W., Chickasaw County, at bridge on U.S. Highway 63, 2 mi north of New Hampton.	30.3	1966-	1985	(a)	<480
05420850	Little Wapsipinicon River near Oran, Ia.	Lat 42°42'53", long 92°02'29", near NW corner sec.9, T.91 N., R.10 W., Fayette County at bridge on State Highway 3, 2 mi northeast of Oran.	94.1	1966-	02-23-85	86.24	790
05420855	Buck Creek near Oran, Ia.	Lat 42°42'53", long 92°07'33", in NE1/4 sec.10, T.91 N., R.11 W., Bremer County, at bridge on State Highway 3, 2.5 mi northwest of Oran.	37.9	1966-	02-23-85	87.33	480
05421100	Pine Creek tributary near Winthrop, Ia.	Lat 42°29'17", long 91°47'10", in SW1/4 sec.27, T.89 N., R.8 W., Buchanan County, at culvert on county highway, 2.5 mi northwest of Winthrop.	0.334	1953-	1985	(a)	<53
0541200	Pine Creek near Winthrop, Ia.	Lat 42°28'11", long 91°47'01", in SW/4 sec.34, T.89 N., R.8 W., Buchanan County, at railroad bridge, 500 ft upstream from U.S. Highway 20, and 2.5 mi northwest of Winthrop.	28.3	1950-	02-23-85	13.00	860
05421300	Pine Creek tributary No. 2 at Winthrop, Ia.	Lat 42°28'06", long 91°44'33", at N1/4 corner sec.2, T.88 N., R.8 W., Buchanan County, at culvert on U.S. Highway 20, near west city limits of Winthrop.	0.704	1953-	02-23-85	5.13	13
05421550	Buffalo Creek above Winthrop, Ia.	Lat 42°29'51", long 91°43'42", near NE corner sec.25, T.89 N., R.8 W., Buchanan County, at bridge on county highway W45, 1.5 mi northeast of Winthrop.	68.2	1957-	02-23-85	16.78	1,950
05421600	Buffalo Creek near Winthrop, Ia.	Lat 42°28'07", long 91°43'04 in NE1/4 sec.1, T.88 N., R.8 W., Buchanan County, at bridge on U.S. Highway 20, 1 mi east of Winthrop.	71.4	1953-	1985	(a)	2,040
05421890	Silver Creek at Welton, Ia.	Lat 41°54'54", long 90°36'00", in NW1/4 sec.15, T.82 N., R.3 E., Clinton County, at bridge on U.S. Highway 61, at north edge of Welton.	9.03	1966-	02-23-85	88.67	(+)

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Iowa River Basin					
05448400	Westmain drainage ditch 1 & 2 near Britt, Ia.	Lat 43°06'09", long 93°47'04", in SW1/4 sec.27, T.96 N., R.25 W., Hancock County, at bridge on U.S. Highway 18, near east city limits of Britt.	21.2	1966-	09-06-85	81.86	118
05448600	East Branch Iowa River above Hayfield, Ia.	Lat 43°09'21", long 93°41'21", near S1/4 corner sec.4, T.96 N., R.24 W., Hancock County, at bridge on county highway, 1.5 mi southeast of Hayfield.	2.23	1953-	09-06-85	4.43	(+)
05448700	East Branch Iowa River near Hayfield, Ia.	Lat 43°10'50", long 93°39'20", in NW1/4 sec.35, T.97 N., R.24 W., Hancock County, at bridge on county highway B20, 2 mi east of Hayfield.	7.94	1952-	09-06-85	7.74	71
05448800	East Branch Iowa River near Garner, Ia.	Lat 43°06'17", long 93°37'20", near center sec.25, T.96 N., R.24 W., Hancock County, at bridge on U.S. Highway 18, 1.2 mi west of Garner.	45.1	1952-	1985	(a)	<29
05448900	East Branch Iowa River tributary near Garner, Ia.	Lat 43°06'18", long 93°39'29", near E1/4 corner sec.27, T.96 N., R.24 W., Hancock County, at culvert on U.S. Highway 18, 2.1 mi west of Garner.	5.98	1952-	09-06-85	5.21	100
05451955	Stein Creek near Clutier, Ia.	Lat 42°04'46", long 92°18'00", in NE1/4 sec.24, T.84 N., R.13 W., Tama County, at bridge on State Highway 318, 5 mi east of Clutier.	23.4	1971-	02-22-85	73.85	1,550
05453200	Price Creek at Amana, Ia.	Lat 41°48'18", long 91°52'23", in SE1/4 sec.22, T.81 N., R.9 W., Iowa County, at bridge on State Highway 149, near north edge of Amana.	29.1	1966-	10-18-84	84.19	1,200
05453600	Rapid Creek below Morse, Ia.	Lat 41°43'45", long 91°25'38", near NE corner sec.21, T.80 N., R.5 W., Johnson County, at bridge on county highway, 1.5 mi southeast of Morse.	8.12	1951-	10-18-84	19.58	550
05453750	Rapid Creek southwest of Morse, Ia.	Lat 41°43'23", long 91°26'16", in W1/2 sec. 21, T.80 N., R.5 W., Johnson County, at bridge on county highway, 2 mi southwest of Morse.	15.2	1951-	02-22-85	24.36	1,020
05453850	Rapid Creek tributary No. 3 near Oasis, Ia.	Lat 41°42'33", long 91°27'14", near center sec. 29, T.80 N., R.5 W., Johnson County, at bridge on county highway, 3.5 mi west of Oasis.	1.62	1951-	02-22-85	18.65	91
05453900	Rapid Creek tributary near Oasis, Ia.	Lat 41°41'14", long 91°26'37", near SW corner sec.33, T.80 N., R.5 W., Johnson County, at bridge on county highway X16, 3 mi southwest of Oasis.	0.97	1951-	10-18-84	13.61	190
05453950	Rapid Creek tributary near Iowa City, Ia.	Lat 41°41'56", long 91°28'39", in NW1/4 sec.31, T.80 N., R.5 W., Johnson County, at bridge on county highway, 4 mi northeast of Iowa City.	3.43	1951-	02-22-85	20.95	170
05455100	Old Mans Creek near Iowa City, Ia. (Discontinued)	Lat 41°36'23", long 91°36'56", in NW1/4 sec.36, T.79 N., R.7 W., Johnson County, at bridge on county highway W62, 3 mi southwest of Iowa City.	201	1950-64, 1965-85	02-23-85	12.22	2.870
05455140	North English River near Montezuma, Ia.	Lat 41°38'45", long 92°34'20", in SW1/4 sec.14, T.79 N., R.15 W., Poweshiek County, at bridge on county highway, 5.0 mi northwest of Montezuma.	31.0	1972-	02-22-85	22.39	1,020
05455200	North English River near Guernsey, Ia.	Lat 41°38'47", long 92°23'47", near SW corner sec.17, T.79 N., R.13 W., Poweshiek County, at bridge on county highway V21, 2.2 mi west of Guernsey.	68.7	1953-	02-22-85	10.57	2,000
05455210	North English River at Guernsey, Ia.	Lat 41°38'42", long 92°21'28", at NW corner sec.22, T.79 N., R.13 W., Poweshiek County at bridge on State Highway 21, 1 mi southwest of Guernsey.	81.5	1960, 1966-	02-22-85	82.69	2,200

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Iowa River Basin--Continued					
05455230	Deep River at Deep River, Ia.	Lat 41°35'29", long 92°21'18', in SW1/4 sec.3, T.78 N., R.13 W., Poweshiek County, at bridge on State Highway 21, 1 mi northeast of Deep River.	30.5	1960, 1966-	1985	(a)	<420
05455300	South English River near Barnes City, Ia.	Lat 41°31'26", long 92°27'56", near NW corner sec.34, T.78 N., R.14 W., Poweshiek County, at bridge on county highway, 1 mi north of Barnes City.	11.5	1953-	02-22-85	10.80	410
05455350	South English River tributary No. 2 near Montezuma, Ia.	Lat 41°34'02", long 92°27'01", near SW corner sec.11, T.78 N., R.14 W., Poweshiek County, at box culvert on county highway, 4 mi southeast of Montezuma.	0.523	1953-	02-22-85	11.07	122
05455550	Bulgers run near Riverside, Ia.	Lat 41°29'02", long 91°37'36", in SE1/4 sec.11, T.77 N., R.7 W., Washington County, at bridge on State Highway 22, 2.5 mi west of Riverside.	6.31	1965-	03-03-85	85.30	820
05457440	Deer Creek near Carpenter, Ia.	Lat 43°24'54", long 92°59'05", at NW corner sec.9, T.99 N., R.18 W., Mitchell County, at bridge on State Highway 105, 1.5 mi east of Carpenter.	91.6	1966-	1985	(a)	<1,450
05458560	Beaverdam Creek near Sheffield, Ia.	Lat 42°56'11", long 93°12'09", at NW corner sec.27, T.94 N., R.20 W., Cerro Gordo County, at bridge on U.S. Highway 65, 3 mi north of Sheffield.	123	1966-	1985	(a)	<610
05459010	Elk Creek at Kensett, Ia.	Lat 43°22'18", long 93°12'37", in NE1/4 sec.28, T.99 N., R.20 W., Worth County, at bridge on U.S. Highway 65, 1 mi north of Kensett.	58.1	1966-	1985	(a)	<200
05459490	Spring Creek near Mason City, Ia.	Lat 43°12'48", long 93°12'38", in SE1/4 sec.16, T.97 N., R.20 W., Cerro Gordo County, at bridge on U.S. Highway 65, 4 mi north of Mason City.	29.3	1966-	1985	(a)	<115
05460100	Willow Creek near Mason City, Ia.	Lat 43°08'55", long 93°16'07", near center sec.12, T.96 N., R.21 W., Cerro Gordo County, at bridge on U.S. Highway 18, 3.5 mi west of Mason City.	78.6	1966-	03-11-85	90.01	595
05462750	Beaver Creek tributary near Aplington, Ia.	Lat 42°34'40", long 92°50'49", in NW1/4 sec.27, T.90 N., R.17 W., Butler County, at bridge on U.S. Highway 20, 2 mi east of Aplington.	11.6	1966-	1985	(a)	<100
05463090	Black Hawk Creek at Grundy Center, Ia.	Lat 42°22'10", long 92°46'05", in NW1/4 sec.7, T.87 N., R.16 W., Grundy County, at bridge on State Highway 14, at north edge of Grundy Center.	56.9	1966-	1985	(a)	<40
05464145	Twelve Mile Creek near Traer, Ia.	Lat 42°13'50", long 92°27'56", in SE1/4 sec.27, T.86 N., R.14 W., Tama County, at bridge on U.S. Highway 63, 2.5 mi north of Traer.	43.8	1966-	1985	(a)	<460
05464310	Pratt Creek near Garrison, Ia.	Lat 42°10'53", long 92°11'10", in SE1/4 sec.12, T.85 N., R.12 W., Benton County, at bridge on U.S. Highway 218, 3.5 mi northwest of Garrison.	23.4	1966-	02-22-85	90.69	1,800
05464318	East Blue Creek at Center Point, Ia.	Lat 42°12'44", long 91°47'21", in SW1/4 sec.33, T.86 N., R.8 W., Linn County, at bridge on State Highway 150, 1.5 mi north of Center Point.	17.6	1966-	10-18-84	80.53	950
05464560	Prairie Creek at Blairstown, Ia.	Lat 41°54'42", long 92°05'03", in SW1/4 sec.13, T.82 N., R.11 W., Benton County, at bridge on State Highway 82, at north edge of Blairstown.	87.0	1966-	1985	(a)	<1,100
05464880	Otter Creek at Wilton, Ia.	Lat 41°36'17", long 91°02'08", in NE1/4 sec.35, T.79 N., R.2 W., Cedar County, at bridge on State Highway 38, 1.5 mi northwest of Wilton.	10.7	1966-	02-23-85	85.35	680
05465150	North Fork Long Creek at Ainsworth, Ia.	Lat 41°16'51", long 91°32'16", in SW1/4 sec.22, T.75 N., R.6 W., Washington County, at bridge on U.S. Highway 218, 1 mi southeast of Ainsworth.	30.2	1951, 1965-	03-03-85	88.76	1,050

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft³/s)
		Skunk River Basin					
05469860	Mud Lake drainage ditch 71 in Jewell, Ia.	Lat 42°18'52", long 93°38'23", in SW1/4 sec.27, T.87 N., R.24 W., Hamilton County, at bridge on U.S. Highway 69, in Jewell.	65.4	1966-	1985	(a)	<270
05469990	Keigley Branch near Story City, Ia.	Lat 42°09'01", long 93°37'13", in NW1/4 sec.26, T.85 N., R.24 W., Story County, at bridge on U.S. Highway 69, 3 mi south of Story City.	31.0	1966-	08-22-85	87.84	360
05472090	North Skunk River near Baxter, Ia.	Lat 41°49'13", long 93°03'41", in NE1/4 sec.21, T.81 N., R.19 W., Jasper County, at bridge on State Highway 223, 4.5 mi east of Baxter.	52.2	1966-	03-03-85	76.84	1,280
05472290	Sugar Creek near Searsboro, Ia.	Lat 41°34'26", long 92°44'20", at E1/4 corner sec.7, T.78 N., R.16 W., Poweshiek County, at bridge on State Highway 225, 1.8 mi west of Searsboro.	52.7	1966-	03-03-85	91.79	1,830
05472390	Middle Creek near Lacey, Ia.	Lat 41°25'17", long 92°39'04", near N1/4 corner sec.1, T.76 N., R.16 W., Mahaska County, at bridge on U.S. Highway 63, 1.5 mi northwest of Lacey.	23.0	1966-	03-03-85	86.46	1,030
05472445	Rock Creek at Sigourney, Ia.	Lat 41°20'12", long 92°13'20", in NE1/4 sec.3, T.75 N., R.12 W., Keokuk County, at bridge on State Highway 92, near west edge of Sigourney.	26.3	1966-	03-04-85	88.98	680
05473300	Cedar Creek near Batavia, Ia.	Lat 41°00'34", long 92°07'06", in SW1/4 sec.27, T.72 N., R.11 W., Jefferson County, at bridge on U.S. Highway 34, 2.5 mi northeast of Batavia.	252	1966-	02-23-85	81.57	4,800
		Des Moines River Basin					
05480930	White Fox Creek at Clarion, Ia.	Lat 42°43'55", long 93°42'26", in NW1/4 sec.5, T.91 N., R.24 W., Wright County, at bridge on State Highway 3, 1.5 mi east of Clarion.	13.3	1966-	1985	(a)	<68
05481510	Bluff Creek at Pilot Mound, Ia.	Lat 42°09'59", long 94°01'15", in NW 1/4 sec.20, T.85 N., R.27 W., Boone County, at bridge on State Highway 329, at northwest edge of Pilot Mound.	23.5	1966-	1985	(a)	<250
05481680	Beaver Creek at Beaver, Ia.	Lat 42°02'04", long 94°08'46", in NE1/4 sec.6, T.83 N., R.28 W., Boone County, at bridge on U.S. Highway 30, at southwest edge of Beaver.	38.5	1966-	1985	(a)	<125
05481690	West Beaver Creek at Grand Junction, Ia.	Lat 42°01'56", long 94°12'38", in NE1/4 sec.3, T.83 N., R.29 W., Greene County, at bridge on U.S. Highway 30, near east edge of Grand Junction.	12.6	1966-	1985	(a)	<71
05482600	Hardin Creek at Farnhamville, Ia.	Lat 42°16'01", long 94°25'10", near NE corner sec.14, T.86 N., R.31 W., Calhoun County, at bridge on State Highway 175, near west city limits of Farnhamville.	43.7	1952-	1985	(a)	<88
05482800	Happy Run at Churdan, Ia.	Lat 42°10'16", long 94°29'39', in SW1/4 sec.17, T.85 N., R.31 W., Greene County, at bridge on county highway, 1 mi northwest of Churdan.	7.58	1952-	1985	(a)	(+)
05482900	Hardin Creek near Farlin, Ia.	Lat 42°05'34", long 94°25'39", near N1/4 corner sec.14, T.84 N., R.31 W., Greene County, at bridge on county highway, 1.5 mi northeast of Farlin.	101	1951-	1985	(a)	<580
05483318	Brushy Fork Creek near Templeton, Ia.	Lat 41°56'45", long 94°52'45", in NW1/4 sec.1, T.82 N., R.35 W., Carroll County, at bridge on U.S. Highway 71, 4 mi northeast of Templeton.	45.0	1966-	1985	(a)	(+)
05483349	Middle Raccoon River tributary at Carroll, Ia.	Lat 42°02'30", long 94°52'43", in NW1/4 sec.36, T.84 N., R.35 W., Carroll County, at bridge on U.S. Highway 71, 1.5 mi south of Carroll.	6.58	1966-	1985	(a)	(+)
05487350	South Otter Creek tributary near Woodburn, Ia.	Lat 41°02'48", long 93°35'26" near SW corner sec.11, T.72 N., R.24 W., Clarke County, at bridge on county highway, 2 mi north of Woodburn.	0.71	1955-	1985	*	(+)

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		Des Moines River Basin--Continued					
05487800	White Breast Creek at Lucas, Ia.	Lat 41°01'24", long 93°27'56", in NE1/4 sec.23, T.72 N., R.23 W., Lucas County, at bridge on U.S. Highway 65, near south city limits of Lucas.	128	1953-	02-20-85 06-24-85	b12.75 12.06	 1,300
05488620	Coal Creek near Albia, Ia.	Lat 41°01'02", long 92°50'46", in SW1/4 sec.20, T.72 N., R.17 W., Monroe County, at bridge on U.S. Highway 34, 2 mi southwest of Albia.	13.5	1966-	03-04-85	78.31	420
05489150	Little Muchakinock Creek at Oskaloosa, Ia.	Lat 41°15'58", long 92°38'33", in SE1/4 sec.25, T.75 N., R.16 W., Mahaska County, at bridge on State Highway 137, at south edge of Oskaloosa.	9.12	1966-	1985	(a)	<259
05489350	South Avery Creek near Blakesburg, Ia.	Lat 41°00'59", long 92°37'32", in SE1/4 sec.19, T.72 N., R.15 W., Wapello County, at bridge on U.S. Highway 34, 3.5 mi north of Blakesburg.	33.1	1965-	03-04-85	80.32	1,900
05489490	Bear Creek at Ottumwa, Ia.	Lat 41°00'43", long 92°27'54", in NW1/4 sec.27, T.72 N., R.14 W., Wapello County, at bridge on U.S. Highway 34, near west edge of Ottumwa.	22.9	1965-	03-04-85	86.20	1,400
		Fox River Basin					
05494110	South Fox Creek near West Grove, Ia.	Lat 40°43'31", long 92°36'16", in SE1/4 sec.32, T.69 N., R.15 W., Davis County, at bridge on State Highway 2, 2.4 mi west of West Grove.	12.2	1965-	1985	(a)	(+)
		Big Sioux River Basin					
06483410	Otter Creek north of Sibley, Ia.	Lat 43°27'41", long 95°44'29", at NE corner sec.25, T.100 N., R.42 W., Osceola County, at bridge on county highway L40, 4 mi north of Sibley.	11.9	1952-	06-12-84 04-23-85	7.59 6.81	c440 155
06483430	Otter Creek at Sibley, Ia.	Lat 43°24'14", long 95°46'10", near N1/4 corner sec.14, T.99 N., R.42 W., Osceola County, at bridge on county highway A22, 1 mi northwest of Sibley.	29.9	1952-	04-23-85	7.91	650
06483440	Dawson Creek near Sibley, Ia.	Lat 43°23'23", long 95°42'53", near NW corner sec.20, T.99 N., R.41 W., Osceola County, at culvert on county highway A30, 2 mi southeast of Sibley.	4.35	1952-	05-15-85	6.28	4,500
06483460	Otter Creek near Ashton, Ia.	Lat 43°20'07", long 95°45'43", in SE1/4 sec.2, T.98 N., R.42 W., Osceola County, at bridge on county highway L36, 2 mi northeast of Ashton.	88.0	1952-	04-23-85	8.45	800
06483495	Burr Oak Creek near Perkins, Ia.	Lat 43°14'43", long 96°10'38", in SE1/4 sec.5, T.97 N., R.45 W., Sioux County, at bridge on U.S. Highway 75, 4 mi north of Perkins.	30.9	1966-	04-23-85	85.29	580
		Perry Creek Basin					
06599800	Perry Creek near Merrill, Ia.	Lat 42°43'16", long 96°20'33", in NW1/4 sec.12, T.91 N., R.47 W., Plymouth County, at bridge on county highway C44, 5 mi west of Merrill.	8.17	1953-	1985	(a)	(+)
06599950	Perry Creek near Hinton, Ia.	Lat 42°37'57", long 96°22'13", in NE1/4 sec.15, T.90 N., R.47 W., Plymouth County, at bridge on county highway, 4 mi west of Hinton.	30.8	1953-	04-23-85	35.86	(+)
		Floyd River Basin					
06600030	Little Floyd River near Sanborn, Ia.	Lat 43°11'10", long 95°43'30", in NE1/4 sec.31, T.97 N., R.41 W., O'Brien County, at bridge on U.S. Highway 18, 3.5 mi west of Sanborn.	8.44	1966-	1985	(a)	(+)
		Monona-Harrison Ditch Basin					
06601480	Big Whiskey Slough near Remsen, Ia.	Lat 42°48'28", long 95°53'21", in NW1/4 sec.11, T.92 N., R.43 W., Plymouth County, at bridge on State Highway 3, 4.2 mi east of Remsen.	12.9	1966-	04-23-85	93.49	1,120

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft³/s)
		Monona-Harrison Ditch Basin--Continued					
06602190	Elliott Creek at Lawton, Ia.	Lat 42°28'30", long 96°11'22", in NW1/4 sec.3, T.88 N., R.46 W., Woodbury County, at bridge on U.S. Highway 20, at west edge of Lawton.	34.8	1966-	06-20-83 06-12-84 04-23-85	79.13 86.14 80.17	c1,380 c3,150 1,600
		Little Sioux River Basin					
06604510	Ocheyedan River near Ocheyedan, Ia.	Lat 43°25'58", long 95°36'41", in NE1/4 sec.6, T.99 N., R.40 W., Osceola County, at bridge on State Highway 9, 4 mi northwest of Ocheyedan.	73.5	1966-	04-23-85	82.38	(+)
06605340	Prairie Creek near Spencer, Ia.	Lat 43°05'16", long 95°09'40", in SE1/4 sec.36, T.96 N., R.37 W., Clay County, at bridge on U.S. Highway 71, 4 mi south of Spencer.	22.3	1966-	06-15-85	88.24	165
06605750	Willow Creek near Cornell, Ia.	Lat 42°58'21", long 95°09'40", in SE1/4 sec.12, T.94 N., R.37 W., Clay County, at bridge on U.S. Highway 71, 2 mi northwest of Cornell.	78.6	1966-	04-22-85	85.72	620
06605890	Waterman Creek at Hartley, Ia.	Lat 43°11'06", long 95°30'43", in NE1/4 sec.36, T.97 N., R.40 W., O'Brien County, at bridge on U.S. Highway 18, 1.8 mi west of Hartley.	28.7	1966-	1985	(a)	<41
06606790	Maple Creek near Alta, Ia.	Lat 42°44'56", long 95°22'16", in NE1/4 sec.31, T.92 N., R.38 W., Buena Vista County, at bridge on State Highway 3, 6 mi northwest of Alta.	15.5	1966-	1985	(a)	24
		Soldier River Basin					
06608450	Jordan Creek at Moorhead, Ia.	Lat 41°54'59", long 95°51'33", in NW1/4 sec.16, T.82 N., R.43 W., Monona County, at bridge on State Highway 183, at southwest corner of Moorhead.	30.1	1966-	1985	(a)	(+)
		Boyer River Basin					
06609560	Willow Creek near Soldier, Ia.	Lat 41°55'17", long 95°42'05", near S1/4 corner sec.11, T.82 N., R.42 W., Monona County, at bridge on State Highway 37, 6 mi southeast of Soldier.	29.1	1966-	1985	(a)	(+)
		Mosquito Creek Basin					
06610510	Moser Creek near Earling, Ia.	Lat 41°46'35", long 95°26'55", in NE1/4 sec.1, T.80 N., R.40 W., Shelby County, at bridge on State Highway 37, 1.5 mi west of Earling.	21.6	1966-	1985	(a)	(+)
06610600	Mosquito Creek at Neola, Ia.	Lat 41°26'36", long 95°36'42", in NE1/4 sec.25, T.77 N., R.42 W., Pottawattamie County, at bridge on county highway, 0.5 mi south of Neola. Prior to 04-19-63, gage located 0.9 miles upstream D.A. 128 mi².	131	1952-	04-05-85	18.13	2,750
		Nishnabotna River Basin					
06807418	Graybill Creek near Carson, Ia.	Lat 41°13'57", long 95°22'51", in NW1/4 sec.7, T.74 N., R.39 W., Pottawattamie County, at bridge on State Highway 92, 2 mi east of Carson.	45.9	1966-	1985	(a)	(+)
06807470	Indian Creek near Emerson, Ia.	Lat 41°01'50", long 95°22'51", in NW1/4 sec.19, T.72 N., R.39 W., Montgomery County, at bridge on U.S. Highway 34, 1 mi east of Emerson.	37.3	1966-	1985	(a)	<910
06807720	Middle Silver Creek near Avoca, Ia.	Lat 41°28'33", long 95°28'06", near N1/4 corner sec.17, T.77 N., R.40 W., Pottawattamie County, at bridge on State Highway 83, 7 mi west of Avoca.	3.21	1955-	1985	*	(+)

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		Nishnabotna River Basin--Continued					
06807760	Middle Silver Creek near Oakland, Ia.	Lat 41°19'28", long 95°33'19", near E1/4 corner sec. 4, T.75., R.41 W., Pottawattamie County, at bridge on county highway, 8.5 mi northwest of Oakland.	25.7	1953-	1985	(a)	(+)
06807780	Middle Silver Creek at Treynor, Ia.	Lat 41°14'37", long 95°36'53", near NE corner sec. 1, T.74 N., R.42 W., Pottawattamie County, at bridge on county highway L55, 1 mi north of Treynor.	42.7	1953-	1985	(a)	<720
06808880	Bluegrass Creek at Audubon, Ia.	Lat 41°42'46", long 94°55'43", in NW1/4 sec.28, T.80 N., R.35 W., Audubon County, at bridge on U.S. Highway 71, near south edge of Audubon.	15.4	1966-	1985	(a)	(+)
		Tarkio River Basin					
06811760	Tarkio River near Elliot, Ia.	Lat 41°06'06", long 95°06'09", near NE corner sec.28, T.73 N., R.37 W., Montgomery County, at bridge on county highway, 4.5 mi southeast of Elliot.	10.7	1952-	03-03-85	b10.67	(+)
06811800	East Tarkio Creek near Stanton, Ia.	Lat 41°04'48", long 95°05'34", in W1/2 sec. 34, T.73 N., R.37 W., Montgomery County, at bridge on county highway H24, 7 mi north of Stanton.	4.66	1952-	1985	(a)	<359
06811820	Tarkio River tributary near Stanton, Ia.	Lat 41°02'38", long 95°05'55", near NE corner sec.16, T.72 N., R.37 W., Montgomery County, at box culvert on county highway H63, 4 mi north of Stanton.	0.67	1952-	1985	(a)	(+)
06811875	Snake Creek near Yorktown, Ia.	Lat 40°44'33", long 95°07'46", in NW1/4 sec.32, T.69 N., R.37 W., Page County, at bridge on State Highway 2, 1.5 mi northeast of Yorktown.	9.10	1966-	1985	(a)	<550
		Nodaway River Basin					
06816290	West Nodaway River at Massena, Ia.	Lat 41°14'44", long 94°45'27", in E1/2 sec.33, T.75 N., R.34 W., Cass County, at bridge on State Highway 148, at southeast corner of Massena.	23.4	1966-	1985	(a)	(+)
		Platte River Basin					
06818598	Platte River near Stringtown, Ia.	Lat 40°58'44", long 94°29'39", in SE1/4 sec.2, T.71 N., R.32 W., Adams County, at bridge on U.S. Highway 34, 3.8 mi east of Stringtown.	51.7	1966-	1985	(a)	<500
06819110	Middle Branch 102 River near Gravity, Ia.	Lat 40°49'40", long 94°44'18", in SE1/4 sec.27, T.70 N., R.34 W., Taylor County, at bridge on State Highway 148, 4.8 mi north of Gravity.	33.5	1966-	1985	(a)	(+)
		Chariton River Basin					
06903980	Chariton River near Udell, Ia.	Lat 40°46'53", long 92°50'12, in NE1/4 sec.17, T.69 N., R.17 W., Appanoose County, at bridge on county highway, 5.0 mi west of Udell.	631	1972-	03-04-85	853.15	2,700
06903990	Cooper Creek at Centerville, Ia.	Lat 40°45'02", long 92°51'36", in NW1/4 sec.30, T.69 N., R.17 W., Appanoose County, at bridge on State Highway 5, at north edge of Centerville.	47.8	1966-	03-03-85	72.71	1,750
06904040	Chariton River at Coal City, Ia. (Discontinued)	Lat 40°35'35", long 92°42'40", in NE1/4 sec.20, T.67 N., R.16 W., Appanoose County, at bridge on county highway, at Coal City.	816	1972-	1985	(a)	(+)

\+ Discharge not determined.
a Peak stage did not reach bottom of gage.
b Ice affected.
c Revised.
* Not determined.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05388250 UPPER IOWA R NR DORCHESTER IA (LAT 43 25 16N LONG 091 30 31W)									
OCT 1984					JUN 1985				
10...	09:00	254	15.0	540	10...	13:00	238	20.0	520
NOV					JUL				
28...	12:15	289	4.0	565	24...	07:30	178	21.0	350
APR 1985					SEP				
30...	14:45	587	17.5	475	10...	15:30	478	20.0	425
05389500 MISSISSIPPI RIVER AT MCGREGOR, IOWA (LAT 43 01 29N LONG 091 10 21W)									
MAR 1985					MAY 1985				
20...	14:30	72800	8.5	305	01...	15:30	85900	17.5	340
05411600 TURKEY RIVER AT SPILLVILLE, IOWA (LAT 43 12 28N LONG 091 56 56W)									
OCT 1984					MAY 1985				
09...	13:45	36	15.5	525	02...	08:25	114	12.0	490
NOV					JUN				
28...	14:40	47	3.0	530	10...	15:50	41	20.0	545
FEB 1985					JUL				
07...	11:30	27	0.0	560	24...	15:00	24	24.0	485
MAR					SEP				
21...	10:00	99	5.0	460	10...	07:45	123	18.0	480
05412500 TURKEY RIVER AT GARBER, IOWA (LAT 42 44 24N LONG 091 15 42W)									
OCT 1984					APR 1985				
11...	09:05	339	16.0	575	30...	10:20	1070	15.5	525
NOV					JUL				
27...	15:15	467	7.0	595	23...	12:00	208	22.0	480
FEB 1985					SEP				
05...	15:45	283	0.0	640	09...	13:40	611	23.5	425
MAR									
19...	14:00	1070	9.5	500					
05418450 NF MAQUOKETA R AT FULTON IA (LAT 42 08 42N LONG 090 40 55W)									
OCT 1984					APR 1985				
12...	08:45	171	16.0	590	29...	15:30	289	18.5	595
NOV					JUL				
27...	09:45	351	8.0	540	22...	14:15	155	26.5	595
FEB 1985					SEP				
05...	12:30	183	0.0	625	11...	11:00	150	18.0	610
MAR									
19...	09:15	395	7.0	580					
05418500 MAQUOKETA RIVER NEAR MAQUOKETA, IOWA (LAT 42 05 05N LONG 090 38 04W)									
OCT 1984					APR 1985				
11...	15:30	495	17.0	560	29...	17:35	1020	19.0	555
JAN 1985					JUL				
03...	14:15	782	0.0	540	23...	07:20	242	21.0	570
FEB					SEP				
05...	10:30	557	0.0	605	11...	15:00	436	23.0	545
MAR									
18...	16:45	1280	8.0	520					
05420500 MISSISSIPPI RIVER AT CLINTON, IOWA (LAT 41 46 53N LONG 090 15 04W)									
NOV 1984					JUN 1985				
20...	11:45	40000	2.0	335	04...	12:30	57800	18.0	365
MAR 1985					AUG				
12...	11:00	43000	2.0	336	28...	10:30	35900	21.5	305
MAY									
03...	11:30	96300	17.5	310					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05420560 WAPSIPINICON RIVER NEAR ELMA, IOWA (LAT 43 14 34N LONG 092 31 48W)									
OCT 1984					APR 1985				
02...	17:55	8.0	13.0	520	30...	12:40	55	17.0	440
NOV					JUN				
14...	15:30	59	6.0	420	12...	13:10	14	17.0	410
DEC					JUL				
27...	15:30	18	0.5	470	24...	12:55	5.0	25.0	570
FEB 1985					AUG				
05...	14:15	8.1	0.0	570	27...	13:35	7.2	26.0	460
MAR									
19...	10:25	48	7.0	450					
05421000 WAPSIPINICON R AT INDEPENDENCE, IOWA (LAT 42 27 49N LONG 091 53 42W)									
OCT 1984					MAY 1985				
09...	10:00	89	17.0	420	02...	12:30	585	17.5	410
NOV					JUN				
29...	12:45	192	3.5	480	10...	09:00	121	22.5	420
FEB 1985					JUL				
08...	11:40	89	0.0	560	25...	11:20	61	24.5	400
MAR					SEP				
21...	13:40	667	8.0	350	09...	08:45	261	27.5	385
05422000 WAPSIPINICON RIVER NEAR DE WITT, IOWA (LAT 41 46 01N LONG 090 32 05W)									
OCT 1984					APR 1985				
12...	11:00	314	17.0	425	29...	12:10	1660	17.0	450
NOV					JUL				
26...	13:40	822	7.0	520	22...	11:45	255	27.0	390
MAR 1985					SEP				
18...	13:45	4000	7.0	310	12...	08:40	258	18.5	370
05422470 CROW C AT BETTENDORF IA (LAT 41 33 03N LONG 090 27 15W)									
OCT 1984					MAR 1985				
12...	13:15	2.1	18.0	675	18...	10:00	20	5.0	665
NOV					APR				
26...	10:20	6.0	6.0	715	29...	09:15	8.1	13.0	635
JAN 1985					JUL				
04...	12:45	13	0.0	460	22...	09:15	1.4	23.5	670
FEB					SEP				
04...	10:00	5.4	0.0	790	12...	11:30	0.1	19.0	620
05449000 EAST BRANCH IOWA RIVER NEAR KLEMME, IOWA (LAT 43 00 31N LONG 093 37 42W)									
NOV 1984					APR 1985				
13...	13:30	6.8	7.0	800	29...	13:20	105	15.0	710
DEC					JUN				
18...	13:15	41	0.0	740	10...	15:05	13	17.0	660
FEB 1985					JUL				
04...	15:50	3.3	0.0	460	23...	13:20	6.3	27.0	610
MAR					SEP				
19...	12:50	35	10.0	550	12...	11:05	83	17.0	850
05449500 IOWA RIVER NEAR ROWAN, IOWA (LAT 42 45 36N LONG 093 37 23W)									
NOV 1984					JUN 1985				
13...	11:00	99	5.0	660	10...	11:05	73	19.0	620
DEC					19...	14:45	101	19.5	720
18...	15:15	164	0.0	650	JUL				
FEB 1985					23...	10:50	35	23.0	580
04...	12:15	23	0.0	800	24...	15:00	36	23.5	630
MAR					AUG				
19...	14:35	149	10.0	610	21...	15:00	67	22.0	610
APR					SEP				
29...	11:00	382	15.0	550	12...	13:55	529	17.0	730
MAY					25...	15:00	675	12.5	660
22...	16:00	116	22.0	630					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05451500 IOWA RIVER AT MARSHALLTOWN, IOWA (LAT 42 03 57N LONG 092 54 27W)									
OCT 1984					JUN 1985				
29...	16:15	250	9.0	635	20...	08:45	370	18.0	650
DEC					JUL				
11...	11:00	305	1.0	667	12...	11:50	161	23.0	549
JAN 1985					25...	09:00	350	23.0	630
24...	09:35	222	0.0	650	AUG				
APR					20...	09:00	79	19.0	423
17...	12:20	709	15.5	618	22...	09:15	267	19.0	435
MAY					SEP				
23...	08:45	395	18.0	680	26...	09:15	365	11.5	610
30...	12:00	314	21.5	587					
05451700 TIMBER CREEK NEAR MARSHALLTOWN, IOWA (LAT 42 00 25N LONG 092 51 15W)									
OCT 1984					APR 1985				
30...	09:30	25	9.0	592	17...	14:20	56	16.0	541
DEC					MAY				
11...	13:15	25	0.0	581	30...	14:40	25	24.5	603
JAN 1985					JUL				
24...	11:10	40	0.0	575	12...	13:50	14	22.0	582
MAR					AUG				
07...	10:45	75	2.5	503	19...	16:45	3.6	22.5	597
05451900 RICHLAND CREEK NEAR HAVEN, IOWA (LAT 41 53 58N LONG 092 28 27W)									
OCT 1984					MAY 1985				
30...	11:30	5.9	10.0	502	28...	14:20	9.4	21.0	492
DEC					JUL				
12...	12:45	6.5	0.0	454	10...	15:15	3.9	25.0	449
MAR 1985					AUG				
06...	15:30	45	3.0	358	19...	13:00	2.6	--	483
APR									
18...	11:55	19	20.0	454					
05452000 SALT CREEK NR ELBERON, IOWA (LAT 41 57 51N LONG 092 18 47W)									
OCT 1984					APR 1985				
19...	14:20	120	10.0	515	18...	10:20	82	17.0	531
29...	12:10	51	16.0	555	MAY				
DEC					28...	12:15	48	17.5	572
03...	10:45	11	0.5	610	JUL				
JAN 1985					10...	13:15	19	25.0	585
24...	14:30	48	0.0	550	AUG				
MAR					20...	14:15	9.1	18.0	566
06...	13:45	148	2.0	339					
05452200 WALNUT CREEK NEAR HARTWICK, IOWA (LAT 41 50 06N LONG 092 23 10W)									
OCT 1984					APR 1985				
30...	13:20	7.2	12.0	511	16...	15:35	28	21.5	451
DEC					MAY				
10...	14:45	7.4	0.0	498	28...	15:45	121	26.0	484
JAN 1985					JUL				
28...	14:20	10	0.0	431	10...	16:45	5.2	32.5	482
MAR					AUG				
13...	12:20	47	5.5	452	19...	11:10	1.3	20.0	470

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05453000 BIG BEAR CREEK AT LADORA, IOWA (LAT 41 44 58N LONG 092 10 55W)				
OCT 1984				
23...	13:30	34	8.0	655
30...	15:00	40	10.0	558
DEC				
10...	13:05	39	2.0	635
JAN 1985				
28...	16:00	38	0.0	612
MAR				
04...	10:30	4270	1.0	169
APR 1985				
16...	13:10	88	17.5	512
MAY				
29...	12:40	38	18.5	575
JUL				
08...	13:50	18	25.5	572
AUG				
21...	13:30	6.3	23.0	673
05453100 IOWA RIVER NEAR MARENGO, IOWA (LAT 41 48 41N LONG 092 03 42W)				
OCT 1984				
22...	13:00	842	10.5	570
31...	12:00	575	8.0	596
DEC				
10...	11:00	867	1.5	646
JAN 1985				
28...	12:00	595	0.0	644
MAR				
06...	11:30	7860	1.5	236
APR				
16...	11:30	1400	16.5	586
MAY 1985				
23...	12:00	746	21.0	580
29...	10:55	664	20.0	541
JUN				
20...	12:00	780	21.0	620
JUL				
08...	12:15	429	26.0	376
25...	12:00	217	25.0	430
AUG				
21...	12:00	168	20.0	453
22...	12:00	261	20.0	430
SEP				
26...	12:00	1460	13.0	500
05454000 RAPID CREEK NEAR IOWA CITY, IOWA (LAT 41 41 19N LONG 091 29 15W)				
OCT 1984				
02...	11:10	0.54	10.0	515
DEC				
03...	11:15	10	0.0	660
JAN 1985				
07...	09:00	21	0.0	575
APR 1985				
29...	14:20	9.0	20.0	555
AUG				
02...	11:00	0.33	20.0	450
SEP				
03...	07:45	0.02	21.0	530
05454300 CLEAR CREEK NR CORALVILLE, IOWA (LAT 41 40 36N LONG 091 35 55W)				
OCT 1984				
02...	14:15	5.4	16.0	585
30...	12:30	65	11.5	550
DEC				
04...	14:15	57	0.0	620
12...	15:20	42	3.0	550
JAN 1985				
07...	10:45	71	0.0	525
31...	11:30	30	0.0	570
FEB				
11...	14:00	27	0.0	570
APR 1985				
03...	14:15	112	14.0	515
MAY				
06...	14:10	38	22.0	550
JUN				
03...	08:15	18	15.0	590
AUG				
01...	11:30	8.9	22.0	680
SEP				
04...	08:30	2.8	22.0	740
05454500 IOWA RIVER AT IOWA CITY, IOWA (LAT 41 39 24N LONG 091 32 27W)				
OCT 1984				
03...	11:15	410	16.0	490
NOV				
06...	11:00	2120	10.0	470
DEC				
05...	17:00	841	0.0	480
JAN 1985				
04...	16:35	588	0.0	700
APR				
05...	10:15	2720	7.5	540
MAY				
09...	09:30	665	20.5	590
23...	14:45	616	21.0	610
JUN 1985				
06...	09:00	660	21.0	540
20...	14:30	800	22.0	500
JUL				
02...	09:30	639	25.0	480
26...	09:15	216	25.0	480
AUG				
02...	09:15	228	23.5	490
23...	09:00	195	22.0	445
SEP				
03...	14:15	196	26.5	470
26...	14:15	650	17.0	470

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05455000 RALSTON CREEK AT IOWA CITY, IOWA (LAT 41 39 50N LONG 091 30 48W)				
OCT 1984				
02...	15:45	0.04	12.0	580
31...	16:00	3.5	12.0	590
DEC				
05...	09:15	0.81	0.0	800
JAN 1985				
02...	10:05	3.2	0.0	715
29...	15:15	1.3	0.0	655
MAR				
01...	14:00	3.9	8.0	555
APR 1985				
03...	10:20	2.5	9.5	610
29...	10:30	0.59	13.0	760
JUN				
03...	10:45	0.12	16.0	640
AUG				
01...	08:45	0.14	17.5	520
SEP				
03...	09:45	0.02	22.0	570
05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IOWA (LAT 41 39 05N LONG 091 30 27W				
OCT 1984				
02...	16:10	0.15	12.5	765
DEC				
04...	10:00	1.0	0.0	715
JAN 1985				
04...	12:00	3.9	0.0	695
30...	15:00	1.0	0.0	650
FEB				
21...	09:40	78	0.0	245
MAR 1985				
01...	14:55	4.0	9.0	625
APR				
01...	14:15	3.1	4.0	620
MAY				
02...	13:50	0.79	16.0	720
31...	13:50	0.33	20.0	670
AUG				
01...	09:00	0.18	17.5	530
05455100 OLD MANS CR NR IOWA CITY, IOWA (LAT 41 36 25N LONG 091 36 40W)				
NOV 1984				
05...	12:00	177	7.0	475
DEC				
03...	12:45	63	0.0	530
JAN 1985				
07...	12:00	129	0.0	490
29...	11:00	49	0.0	515
APR				
03...	16:00	194	--	465
MAY 1985				
02...	15:50	56	20.0	485
JUN				
03...	09:55	32	17.0	500
AUG				
01...	13:15	18	24.0	475
SEP				
04...	11:15	3.9	24.0	455
05455500 ENGLISH RIVER AT KALONA, IOWA (LAT 41 27 59N LONG 091 42 56W)				
OCT 1984				
22...	13:15	163	10.0	363
NOV				
29...	15:45	172	5.0	427
JAN 1985				
11...	15:00	189	0.0	431
FEB				
25...	14:40	1980	6.0	259
APR				
04...	13:45	444	10.5	410
MAY 1985				
17...	09:45	147	14.0	425
JUN				
25...	13:15	49	26.0	422
AUG				
08...	15:00	15	29.0	453
SEP				
19...	13:45	650	27.0	458
05455700 IOWA RIVER NEAR LONE TREE, IOWA (LAT 41 25 15N LONG 091 28 25W)				
OCT 1984				
23...	13:45	2440	13.0	452
NOV				
30...	13:30	1410	6.5	501
FEB 1985				
25...	12:15	12400	0.5	318
MAY				
20...	13:30	1240	22.5	580
24...	08:30	1200	20.0	590
JUN 1985				
21...	11:00	887	22.0	520
28...	12:45	701	24.5	470
JUL				
26...	12:00	477	26.0	480
AUG				
09...	13:00	258	27.0	493
SEP				
27...	11:00	817	15.0	460

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05457700 CEDAR RIVER AT CHARLES CITY, IOWA (LAT 43 03 45N LONG 092 40 23W)									
OCT 1984					JUN 1985				
03...	09:45	182	13.0	590	12...	09:40	295	17.0	560
DEC					JUL				
28...	09:15	668	3.0	540	24...	19:45	154	26.0	645
FEB 1985					SEP				
06...	10:20	187	0.0	300	10...	17:40	513	21.0	520
APR									
30...	15:15	749	17.0	600					
05458000 LITTLE CEDAR RIVER NEAR IONIA, IOWA (LAT 43 02 05N LONG 092 30 05W)									
OCT 1984					MAY 1985				
03...	11:40	37	13.0	560	01...	09:50	182	15.0	490
NOV					JUN				
15...	13:00	182	5.0	420	12...	11:20	66	17.0	400
DEC					JUL				
28...	10:40	203	1.0	340	25...	10:55	26	24.0	400
FEB 1985					SEP				
06...	12:55	40	0.0	550	10...	15:40	152	22.0	460
MAR									
19...	12:20	162	9.0	520					
05458500 CEDAR RIVER AT JANESVILLE, IOWA (LAT 42 38 54N LONG 092 27 54W)									
NOV 1984					APR 1985				
19...	16:10	697	3.0	590	30...	09:55	1300	18.0	500
JAN 1985					JUN				
23...	14:40	344	0.0	600	17...	17:25	603	21.0	540
FEB					JUL				
11...	14:20	290	0.0	720	23...	09:05	252	21.0	450
MAR					SEP				
26...	10:20	903	7.0	570	10...	09:20	582	22.0	480
05458900 WEST FORK CEDAR RIVER AT FINCHFORD, IOWA (LAT 42 37 50N LONG 092 32 24W)									
NOV 1984					JUN 1985				
20...	09:45	237	3.0	600	17...	13:20	406	22.0	580
JAN 1985					JUL				
23...	12:40	118	0.0	600	22...	15:30	135	28.0	440
MAR					SEP				
25...	16:45	497	6.0	615	10...	10:55	590	22.0	600
APR									
30...	12:20	693	18.0	580					
05459000 SHELL ROCK RIVER NEAR NORTHWOOD, IOWA (LAT 43 24 51N LONG 093 13 14W)									
OCT 1984					APR 1985				
02...	15:15	13	14.0	540	24...	14:00	236	15.0	565
23...	13:52	118	9.0	562	30...	09:40	202	16.0	520
NOV					MAY				
14...	12:30	184	6.0	650	20...	12:30	110	19.0	600
27...	15:00	127	4.0	579	JUN				
DEC					11...	15:35	56	16.0	670
26...	15:30	--	2.0	695	17...	13:15	100	21.5	610
27...	13:35	165	0.5	670	JUL				
JAN 1985					22...	13:45	21	28.0	900
28...	14:30	260	0.0	940	AUG				
FEB					19...	13:15	15	24.0	938
05...	11:30	32	0.0	990	SEP				
MAR					11...	11:50	101	19.0	700
18...	13:00	370	6.0	710	23...	12:30	69	12.0	640
25...	11:45	252	3.5	520					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05459500 WINNEBAGO RIVER AT MASON CITY, IOWA (LAT 43 09 54N LONG 093 11 33W)									
OCT 1984					MAR 1985				
02...	12:45	40	21.0	690	18...	17:40	517	9.0	680
NOV					APR				
14...	10:00	216	5.0	780	29...	16:20	302	17.0	700
DEC					JUL				
27...	11:25	152	2.0	750	23...	16:30	37	25.0	625
FEB 1985					SEP				
05...	09:45	33	0.0	800	11...	14:30	225	24.0	810
05462000 SHELL ROCK RIVER AT SHELL ROCK, IOWA (LAT 42 39 10N LONG 092 35 46W)									
NOV 1984					APR 1985				
19...	14:05	602	3.0	650	30...	16:30	1150	18.0	550
JAN 1985					JUN				
03...	12:40	496	0.0	500	17...	15:35	922	21.0	600
FEB					JUL				
11...	12:05	250	0.0	690	22...	13:45	260	23.5	540
MAR					SEP				
25...	14:40	989	7.0	610	10...	12:45	754	22.0	690
05463000 BEAVER CREEK AT NEW HARTFORD, IOWA (LAT 42 30 50N LONG 092 37 55W)									
NOV 1984					APR 1985				
20...	17:20	73	1.0	660	29...	14:50	122	20.0	550
JAN 1985					JUN				
03...	15:30	144	0.0	550	17...	11:25	128	19.0	610
FEB					JUL				
12...	16:30	30	0.0	500	22...	11:30	65	24.0	500
MAR					SEP				
25...	11:30	179	5.0	625	09...	12:15	66	22.0	675
05463500 BLACK HAWK CREEK AT HUDSON, IOWA (LAT 42 24 28N LONG 092 27 47W)									
NOV 1984					APR 1985				
20...	15:05	77	1.0	620	29...	12:10	120	17.0	550
JAN 1985					JUN				
23...	16:10	46	0.0	650	18...	12:35	101	17.0	590
FEB					JUL				
12...	11:30	33	0.0	220	23...	14:30	39	25.5	610
MAR					SEP				
26...	16:45	135	10.0	650	09...	15:05	39	22.0	660
05464000 CEDAR RIVER AT WATERLOO, IOWA (LAT 42 29 44N LONG 092 20 03W)									
NOV 1984					APR 1985				
20...	13:30	2150	2.0	640	29...	19:30	4600	18.0	540
JAN 1985					JUL				
02...	16:00	2620	0.0	500	23...	12:30	875	22.0	500
MAR					SEP				
26...	14:10	3440	9.0	620	09...	15:50	3230	24.0	500
05464500 CEDAR RIVER AT CEDAR RAPIDS, IOWA (LAT 41 58 14N LONG 091 40 01W)									
OCT 1984					APR 1985				
24...	11:30	2780	10.0	531	24...	09:45	4300	17.5	447
NOV					MAY				
26...	12:30	2490	7.0	578	24...	09:50	2230	22.0	410
DEC					JUN				
21...	10:45	2270	0.0	939	10...	11:30	1690	24.0	375
FEB 1985					JUL				
25...	11:30	12200	1.0	340	25...	12:30	1160	25.5	338
MAR					AUG				
25...	11:20	4140	7.0	514	26...	10:15	814	20.5	371

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05465000 CEDAR RIVER NEAR CONESVILLE, IOWA (LAT 41 24 36N LONG 091 17 06W)									
OCT 1984					MAY 1985				
23...	11:30	3230	11.0	525	17...	13:30	3650	17.5	458
NOV					JUN				
30...	11:15	2990	5.0	587	28...	10:45	2040	24.0	391
APR 1985					AUG				
08...	11:00	7850	7.0	525	09...	11:00	1150	25.0	442
05465500 IOWA RIVER AT WAPELLO, IOWA (LAT 41 10 48N LONG 091 10 57W)									
OCT 1984					MAY 1985				
03...	14:30	1980	16.0	415	01...	11:30	7410	17.0	494
30...	10:30	5640	11.0	484	JUL				
DEC					09...	11:30	2510	27.0	408
11...	10:30	3650	0.0	573	AUG				
MAR 1985					27...	10:30	1530	21.0	483
01...	12:00	26300	3.0	294					
05470000 SOUTH SKUNK RIVER NEAR AMES, IOWA (LAT 42 04 05N LONG 093 37 02W)									
OCT 1984					MAY 1985				
24...	11:20	18	9.0	560	16...	10:45	89	13.5	790
NOV					JUN				
28...	10:20	41	3.0	690	24...	13:15	42	24.0	740
JAN 1985					AUG				
09...	11:30	50	0.0	700	06...	15:35	2.0	27.0	560
APR					SEP				
04...	12:30	481	6.0	680	19...	17:30	27	26.0	750
05470500 SQUAW CREEK AT AMES, IOWA (LAT 42 01 21N LONG 093 37 45W)									
OCT 1984					MAY 1985				
24...	09:25	6.3	6.0	700	16...	09:25	40	13.0	700
NOV					JUN				
28...	08:55	20	3.0	610	24...	19:05	20	25.0	700
JAN 1985					AUG				
09...	09:30	31	0.0	650	06...	14:30	2.5	24.0	760
FEB					SEP				
20...	15:15	86	1.5	390	19...	18:20	19	25.0	750
APR									
04...	09:45	286	6.0	680					
05471050 S SKUNK R AT COLFAX, IOWA (LAT 41 40 55N LONG 093 14 47W)									
OCT 1984					JUL 1985				
31...	16:20	98	10.0	660	11...	10:25	54	19.0	630
MAR 1985					AUG				
13...	09:50	584	4.0	540	21...	13:40	17	20.0	630
APR					SEP				
18...	11:50	302	20.5	660	19...	11:20	83	24.5	600
MAY									
30...	14:50	161	26.0	680					
05471200 INDIAN CREEK NEAR MINGO, IOWA (LAT 41 48 17N LONG 093 18 26W)									
NOV 1984					MAY 1985				
01...	10:20	317	8.0	390	30...	16:20	24	27.0	650
MAR 1985					JUL				
13...	08:35	174	3.0	540	11...	08:05	5.3	19.0	620
APR					AUG				
18...	13:10	91	21.5	620	21...	14:45	1.8	23.0	580

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IOWA (LAT 41 21 19N LONG 092 39 31W)									
OCT 1984					APR 1985				
29...	10:45	383	8.0	590	16...	10:05	724	17.5	600
DEC					MAY				
12...	09:00	596	0.0	550	30...	09:55	297	18.5	610
JAN 1985					JUL				
21...	10:30	272	0.0	580	08...	10:05	148	26.0	480
MAR					AUG				
04...	12:05	8380	3.0	260	19...	10:00	56	21.0	580
14...	10:45	1210	6.0	520					
05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA (LAT 41 18 03N LONG 092 12 16W)									
OCT 1984					MAY 1985				
15...	11:30	17	17.5	488	13...	10:15	194	18.0	480
NOV					JUN				
26...	10:00	170	5.0	479	24...	10:00	71	20.5	489
JAN 1985					AUG				
08...	11:30	392	0.0	464	05...	10:45	28	22.5	489
FEB					SEP				
19...	11:15	240	0.0	417	16...	10:45	11	17.0	565
APR									
01...	11:15	719	4.5	427					
05473400 CEDAR CR NR OAKLAND MILLS, IOWA (LAT 40 55 00N LONG 091 40 00W)									
OCT 1984					MAY 1985				
19...	14:00	4660	13.0	149	16...	12:15	201	17.0	431
NOV					JUN				
29...	13:00	124	5.0	562	27...	10:35	38	26.0	432
JAN 1985					AUG				
11...	11:30	123	0.0	520	08...	12:15	24	26.0	295
FEB					SEP				
22...	13:45	4690	0.0	182	19...	11:00	1.7	24.5	592
APR									
04...	10:45	216	10.5	483					
05474000 SKUNK RIVER AT AUGUSTA, IOWA (LAT 40 45 13N LONG 091 16 40W)									
OCT 1984					FEB 1985				
03...	11:00	302	15.0	512	05...	12:00	611	0.0	647
26...	12:00	1620	12.0	466	27...	14:00	15100	1.5	238
DEC					MAY				
20...	12:30	2180	0.0	442	07...	13:00	937	20.0	474
					SEP				
					06...	12:00	431	27.0	514
05476500 DES MOINES RIVER AT ESTHERVILLE, IOWA (LAT 43 23 51N LONG 094 50 38W)									
NOV 1984					MAY 1985				
06...	12:30	299	5.0	1050	28...	13:30	973	22.0	760
DEC					JUL				
17...	13:35	357	1.0	975	09...	11:15	759	26.0	730
JAN 1985					AUG				
28...	12:00	48	0.0	1600	21...	12:00	96	21.0	975
APR									
15...	15:30	789	14.0	850					
05476750 DES MOINES RIVER AT HUMBOLDT, IOWA (LAT 42 43 12N LONG 094 13 06W)									
NOV 1984					JUN 1985				
07...	15:30	464	12.0	990	25...	11:20	761	20.0	800
DEC					JUL				
20...	12:35	742	0.0	760	11...	11:30	826	25.0	720
MAR 1985					AUG				
13...	16:35	2730	3.0	800	19...	13:15	212	24.5	620

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IOWA (LAT 42 43 26N LONG 094 11 30)									
NOV 1984					APR 1985				
07...	11:00	132	8.0	680	18...	12:30	934	18.0	600
DEC					MAY				
19...	16:20	537	0.0	650	31...	11:00	465	20.5	650
JAN 1985					JUL				
30...	12:55	72	0.0	480	11...	13:30	138	26.5	690
MAR					AUG				
13...	14:30	1260	5.0	680	19...	11:30	41	24.0	610
05480500 DES MOINES RIVER AT FORT DODGE, IOWA (LAT 42 30 22N LONG 094 12 04W)									
OCT 1984					MAR 1985				
02...	14:30	250	14.0	680	19...	16:00	4400	2.0	725
NOV					JUL				
07...	11:45	624	9.0	900	15...	12:55	780	26.0	700
JAN 1985					AUG				
21...	16:00	416	0.0	1200	19...	16:00	25	24.5	650
FEB									
07...	12:55	212	0.0	750					
05481000 BOONE RIVER NEAR WEBSTER CITY, IOWA (LAT 42 26 01N LONG 093 48 12W)									
OCT 1984					MAR 1985				
19...	13:15	136	13.0	580	04...	15:30	704	6.0	660
NOV					MAY				
26...	12:20	86	8.0	750	15...	15:10	326	15.0	650
JAN 1985					JUN				
09...	13:55	116	0.0	800	24...	11:15	121	25.0	670
FEB									
21...	10:15	291	1.0	460					
05481300 DES MOINES RIVER NR STRATFORD, IOWA (LAT 42 15 04N LONG 093 59 52W)									
OCT 1984					MAR 1985				
24...	14:20	909	10.0	800	05...	11:20	4950	6.0	680
FEB 1985					SEP				
21...	12:15	619	1.5	540	26...	13:50	2700	14.0	870
05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA (LAT 41 40 50N LONG 093 40 07W)									
NOV 1984					JUN				
29...	12:05	1090	5.0	740	25...	10:05	2000	26.0	590
JAN 1985					AUG 1985				
08...	14:15	1680	1.0	750	06...	10:15	314	24.0	710
APR					SEP				
11...	13:25	5240	7.0	700	17...	12:45	2360	24.0	460
05481950 BEAVER CREEK NEAR GRIMES, IOWA (LAT 41 41 18N LONG 093 44 08W)									
OCT 1984					APR 1985				
23...	14:50	76	12.0	750	14...	16:55	89	19.0	740
FEB 1985					JUN				
20...	09:55	71	0.5	550	25...	13:40	36	26.0	740
MAR									
03...	14:00	309	11.0	650					
05482135 NORTH RACCOON RIVER NR NEWELL, IOWA (LAT 42 36 16N LONG 095 02 42W)									
DEC 1984					MAY 1985				
04...	13:00	22	0.0	925	29...	10:50	160	16.0	720
FEB 1985					JUL				
25...	14:45	14	0.0	950	10...	11:15	41	22.5	680
MAR					AUG				
13...	09:45	75	5.0	800	26...	16:15	5.7	27.0	540
APR									
16...	14:55	90	18.0	710					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05482170 BIG CEDAR CREEK NEAR VARINA, IOWA (LAT 42 41 16N LONG 094 47 52W)									
OCT 1984					MAY 1985				
26...	15:10	1.2	11.0	690	29...	13:45	50	18.0	700
DEC					JUL				
04...	15:30	1.1	12.0	1600	10...	09:15	10	21.0	790
FEB 1985					AUG				
25...	11:35	20	0.0	960	26...	11:10	3.4	20.0	875
APR									
15...	11:30	41	16.0	690					
05482300 N RACCOON R NR SAC CITY IOWA (LAT 42 20 28N LONG 094 59 05W)									
OCT 1984					APR 1985				
23...	16:15	74	15.0	680	16...	18:00	282	18.0	660
DEC					MAY				
04...	10:40	44	0.0	850	29...	14:00	425	21.0	650
JAN 1985					JUL				
17...	11:50	96	0.0	960	10...	13:30	112	24.5	660
FEB					AUG				
27...	14:05	98	2.0	750	22...	14:30	22	23.0	625
05482500 NORTH RACCOON RIVER NEAR JEFFERSON, IOWA (LAT 41 59 17N LONG 094 22 36W)									
OCT 1984					APR 1985				
22...	18:00	258	12.5	690	17...	11:00	602	18.0	690
DEC					MAY				
03...	15:25	131	0.5	775	30...	12:15	912	21.0	660
FEB 1985					JUL				
13...	12:35	90	0.0	750	10...	18:45	252	29.0	590
27...	11:25	410	0.0	625	23...	11:00	75	22.0	510
05483000 EAST FORK HARDIN CREEK NR. CHURDAN, IOWA (LAT 42 06 27N LONG 094 22 12W)									
OCT 1984					APR 1985				
22...	13:15	0.3	12.0	710	17...	13:50	5.0	20.0	610
DEC					MAY				
03...	12:25	0.31	1.0	900	30...	09:15	6.6	19.0	620
JAN 1985					JUL				
17...	14:00	1.8	0.0	1090	16...	15:30	1.0	29.0	650
FEB					AUG				
26...	13:15	2.7	0.0	690	23...	13:00	0.14	22.5	600
05483450 M RACCOON R NR BAYARD, IOWA (LAT 41 47 00N LONG 094 30 00W)									
NOV 1984					MAY 1985				
26...	11:05	99	7.0	700	09...	15:05	211	22.0	600
JAN 1985					JUN				
07...	12:00	191	0.0	670	20...	13:45	120	22.0	750
FEB					AUG				
19...	12:05	112	0.0	450	05...	10:45	44	23.0	700
APR					SEP				
02...	11:45	141	5.0	660	18...	11:20	26	22.0	600
05483600 MIDDLE RACCOON RIVER AT PANORA, IOWA (LAT 41 41 14N LONG 094 22 15W)									
OCT 1984					JUN 1985				
31...	15:05	81	11.0	590	20...	11:20	128	20.0	620
NOV					AUG				
26...	13:20	111	7.0	450	05...	12:35	25	24.0	420
APR 1985					SEP				
02...	15:15	189	6.0	650	18...	14:30	28	23.0	620

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05484000		**SOUTH RACCOON RIVER AT REDFIELD, IOWA (LAT 41 34 48N LONG 094 10 58W)**		
OCT 1984				
22...	16:15	273	12.0	620
NOV				
26...	15:15	248	9.0	595
JAN 1985				
07...	16:20	470	0.0	560
FEB				
19...	15:30	435	1.0	490
MAY 1985				
14...	14:25	331	19.0	590
JUN				
25...	17:25	305	26.0	620
AUG				
05...	14:15	90	24.0	600
05484500		**RACCOON RIVER AT VAN METER, IOWA (LAT 41 32 02N LONG 093 56 59W)**		
NOV 1984				
01...	10:15	117	7.0	410
26...	16:45	608	9.0	660
JAN 1985				
22...	14:30	584	0.0	710
FEB 1985				
19...	17:10	523	0.5	725
JUN				
25...	15:55	866	26.0	500
05484800		**WALNUT CREEK AT DES MOINES, IOWA (LAT 41 35 14N LONG 093 42 11W)**		
OCT 1984				
30...	17:05	6.3	10.0	720
DEC				
13...	16:10	13	0.5	710
JAN 1985				
23...	09:00	8.8	0.0	850
MAR				
11...	12:50	42	9.0	640
APR				
18...	08:20	28	16.5	660
MAY 1985				
30...	08:05	22	19.5	555
JUL				
10...	07:40	1.5	20.5	690
23...	10:25	0.35	20.0	620
AUG				
20...	15:25	0.13	23.0	730
05484900		**RACCOON RIVER AT FLEUR DRIVE, DES MOINES, IOWA (LAT 41 34 58N LONG 093 38 30W**		
OCT 1984				
31...	09:20	476	8.0	650
MAR 1985				
12...	11:10	1440	5.0	540
APR				
17...	16:40	1370	19.0	600
MAY 1985				
29...	15:45	1820	22.0	630
JUL				
10...	09:00	464	26.0	480
AUG				
20...	14:10	108	20.5	490
05485500		**DES MOINES R. BL RACCOON R. AT DES MOINES, IOWA (LAT 41 34 30N LONG 093 35 48**		
OCT 1984				
03...	13:10	543	17.5	600
AUG 1985				
21...	08:40	344	21.5	590
05485640		**FOURMILE CREEK AT DES MOINES, IOWA (LAT 41 36 50N LONG 093 32 43W)**		
OCT 1984				
31...	12:15	13	8.0	850
DEC				
14...	09:10	12	0.0	920
JAN 1985				
23...	11:35	12	0.0	980
MAR				
12...	14:15	70	6.0	690
APR				
18...	09:40	37	18.0	730
MAY 1985				
30...	10:10	18	21.0	770
JUL				
10...	10:35	2.0	23.0	1280
23...	09:10	0.65	19.5	1280
AUG				
21...	09:50	0.8	18.5	1700
05486000		**NORTH RIVER NEAR NORWALK,IOWA (LAT 41 27 25N LONG 093 39 10W)**		
OCT 1984				
30...	14:55	15	10.0	480
DEC				
13...	12:45	17	0.0	430
JAN 1985				
22...	15:45	16	0.0	560
MAR				
07...	12:35	189	3.5	405
APR 1985				
17...	13:30	69	21.0	470
MAY				
29...	13:10	21	21.0	480
JUL				
09...	14:00	12	27.0	440
AUG				
20...	12:50	2.1	20.5	490

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA (LAT 41 25 27N LONG 093 35 09W)									
OCT 1984					APR 1985				
30...	13:00	36	10.0	520	17...	13:05	107	20.0	450
DEC					MAY				
13...	11:15	31	0.0	310	29...	11:20	52	19.0	500
JAN 1985					JUL				
22...	14:05	44	0.0	580	09...	12:30	37	29.0	410
MAR					AUG				
07...	10:30	290	3.5	365	20...	11:35	15	19.0	520
05487470 SOUTH RIVER NEAR ACKWORTH, IOWA (LAT 41 20 14N LONG 093 29 10W)									
OCT 1984					APR 1985				
30...	10:25	10	10.0	480	17...	10:20	63	17.0	470
DEC					MAY				
13...	09:30	14	0.0	550	29...	09:55	17	18.5	500
JAN 1985					JUL				
22...	11:35	17	0.0	520	09...	10:25	18	26.0	460
MAR					AUG				
07...	08:35	297	3.0	370	20...	09:55	8.9	19.0	400
05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA (LAT 41 14 41N LONG 093 16 08W)									
OCT 1984					APR 1985				
30...	08:30	7.6	10.0	470	17...	08:20	48	15.5	520
DEC					MAY				
12...	15:00	21	0.0	510	29...	08:05	8.7	17.5	520
JAN 1985					JUL				
22...	09:25	9.2	0.0	660	09...	08:20	3.9	24.5	440
MAR					AUG				
06...	16:00	318	1.5	350	20...	08:20	8.3	18.0	300
05488200 ENGLISH CR NR KNOXVILLE, IOWA (LAT 41 16 00N LONG 093 05 00W)									
OCT 1984					MAY 1985				
29...	16:15	1.7	8.5	750	28...	15:20	2.0	20.0	630
DEC					JUL				
12...	16:10	6.0	0.5	630	08...	15:50	0.4	27.0	570
MAR 1985					AUG				
06...	13:50	54	1.5	395	19...	15:15	0.29	24.0	400
APR									
16...	15:40	14	17.0	570					
05488500 DES MOINES RIVER NEAR TRACY, IOWA (LAT 41 16 53N LONG 092 51 34W)									
OCT 1984					APR 1985				
29...	13:15	2530	10.5	610	16...	12:25	6810	14.5	580
DEC					MAY				
12...	11:15	3580	1.0	640	28...	12:10	6250	21.0	680
JAN 1985					JUL				
21...	13:10	5130	0.0	570	08...	12:20	2710	26.0	590
MAR					AUG				
06...	10:15	5020	0.5	470	19...	12:15	508	24.0	600
05489000 CEDAR CREEK NEAR BUSSEY, IOWA (LAT 41 13 09N LONG 092 54 38W)									
OCT 1984					APR 1985				
29...	15:05	96	11.0	350	16...	14:30	72	17.5	620
DEC					MAY				
12...	13:10	52	0.5	700	28...	14:00	26	21.0	680
JAN 1985					JUL				
21...	15:00	31	0.0	675	08...	14:45	7.7	28.0	470
MAR					AUG				
07...	12:10	414	1.5	370	19...	14:10	6.1	24.0	530
05489500 DES MOINES RIVER AT OTTUMWA, IOWA (LAT 41 00 39N LONG 092 24 40W)									
OCT 1984					MAY 1985				
15...	16:45	2510	18.0	644	13...	13:45	7820	19.0	625
NOV					JUN				
26...	13:00	2420	6.0	638	24...	13:30	3920	22.0	654
MAR 1985					AUG				
11...	12:30	9090	5.0	445	05...	14:15	1210	26.0	650
APR					SEP				
01...	15:00	6260	7.0	495	16...	15:00	2390	21.0	6411

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
05490500 DES MOINES RIVER AT KEOSAUQUA, IOWA (LAT 40 43 40N LONG 091 57 34W)				
OCT 1984				
19...	11:15	10500	12.0	319
NOV				
29...	10:45	3500	5.0	653
MAR 1985				
06...	14:30	8150	3.0	371
MAY 1985				
16...	10:30	6590	17.0	624
AUG				
08...	10:15	770	23.5	534
06483500 ROCK RIVER NEAR ROCK VALLEY, IOWA (LAT 43 12 52N LONG 096 17 39W)				
OCT 1984				
10...	08:55	241	16.0	790
NOV				
21...	10:05	209	1.0	850
JAN 1985				
09...	09:35	154	0.0	850
FEB				
12...	11:40	47	0.0	945
MAR				
26...	15:40	562	10.0	795
APR 1985				
23...	14:35	8620	12.0	460
27...	14:45	12700	12.5	460
JUN				
18...	13:50	608	18.0	800
JUL				
31...	11:00	154	18.0	750
SEP				
10...	16:30	1100	19.0	820

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06486000 MISSOURI RIVER AT SIOUX CITY, IOWA (LAT 42 29 10N LONG 096 24 47W)				
OCT 1984				
05...	10:10	46000	15.0	780
11...	11:00	45000	16.0	750
15...	14:40	47400	14.5	750
18...	11:00	47100	12.0	790
22...	11:00	50200	10.0	700
25...	10:30	50200	9.5	730
29...	12:15	50300	7.5	690
NOV				
01...	11:30	19300	6.0	690
05...	10:45	47700	7.0	750
07...	10:20	48600	8.5	790
15...	13:00	46100	5.5	825
21...	13:10	48200	3.0	795
25...	10:30	47500	5.5	825
30...	12:35	48200	4.5	780
DEC				
05...	13:25	34000	0.5	750
12...	13:25	25900	1.0	760
28...	12:50	22700	0.0	850
JAN 1985				
08...	12:30	21300	0.0	810
23...	17:15	22100	0.0	810
29...	11:50	225000	0.0	800
FEB				
22...	12:10	22000	0.5	740
26...	10:30	23200	0.0	750
MAR				
06...	11:20	22600	0.0	625
12...	12:00	28900	2.0	681
19...	14:00	32900	11.0	650
26...	11:30	33200	--	750
APR				
01...	12:45	31900	5.0	700
04...	13:00	34200	7.0	760
11...	10:40	31700	10.0	830
15...	12:40	30900	13.0	800
18...	13:25	30400	15.0	795
22...	10:50	39700	15.0	675
25...	11:20	30100	12.0	720
29...	11:45	27400	17.0	900
MAY				
02...	09:50	31700	16.0	850
07...	13:00	30900	17.0	830
08...	11:25	31200	17.0	830
MAY 1985				
09...	10:20	32700	18.0	830
13...	11:55	33000	17.0	740
20...	10:50	30500	19.5	690
23...	09:25	32100	--	740
28...	11:50	32000	21.5	785
30...	10:20	32800	20.0	780
JUN				
03...	12:00	38100	18.5	720
06...	09:40	31500	20.0	780
10...	11:25	33000	21.0	800
13...	11:10	33100	19.0	780
17...	11:15	31200	21.0	750
25...	14:10	31100	24.5	760
28...	11:15	35800	21.5	790
JUL				
02...	11:15	35600	25.5	720
05...	10:00	33500	23.0	840
08...	11:00	30700	24.0	720
11...	11:00	31500	25.0	790
15...	10:50	32100	24.0	730
18...	09:20	34200	25.0	780
23...	08:00	32000	24.0	770
26...	10:15	32500	25.5	780
29...	11:25	32100	24.5	775
AUG				
01...	09:20	32900	21.5	800
05...	11:15	32400	24.5	800
09...	11:00	32300	26.5	740
13...	10:35	32500	23.0	720
16...	11:00	32500	22.0	755
20...	11:40	32500	21.0	750
23...	11:10	32300	23.0	695
26...	14:45	31700	22.0	755
29...	11:45	32700	22.0	750
SEP				
03...	12:15	33000	29.0	790
05...	10:50	32800	24.0	800
09...	12:35	30900	19.0	775
12...	09:30	31900	19.0	750
16...	11:15	32600	19.5	760
19...	13:30	32000	22.0	750
23...	10:45	33000	15.0	775
26...	09:55	31100	14.0	750

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06600000 PERRY CREEK AT 38TH STREET, SIOUX CITY, IOWA (LAT 42 32 05N LONG 096 24 35W)									
OCT 1984					MAY 1985				
18...	13:00	28	10.0	790	06...	16:30	33	15.0	830
NOV					JUN				
19...	13:40	17	2.0	750	17...	14:20	23	20.5	750
JAN 1985					JUL				
08...	15:30	12	0.0	850	29...	19:10	11	22.0	700
FEB					SEP				
13...	14:00	10	0.0	800	09...	15:30	15	18.0	775
25...	15:10	17	7.0	795					
06600100 FLOYD RIVER AT ALTON, IOWA (LAT 42 58 55N LONG 096 00 03W)									
OCT 1984					MAR 1985				
10...	15:30	37	17.0	945	27...	09:45	69	11.0	860
NOV					MAY				
20...	14:40	53	1.5	675	08...	14:15	214	17.0	870
JAN 1985					JUL				
10...	12:20	34	0.0	950	31...	16:40	26	20.0	850
FEB					SEP				
11...	14:30	6.1	0.0	1200	11...	12:15	88	19.0	940
06600300 WEST BRANCH FLOYD RIVER NEAR STRUBLE, IOWA (LAT 42 55 15N LONG 096 10 30W)									
OCT 1984					JUN 1985				
15...	15:35	31	16.0	1050	18...	09:50	52	15.5	1000
NOV					JUL				
21...	13:20	25	3.0	950	30...	14:35	32	19.0	900
FEB 1985					SEP				
12...	15:10	9.9	0.0	1100	10...	13:00	71	18.5	990
MAR									
26...	11:10	37	12.0	1150					
06600500 FLOYD RIVER AT JAMES, IOWA (LAT 42 34 36N LONG 096 18 43W)									
OCT 1984					MAY 1985				
09...	13:10	205	17.0	890	06...	14:00	1060	17.0	900
NOV					JUN				
10...	11:25	261	0.5	675	17...	16:55	415	22.0	920
JAN 1985					JUL				
09...	11:25	127	0.0	1150	31...	11:05	150	20.0	850
MAR					SEP				
25...	12:45	240	8.0	850	10...	10:30	388	18.5	910
06601200 - MISSOURI RIVER AT DECATUR, NEBR. (LAT 42 00 26 LONG 096 14 29)									
OCT , 1984					JUN , 1985				
11...	1230	47800	17.0	790	04...	1125	35800	18.5	775
18...	1320	50800	13.0	695	12...	1150	34000	18.5	780
24...	1105	51100	9.0	750	18...	1045	33500	20.5	770
NOV					26...	1000	33100	24.0	805
01...	0955	51400	8.0	800	JUL				
07...	1315	50700	13.0	625	02...	1030	34500	25.5	790
15...	1215	48000	6.0	745	10...	1315	32000	27.0	800
22...	1315	55300	5.0	840	17...	1030	32700	27.0	610
30...	1510	45200	--	750	23...	1230	32700	25.5	800
MAR , 1985					29...	1015	32800	24.5	790
28...	1125	37600	7.0	765	AUG				
APR					06...	1125	32600	25.0	740
03...	1235	33300	10.0	745	14...	1010	32900	23.0	750
10...	1225	31000	9.0	800	21...	1150	32600	22.0	730
17...	1020	29700	12.0	860	27...	1000	31700	23.0	750
25...	1030	40800	13.0	650	SEP				
30...	1100	28500	16.0	850	05...	1130	31600	25.0	770
MAY					11...	1030	30900	21.0	750
07...	1120	31600	18.0	800	18...	1350	32000	21.0	805
15...	1150	36900	15.0	745	25...	1205	32900	15.0	720
22...	0950	23300	20.0	675					
29...	1045	33500	21.5	790					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06602020 WEST FORK DITCH AT HORNICK, IOWA (LAT 42 13 37N LONG 096 04 40W)				
OCT 1984				
30...	11:35	119	7.5	675
DEC				
11...	10:20	133	0.5	675
JAN 1985				
22...	15:30	72	0.0	590
MAR				
05...	12:00	730	0.0	265
APR 1985				
10...	15:00	778	15.5	800
23...	15:15	3960	12.0	740
MAY				
20...	14:40	596	18.0	420
JUL				
01...	10:15	174	25.0	500
AUG				
21...	12:10	76	22.0	700
06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA (LAT 41 57 52N LONG 095 59 30W)				
OCT 1984				
31...	10:30	211	7.5	710
JAN 1985				
24...	12:20	153	0.5	870
MAR				
12...	14:10	271	6.0	600
APR				
09...	15:20	299	10.0	840
24...	11:35	5480	12.0	280
29...	13:15	1310	17.0	675
MAY 1985				
22...	14:25	679	21.0	700
JUL				
02...	13:00	294	28.0	720
31...	13:10	166	20.5	680
AUG				
19...	16:30	152	26.5	700
06605000 OCHEYEDAN R NR SPENCER, IOWA (LAT 43 07 44N LONG 095 12 37W)				
NOV 1984				
05...	16:30	62	5.0	690
DEC				
18...	11:50	83	0.0	285
JAN 1985				
29...	10:00	17	0.0	900
MAR				
11...	17:00	1390	3.0	760
APR 1985				
15...	19:15	267	14.0	670
MAY				
28...	18:15	361	21.0	660
JUN				
09...	15:15	118	28.0	700
AUG				
21...	18:40	26	21.0	650
06605850 L SIOUX R AT LINN GROVE, IOWA (LAT 42 53 24N LONG 095 14 30W)				
NOV 1984				
05...	13:20	200	5.0	680
JAN 1985				
16...	16:10	121	0.0	700
24...	13:40	79	0.0	1000
MAR				
11...	12:10	2820	3.0	1180
APR				
16...	11:00	1090	12.0	700
MAY 1985				
29...	10:30	1280	21.5	660
JUL				
09...	18:30	383	29.0	680
AUG				
22...	14:20	183	22.0	660
06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA (LAT 42 28 20N LONG 095 47 49W)				
DEC 1984				
11...	15:45	422	1.0	750
JAN 1985				
23...	09:55	260	0.0	620
MAR				
27...	14:45	1510	11.0	580
APR				
23...	18:30	7570	12.0	360
24...	11:00	8500	13.0	380
MAY				
09...	14:30	2670	19.0	700
JUN				
26...	11:30	1100	25.0	695
SEP				
11...	15:30	1420	20.0	710
06607200 MAPLE RIVER AT MAPLETON, IOWA (LAT 42 09 28N LONG 095 48 27W)				
OCT 1984				
30...	10:25	222	7.0	690
DEC				
12...	13:30	230	0.0	580
JAN 1985				
23...	13:20	93	0.0	420
MAR				
05...	14:30	946	0.0	295
APR 1985				
10...	12:20	439	13.5	690
MAY				
21...	09:30	737	19.0	620
JUL				
01...	14:25	497	28.0	600
06607500 LITTLE SIOUX RIVER NR. TURIN, IOWA (LAT 41 57 52N LONG 095 58 21W)				
OCT 1984				
31...	13:45	838	8.0	730
JAN 1985				
22...	12:30	568	0.0	680
MAR				
12...	12:15	3870	4.0	370
APR				
09...	12:30	27900	7.5	750
23...	15:30	5500	18.0	450
24...	13:50	7940	16.0	420
29...	10:30	10400	16.0	575
MAY 1985				
22...	10:50	3930	19.0	650
JUL				
02...	09:10	1980	28.0	630
31...	10:35	599	20.0	690
AUG				
19...	13:00	521	24.5	700

MISCELLANEOUS WATER-QUALITY DATA

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
	06608500		SOLDIER RIVER AT PISGAH, IOWA (LAT 41 49 52N LONG 095 55 50W)						
OCT 1984					APR 1985				
11...	16:30	175	17.0	740	08...	12:20	189	8.0	665
NOV					MAY				
13...	11:45	167	5.5	710	21...	15:30	245	20.0	640
JAN 1985					JUL				
02...	11:50	--	0.0	600	23...	11:45	109	24.5	640
FEB					AUG				
06...	10:30	122	0.0	750	20...	10:45	89	21.0	660
MAR									
05...	14:20	145	1.0	510					
	06609400		BOYER R NR DENISON, IOWA (LAT 42 00 00N LONG 095 23 00W)						
NOV 1984					JUN 1985				
14...	14:00	17	12.0	700	11...	14:00	306	17.0	530
MAR 1985					JUL				
20...	11:30	149	11.0	840	23...	16:20	111	29.0	660
APR					SEP				
30...	11:30	506	16.0	700	03...	12:45	86	28.0	840
	06609500		BOYER RIVER AT LOGAN, IOWA (LAT 41 38 33N LONG 095 46 57W)						
OCT 1984					APR 1985				
02...	13:30	221	14.0	740	29...	11:10	702	16.0	700
NOV					JUN				
13...	14:30	288	12.0	600	12...	15:30	472	19.5	620
JAN 1985					JUL				
02...	15:00	302	0.0	650	24...	15:25	195	30.0	635
FEB					AUG				
06...	13:40	223	0.0	850	20...	13:00	115	24.5	700
MAR									
21...	13:15	268	13.0	700					
	06610000		MISSOURI RIVER AT OMAHA, NEBRASKA (LAT 41 15 32N LONG 095 55 20W)						
OCT 1984					MAY 1985				
03...	11:50	48600	13.0	780	06...	10:30	41900	17.0	830
10...	12:15	47700	16.0	740	10...	10:00	39000	20.0	780
15...	13:00	52100	17.0	775	13...	08:35	38100	15.0	800
18...	11:45	53100	13.0	750	16...	09:00	46700	15.0	680
22...	10:15	56000	10.0	780	20...	10:00	42200	18.0	790
24...	09:35	56100	10.0	800	23...	13:25	41400	--	760
29...	12:50	54600	15.0	750	JUN				
NOV					05...	10:05	41100	17.0	690
01...	12:00	56400	9.5	850	10...	12:40	39900	22.5	725
05...	14:15	55500	14.0	750	13...	10:00	38500	18.5	760
09...	10:30	54900	10.0	805	17...	09:45	39500	22.0	780
13...	10:15	52900	6.5	820	20...	09:30	35700	21.0	770
19...	12:30	54600	6.0	850	24...	11:30	37500	22.0	768
26...	11:20	56600	9.0	810	27...	10:50	37400	26.0	780
29...	09:30	54800	6.0	710	JUL				
DEC					03...	09:30	38400	27.5	800
03...	09:40	51100	3.0	750	08...	09:40	36800	25.0	775
17...	11:00	43300	1.5	460	11...	10:35	36600	26.0	770
JAN 1985					17...	11:20	37000	25.5	770
07...	12:30	27200	1.5	830	22...	09:30	36800	25.5	575
FEB					25...	10:15	36000	26.5	760
19...	12:00	25600	--	700	29...	09:10	35000	26.0	700
25...	12:30	27000	3.0	800	AUG				
MAR					01...	09:15	35900	23.5	800
06...	13:30	33100	3.0	610	05...	10:15	35400	24.5	760
11...	09:15	31800	5.0	655	08...	09:50	34400	26.0	700
18...	09:15	38400	6.0	650	12...	10:50	34600	23.5	810
25...	09:15	36900	7.5	655	15...	11:35	35600	23.5	775
APR					19...	09:40	35300	24.0	790
01...	09:30	38400	7.0	660	22...	10:45	35000	23.0	780
04...	10:00	36500	9.0	675	27...	12:30	34300	22.0	748
08...	09:45	40000	8.0	790	28...	11:30	33300	23.5	790
11...	14:00	37900	13.0	760	SEP				
15...	09:45	38000	9.0	1000	03...	10:25	35500	25.0	775
18...	12:45	35600	17.0	875	12...	14:00	35600	20.5	775
25...	08:55	64700	14.0	990	16...	14:30	36900	18.5	755
MAY					19...	10:00	35500	22.0	800
01...	10:40	40300	16.0	760	23...	11:10	38700	17.0	720
02...	10:20	44700	18.0	800	26...	11:05	36500	15.0	775
					30...	11:30	37600	--	780

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06807000		**MISSOURI RIVER AT NEBRASKA CITY, NEBR. (LAT 40 40 55N LONG 095 50 48W)**		
OCT 1984				
02...	11:55	51900	13.0	780
12...	11:35	55400	17.0	800
16...	11:40	60300	16.0	710
19...	14:45	66300	12.0	750
26...	12:00	66200	10.0	845
NOV				
02...	12:05	63400	7.0	800
09...	11:25	58900	11.0	810
16...	11:00	64100	7.0	800
23...	10:55	64900	4.0	800
30...	11:40	62300	5.0	750
DEC				
10...	11:50	41200	4.0	790
FEB 1985				
20...	12:20	32000	2.5	800
27...	11:00	40500	2.5	730
MAR				
07...	10:15	44200	5.0	655
14...	12:30	46400	6.0	695
20...	10:30	46900	9.5	695
26...	10:05	43900	11.0	660
APR				
01...	10:20	46500	6.0	705
04...	10:20	45700	10.0	750
08...	10:20	47300	8.0	750
11...	10:30	46200	10.5	750
15...	13:00	43500	16.0	800
18...	10:40	41000	17.0	800
26...	10:50	71000	14.0	540
30...	15:40	57100	14.0	620
MAY				
07...	11:10	51200	18.0	750
09...	11:10	56300	21.0	750
13...	13:30	45200	19.0	750
16...	12:30	79500	17.0	625
20...	13:15	58600	19.0	760
MAY 1985				
23...	10:30	52600	21.0	750
29...	13:00	48400	22.0	760
JUN				
10...	10:45	47100	22.5	775
14...	10:20	41700	20.0	790
17...	10:15	44700	23.0	740
20...	10:30	42200	22.5	700
24...	10:50	41400	23.0	750
28...	13:15	48300	24.5	750
JUL				
01...	10:15	47600	24.0	750
05...	12:30	44400	25.5	750
08...	10:40	37500	26.0	805
11...	09:50	38700	28.0	790
16...	15:20	36000	27.5	780
18...	10:30	34300	26.5	800
22...	10:45	41700	26.5	760
25...	10:45	39000	26.0	780
29...	10:00	351000	27.0	760
AUG				
01...	09:25	36800	24.0	795
05...	10:30	41200	28.0	720
08...	10:30	38500	26.0	790
12...	10:00	36200	27.0	710
15...	10:00	40300	24.0	740
19...	10:20	40300	23.0	750
22...	10:55	39600	23.0	755
27...	11:40	39000	23.0	705
29...	11:45	36000	24.5	580
SEP				
04...	11:00	39000	25.0	755
09...	12:40	40100	20.5	750
12...	13:00	40900	21.5	700
23...	10:35	43300	17.0	750
26...	10:00	41100	16.0	750
06807410		**WEST NISHNABOTNA RIVER AT HANCOCK, IOWA (LAT 41 23 24N LONG 095 22 17W)**		
OCT 1984				
23...	11:35	220	9.0	610
DEC				
03...	13:20	124	0.0	610
JAN 1985				
31...	13:30	185	0.0	365
FEB				
26...	11:50	304	4.0	525
APR				
02...	16:35	290	14.0	540
MAY 1985				
14...	11:00	377	16.0	560
JUN				
24...	13:00	865	22.5	260
AUG				
18...	10:40	122	18.5	650
SEP				
10...	10:40	97	19.5	645
06808500		**WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA (LAT 40 52 23N LONG 095 34 48W)**		
OCT 1984				
23...	16:30	577	11.0	670
DEC				
04...	15:45	319	0.0	610
FEB 1985				
07...	14:00	377	0.0	620
MAR				
14...	14:20	464	9.0	620
MAY 1985				
02...	13:00	736	19.0	520
29...	15:30	604	24.0	470
JUL				
24...	12:55	322	26.0	590
AUG				
13...	09:25	256	22.0	595
SEP				
17...	12:10	229	21.0	675
06809210		**EAST NISHNABOTNA RIVER NEAR ATLANTIC, IOWA (LAT 41 20 47N LONG 095 04 31W)**		
OCT 1984				
31...	12:45	104	8.5	575
FEB 1985				
07...	13:15	74	0.0	560
26...	14:20	248	4.0	360
APR 1985				
02...	12:30	151	11.0	520
14...	14:00	158	18.5	560
AUG				
15...	08:10	60	18.0	490
SEP				
16...	13:10	40	20.0	520
06809500		**EAST NISHNABOTNA RIVER NEAR RED OAK, IOWA (LAT 41 00 41N LONG 095 14 07W)**		
OCT 1984				
24...	12:35	259	8.0	570
DEC				
04...	11:15	136	0.0	480
JAN 1985				
28...	12:10	206	0.0	540
FEB				
28...	13:30	330	6.0	400
APR 1985				
05...	12:50	404	9.0	455
AUG				
12...	14:05	127	26.0	500
SEP				
17...	10:35	91	20.0	510

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA (LAT 40 37 57N LONG 095 37 32W)									
OCT 1984					MAY 1985				
23...	12:55	986	9.0	555	08...	11:45	1240	23.0	545
NOV					22...	13:35	965	22.0	500
14...	11:30	982	9.0	552	29...	10:50	992	21.5	465
20...	15:30	944	4.0	540	JUL				
DEC					22...	15:30	819	27.0	425
20...	12:00	973	0.0	400	AUG				
FEB 1985					23...	14:15	543	24.5	542
19...	14:00	772	0.0	530	SEP				
MAR					24...	12:00	542	13.5	410
11...	12:45	1110	9.0	490					
APR									
15...	12:15	909	19.0	500					
06811840 TARKIO RIVER AT STANTON, IOWA (LAT 40 58 52N LONG 095 06 32W)									
OCT 1984					APR 1985				
24...	09:40	4.0	7.0	540	03...	14:50	14	16.0	440
DEC					05...	10:20	10	7.0	440
03...	17:30	1.6	1.0	470	JUN				
JAN 1985					26...	15:30	3.3	26.0	430
28...	14:30	2.7	0.0	480	JUL				
FEB					12...	11:30	0.61	24.0	440
28...	11:30	9.2	2.0	350	SEP				
					17...	12:30	0.29	22.0	520

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06813500 MISSOURI RIVER AT RULO, NEBRASKA (LAT 40 03 14N LONG 095 25 12W)									
OCT 1984					MAY 1985				
05...	13:45	51400	15.0	800	02...	12:00	59900	16.0	650
10...	11:45	58000	17.0	720	09...	10:50	48500	20.0	695
18...	13:30	65800	15.0	760	14...	12:15	54000	20.0	720
23...	11:10	66800	10.5	800	21...	13:30	62300	19.5	720
31...	14:45	66700	--	725	JUN				
NOV					03...	12:50	48300	20.5	750
08...	12:35	61300	9.0	840	10...	16:15	47000	23.0	755
21...	14:30	61200	0.0	900	18...	10:30	41100	23.0	690
28...	14:25	64000	6.0	760	26...	11:30	44900	26.0	700
DEC					JUL				
11...	14:30	41100	3.0	880	01...	11:45	49000	25.0	735
FEB 1985					09...	11:45	38200	28.0	750
19...	11:45	32000	2.5	845	17...	11:30	37500	28.5	760
25...	11:45	40600	2.5	700	29...	12:05	41000	26.0	750
MAR					30...	11:15	37600	27.0	780
05...	13:50	50600	4.0	615	AUG				
13...	11:45	43600	6.0	600	07...	12:15	42700	26.0	705
19...	11:30	45000	8.0	700	13...	10:45	39200	25.5	740
27...	10:50	47200	11.0	700	19...	10:45	41600	23.0	700
APR					27...	11:45	34700	24.0	750
02...	13:40	46900	8.0	690	SEP				
09...	12:25	49000	8.0	675	05...	11:35	38700	27.0	640
16...	13:20	44300	15.0	780	10...	13:10	38000	25.5	700
24...	10:45	65900	18.0	700	17...	10:15	44600	20.0	720
					24...	12:00	45300	17.5	750
06817000 NODAWAY RIVER AT CLARINDA, IOWA (LAT 40 44 19N LONG 095 00 47W)									
NOV 1984					MAY 1985				
07...	09:40	105	10.0	410	29...	10:55	82	20.0	380
DEC					JUL				
19...	11:55	94	0.0	355	24...	09:00	57	24.5	360
JAN 1985					AUG				
30...	10:00	86	0.0	405	06...	13:15	1290	27.0	182
FEB					13...	14:55	48	28.0	395
22...	14:30	2390	1.0	209	SEP				
MAR					19...	10:45	21	24.0	350
14...	09:25	245	4.0	400					
APR									
18...	09:30	130	18.0	400					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06818750		**PLATTE RIVER NEAR DIAGONAL, IOWA (LAT 40 46 02N LONG 094 24 46W)**		
NOV 1984				
06...	13:00	3.3	10.0	410
DEC				
18...	13:40	19	--	325
JAN 1985				
29...	10:30	3.8	0.0	640
MAR				
13...	13:30	34	5.0	375
APR				
17...	12:00	14	21.0	400
MAY 1985				
28...	12:45	7.1	24.5	470
JUL				
23...	10:50	5.4	24.0	420
AUG				
14...	12:05	7.0	22.0	360
SEP				
18...	13:30	2.2	25.0	530
06819185		**EAST FORK 102 RIVER AT BEDFORD, IOWA (LAT 40 39 40N LONG 094 42 58W)**		
NOV 1984				
06...	15:50	1.5	10.0	495
DEC				
18...	16:55	1.1	--	470
JAN 1985				
29...	13:00	0.62	0.0	625
MAR				
13...	16:35	6.1	7.0	415
APR				
17...	16:15	2.0	20.0	485
MAY 1985				
28...	16:35	1.0	27.0	455
JUL				
28...	14:00	1.6	31.0	460
AUG				
14...	09:50	74	27.0	205
SEP				
18...	16:25	0.65	25.0	365
06897950		**ELK CREEK NEAR DECATUR CITY, IOWA (LAT 40 43 18N LONG 093 56 19W)**		
OCT 1984				
17...	09:45	1.3	8.0	310
NOV				
27...	14:30	1.3	6.0	492
JAN 1985				
10...	09:30	0.93	0.0	681
FEB				
21...	09:45	522	0.0	170
APR 1985				
02...	15:45	20	16.0	400
MAY				
14...	15:15	2.6	21.0	489
JUN				
26...	09:30	1.0	24.5	389
06898000		**THOMPSON RIVER AT DAVIS CITY, IOWA (LAT 40 38 25N LONG 093 48 29W)**		
OCT 1984				
17...	14:45	49	12.0	378
NOV				
27...	12:00	24	5.0	482
JAN 1985				
09...	16:00	15	0.0	482
FEB				
20...	16:45	101	0.0	375
APR				
02...	13:15	216	8.5	398
MAY 1985				
14...	12:15	54	18.0	480
JUN				
25...	16:00	474	24.0	209
AUG				
06...	17:00	21	24.0	336
SEP				
17...	14:30	4.5	23.0	500
06898400		**WELDON RIVER NEAR LEON, IOWA (LAT 40 41 45N LONG 093 38 07W)**		
OCT 1984				
17...	15:30	5.7	14.0	371
NOV				
27...	10:05	1.5	5.0	433
JAN 1985				
09...	13:45	4.0	0.0	649
FEB				
26...	12:45	33	0.0	340
APR				
01...	11:30	21	8.5	450
MAY 1985				
14...	10:15	6.5	18.0	473
JUN				
25...	13:30	15	29.0	268
AUG				
06...	13:00	0.98	25.0	381
SEP				
17...	13:15	0.33	24.0	462
06903400		**CHARITON RIVER NEAR CHARITON, IOWA (LAT 40 57 12N LONG 093 15 37W)**		
OCT 1984				
16...	13:45	7.2	16.0	664
NOV				
26...	15:45	1.1	8.0	649
JAN 1985				
08...	13:45	6.8	0.0	563
FEB				
19...	16:30	26	0.0	515
APR				
01...	18:15	70	7.0	418
MAY 1985				
13...	16:15	6.6	17.0	368
JUN				
24...	17:00	920	20.0	162
AUG				
05...	17:30	34	25.0	224
SEP				
17...	09:15	0.54	18.0	502

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (US/CM)
06903700	SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IOW (LAT 40 48 02N LONG 093 11 32								
OCT 1984					MAY 1985				
16...	15:45	4.0	14.0	412	15...	11:15	34	17.0	376
NOV					JUN				
28...	11:15	3.0	2.5	511	25...	10:15	83	22.0	236
JAN 1985					AUG				
09...	10:15	20	0.0	533	06...	10:30	4.9	23.0	356
FEB					SEP				
20...	09:45	39	0.0	447	17...	11:15	0.85	20.0	481
APR									
03...	10:15	38	9.5	439					
06903900	CHARITON RIVER NEAR RATHBUN, IOWA (LAT 40 49 22N LONG 092 53 22W)								
NOV 1984					MAY 1985				
28...	16:30	358	6.5	266	15...	15:30	9.0	18.0	259
JAN 1985					JUN				
10...	15:15	373	1.0	234	26...	16:45	8.0	24.5	276
FEB					AUG				
21...	13:45	18	4.0	366	07...	16:30	559	25.0	272
APR					SEP				
03...	13:00	172	10.0	258	18...	14:15	14	19.0	290
06904010	CHARITON R NR MOULTON, IOWA (LAT 40 41 30N LONG 092 46 15W)								
OCT 1984					JUN 1985				
18...	14:00	835	15.0	256	25...	14:45	70	27.0	288
NOV					AUG				
28...	14:00	460	6.0	337	07...	14:00	615	25.0	282
APR 1985					SEP				
03...	15:45	244	11.0	339	18...	11:30	28	22.0	327
MAY									
15...	13:30	64	18.0	447					

BENTON COUNTY

420319N091540102. Local number, 84-9-28 DBCC2.
LOCATION.--Lat 42°03'19", long 91°54'01", Hydrologic Unit 07080205, approximately 3 mi south and 1.5 mi west of the Town of Shellsburg. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in limestone of Devonian age and dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artersian water well, diameter 6 in., to 171.7 ft, 4 in. to 260 ft, depth 590 ft, cased to 260 ft, open hole 265 to 590 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface is 915 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of 4 in. casing, 1.10 ft above land-surface datum.
REMARKS.--Parker's Grove cemetary well. Cement plug 260 to 265 ft. 59.7 ft of open Devonian rock rock reported to yield little, if any, water.
PERIOD OF RECORD.--April 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 150.73 ft below land-surface datum, Apr. 14, 1975; lowest measured, 166.92 ft below land-surfae datum, Aug. 9, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	WATER LEVEL	DATE	WATER LEVEL
APR 14	150.73	JUN 24	158.30

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	160.78	MAR 30	160.00	JUL 12	154.00

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 11	166.41	JUN 21	166.59	JUL 6	166.48	AUG 9	166.92
JUN 9	166.01						

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	161.60	JAN 11	160.20	MAY 30	157.44	SEP 12	158.83
NOV 4	160.27	MAR 22	160.57	JUL 18	158.01		
DEC 16	158.96	MAY 2	158.33	AUG 17	158.24		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	158.88	MAR 13	157.90	JUN 5	156.48	SEP 13	157.98
NOV 9	159.27	APR 3	158.39	JUL 9	157.57		
DEC 7	157.41	MAY 9	156.45	AUG 8	158.43		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	158.16	JAN 8	160.92	MAR 5	160.24	JUL 18	162.59
NOV 6	159.25	FEB 4	161.24	MAY 21	161.23	SEP 17	163.18
DEC 7	159.33						

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	164.24	FEB 3	164.67	MAR 18	164.15	SEP 8	164.56

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL
SEP 27	159.98

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 17	156.94	AUG 24	158.71

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	159.58	APR 17	159.02	AUG 7	156.62	SEP 11	157.85

420319N091540102. Local number, 84-9-28 DBCC2.--continued.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	158.91	MAR 5	159.32	MAY 2	157.68	AUG 21	161.03

420731N092083801. Local number, 85-11-33 CCBC1.
LOCATION.--Lat 42°07'31", long 92°08'38", Hydrologic Unit 07080205, approximately 1 mi south of the of Garrison, just east of County Road V-56. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Cedar Valley: in limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 0.75 in., depth 237 ft, cased 170 ft, slotted below cement plug, open hole 170 to 237 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 912 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of 6 in. casing, 2.20 ft above land-surface datum.
REMARKS.--Garrison 170 well. 3 ft cement plugs from 97 to 100 ft and 237 to 240 ft.
PERIOD OF RECORD.--June 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 60.18 ft below land-surface datum, Apr. 19, 1983; lowest measured, 64.80 ft below land-surface datum, Jan. 29, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 29	64.80	AUG 9	63.53

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SETEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	61.55	MAR 24	61.68	MAY 30	62.20	AUG 22	63.08
JAN 21	62.48	MAY 2	61.72	JUL 18	61.76	SEP 14	62.90

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	62.36	MAR 23	60.56	JUN 5	62.12	SEP 13	62.59
NOV 9	63.03	APR 3	60.84	JUL 9	62.47		
DEC 7	62.44	MAY 8	61.44	AUG 8	62.81		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	62.78	JAN 8	63.02	MAR 5	63.44	JUL 18	63.41
NOV 5	63.03	FEB 4	62.78	MAY 21	62.41	SEP 17	63.06
DEC 7	62.85						

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	63.22	FEB 3	63.39	MAR 18	63.41

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	61.44	APR 19	60.18	AUG 24	61.81

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	62.93	APR 17	62.34	AUG 7	62.83	SEP 11	62.63

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	62.33	MAR 7	62.32	MAY 2	62.38	AUG 21	63.88

BENTON COUNTY

420731N092083802. Local number, 85-11-33 CCBC2.
LOCATION.--Lat 42°07'31", long 92°08'38", Hydrologic Unit 07080205, approximately 1 mi south of the Town of Garrison, just east of County Road V-56. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in limestone of Devonian age and dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 0.75 in., depth 538 ft, cased to 340 ft, open hole 340 to 538 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 912 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of 6 in. casing, 2.20 ft above land-surface datum.
REMARKS.--Garrison 340 well. 106 ft of open Devonian rock reported to yield little, if any, water. 3 ft cement plug 237 to 240 ft.
PERIOD OF RECORD.--October 1975, June 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, e88.00 ft below land-surface datum, Oct. 17, 1975; lowest measured, 104.94 ft below land-surface datum, Aug. 21, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	WATER LEVEL
OCT 17	e88.00

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 29	95.93	AUG 9	98.45

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	94.20	MAR 24	95.17	MAY 30	94.65	AUG 22	95.14
JAN 21	90.50	MAY 2	94.72	JUL 18	94.71	SEP 14	95.59

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	94.88	MAR 23	92.40	JUN 5	92.42	SEP 13	94.86
NOV 9	93.68	APR 3	92.46	JUL 9	93.26		
DEC 7	92.48	MAY 9	92.03	AUG 8	94.11		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	94.86	DEC 7	92.86	MAR 5	88.26	JUL 18	96.60
NOV 6	93.21	FEB 4	93.14	MAY 21	91.16	SEP 17	93.03

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	92.71	FEB 3	95.20	MAR 18	95.37

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	94.23	APR 19	90.27	AUG 24	94.18

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	93.75	APR 17	93.12	AUG 7	93.95	SEP 11	94.69

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	92.08	MAR 7	100.67	MAY 2	103.65	AUG 21	104.94

e Estimated

BENTON COUNTY

420731N092083803. Local number, 85-11-33 CCBC3.
LOCATION.--Lat 42°07'31", long 92°08'38", Hydrologic Unit 07080205, approximately 1 mi south of the Town of Garrison, just east of County Road V-56. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Cedar Valley: in limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in., depth 97 ft, cased to 90 ft, open hole 90 to 97 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface is 912 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of 6 in. casing, 2.20 ft above land-surface datum.
REMARKS.--Garrison 109 well. 3 ft cement plug 97 to 100 ft.
PERIOD OF RECORD.--June 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 60.63 ft below land-surface datum, Mar. 23, 1979; lowest measured, 64.86 ft below land-surface datum, Jun. 29, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	WATER LEVEL
JUN 29	64.86

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL
JUL 18	62.82	SEP 14	62.90

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	62.22	DEC 7	62.46	APR 13	60.92	SEP 13	62.59
NOV 9	63.11	MAR 23	60.63				

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	62.85	JAN 8	63.02	MAR 5	63.68	JUL 18	62.84
NOV 5	63.08	FEB 4	62.87	MAY 21	62.55	SEP 17	63.10
DEC 7	62.95						

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	63.26	FEB 3	63.40	MAR 18	63.15

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	61.46	APR 19	60.85	AUG 24	62.49

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	62.97	APR 17	62.39	AUG 7	62.94	SEP 11	62.70

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	62.32	MAR 7	62.34	MAY 2	62.45	AUG 21	63.91

BENTON COUNTY

421326N091522701. Local number, 86-9-34 AAAD1.
LOCATION.--Lat 42°13'29", long 91°52'19", Hydrologic Unit 07080205, next to the water tower in the Town of Urbana. Owner: Town of Urbana.
AQUIFER.--Silurian-Devonian and Ordovician: open from limestone of Devonian age into limestone and dolomite of the Platteville formation of Ordovician age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 8 in., depth 1,033 ft, cased to 142 ft, open hole 142 to 1,033 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface is 940 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Nipple on plate welded to casing, 3.15 ft above land-surface datum.
REMARKS.--None
PERIOD OF RECORD.--September 1984 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 142.00 ft below land-surface datum, Dec. 11, 1984; lowest measured, 148.25 ft below land-surface datum, Sep. 23, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL
SEP 10	142.05	SEP 18	143.40

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	143.63	JAN 24	142.69	APR 25	144.38	JUL 22	144.29
NOV 8	143.29	FEB 19	143.05	MAY 21	143.35	AUG 20	145.15
DEC 11	142.00	MAR 21	142.87	JUN 20	142.89	SEP 23	148.25

BUENA VISTA COUNTY

423646N095020101. Local number, 90-36-13 ADDA1.
LOCATION.--Lat 42°36'46", long 95°02'01", Hydrologic Unit 07100006, north of the Illinois Central Gulf Railroad tracks, approximately 1 mi west and 0.5 mi north of the Town of Newell. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Mississippian: in limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 338 ft, cased to 338 ft, perforated 323 to 338 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,281 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.30 ft above land-surface datum.
REMARKS.--Well D-26. 8.5 ft of casing perforated in Pleistocene glacial drift.
PERIOD OF RECORD.--May 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 99.34 ft below land-surface datum, May 13, 1985; lowest measured, 101.82 ft below land-surface datum, Aug. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	99.48	MAR 13	99.34	MAY 29	99.44	AUG 6	96.93

423618N095194511. Local number, 90-38-16 DDDD11.
LOCATION.--Lat 42°36'18", long 95°19'45", Hydrologic Unit 10230005, north of County Highway C-65, 2 mi east of the Village of Hanover. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 497 ft, cased to 497 ft, perforated 346.5 to 349.5 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,365 ft above Naitonal Geodetic Vetical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--Well D-25.
PERIOD OF RECORD.--April 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 187.54 ft below land-surface datum, Mar. 12, 1985; lowest measured, 189.53 ft below land-surface datum, Dec. 6, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	187.67	MAR 12	187.54	MAY 23	187.57	AUG 22	187.69

BUENA VISTA COUNTY

424023N095571401. Local number, 91-35-26 BCCC1.
LOCATION.--Lat 42°40'23", long 95°57'14", Hydrologic Unit 07100006, approximately 2.7 mi west and 0.5 mi north of the Village of Varina. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 357 ft, cased to 357 ft, perforated 338 to 347 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,291 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--Well D-24. Paleozoic rock at 347 ft.
PERIOD OF RECORD.--December 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.40 ft below land-surface datum, Jan. 7, 1980; lowest measured, 45.07 ft below land-surface datum, Aug. 26, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	42.64	MAR 11	43.46	MAY 29	44.25	AUG 26	45.07

425233N094545001. Local number, 93-35-13 ADAA1.
LOCATION.--Lat 42°52'33", long 94°54'50", Hydrologic Unit 07100006, south of the Chicago, Rock Island and Pacific Railroad track, approximately 3.5 mi east and 0.75 mi north of the Town of Marathon. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 1.50 in., depth 381 ft, cased to 381 ft, perforated 350 to 360 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,330 ft above National Geodetic Vetrical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--Well D-36.
PERIOD OF RECORD.--February 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 131.65 ft below land-surface datum, May 6, 1985; lowest measured, 133.67 ft below land-surface datum, Sept. 11, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 18	131.76	MAR 12	131.72	MAY 6	131.65	JUL 25	132.02

CALHOUN COUNTY

422846N094375601. Local number, 89-32-33 CABC1.
LOCATION.--Lat 42°28'46", long 94°37'56", Hydrologic Unit 07100006, west edge of the picnic area on the east side of North Twin Lake, approximately 5 mi north of Rockwell City. Owner: Iowa State Conservation Commission.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 53 ft, lined with tile.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,222 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Hole in concrete platform, 0.50 ft above land-surface datum.
REMARKS.--1948 to 1955 records published in Geological Survey Water-Supply Papers. Well 33F1. A public-supply well prior to 1978.
PERIOD OF RECORD.--October 1948 to June 1959, December 1961 to August 1966, July 1968 to November 1971, October 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.82 ft below land-surface datum, May 9, 1984; lowest measured, 32.12 ft below land-surface datum, Aug. 8, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 13	24.10	MAR 13	21.00	MAY 28	21.50	AUG 21	31.70

CARROLL COUNTY

420335N094521501. Local number, 84-35-25 BDAD1.
LOCATION.--Lat 42°03'35", long 94°52'15", Hydrologic Unit 07100007, near the city water plant, Carroll. Owner: City of Carroll.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 8 in., depth 120 ft, cased to 100 ft, open hole 100 to 120 ft.
INSTRUMENTATION.--Intermittent measurement reported by personnel from the City of Carroll.
DATUM.--Elevation of land-surface datum is 1,275 ft above National Geodetic Vetrical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--City test No. 1.
PERIOD OF RECORD.--September 1939 to December 1949, May 1952 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.55 ft below land-surface datum, Sept. 8, 1945; lowest measured, 85.50 ft below land-surface datum, Jul. 15, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	61.19	MAR 21	60.88	JUN 12	60.30	AUG 19	63.20
NOV 8	59.13	APR 8	59.42	20	61.80	27	64.75
14	60.91	15	60.62	28	64.35	SEP 4	63.60
26	57.25	MAY 1	60.74	JUL 17	72.00	9	62.95
DEC 10	58.66	13	61.22	22	67.30	17	63.50
JAN 6	57.52	17	60.78	30	66.00	27	61.64
FEB 18	59.57	22	63.80	AUG 13	62.60		

421058N094582701. Local number, 85-35-7 CCCC1.
LOCATION.--Lat 42°10'58", long 94°58'27", Hydrologic Unit 07100006, approximately 1 block north of Iowa Highway 217, next to the town maintenance building, Breda. Owner: Town of Breda.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled municipal artesian water well, diameter 10 in., depth 340 ft, cased to 320 ft, screen 320 to 340 ft.
INSTRUMENTATION.--Quarterly measurement with chalked taped by USGS personnel.
DATUM.--Altitude of land-surface datum is 1,362 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Vent pipe, 1.60 ft above land-surface datum.
REMARKS.--Town well No. 3. Water levels affected by pumping. Original depth 349 ft. 1942 to 1955 Records published in Geological Survey Water-Supply Papers.
PERIOD OF RECORD.--March 1942 to August 1966, March 1968 to November 1971, June 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 187.70 ft below land-surface datum, Mar. 25, 1948; lowest measured, 250.40 ft below land-surface datum, May 24, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 4	199.42	FEB 25	199.37	MAY 29	202.94	AUG 22	199.48

CERRO GORDO COUNTY

430806N093164501. Local number, 96-21-13 BCCB1.
LOCATION.--Lat 43°08'06", long 93°16'45", Hydrologic Unit 07080203, south of the County Home, just north of Iowa Highway 106, east of the City of Clear Lake. Owner: Mason City and Clear Lake Railroad.
AQUIFER.--Cedar Valley: in limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 5 in., depth 198 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,165 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of well curb, 1.30 ft above land-surface datum.
REMARKS.--Casing information not available.
PERIOD OF RECORD.--November 1940 to August 1971, March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.73 ft below land-surface datum, Jan. 28, 1951; lowest measured, 17.26 ft below land-surface datum, Nov. 18, 1955.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 28	6.04	MAR 18	6.24	JUL 10	5.77

CERRO GORDO COUNTY

430658N093281001. Local number, 96-22-20 CADC1.
LOCATION.--Lat 43°06'58", long 93°28'10", Hydrologic Unit 07080203, east of County Road S-14 in Ventura Heights. Owner: W. Baine and H. Elder.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in., depth 126 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,249 ft above National Geodetic Vertical Datum of 1929, from topgraphic map. Measuring point: Hole in side of casing, 0.87 ft above land-surface datum.
REMARKS.--Casing information not available. Formerly Boy Scouts of America.
PERIOD OF RECORD.--July 1940 to August 1971, March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.65 ft below land-surface datum, Mar. 25, 1942; lowest measured, 51.37 ft below land-surface datum, Aug. 4, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 28	43.63	MAR 18	44.21	JUL 10	44.82

CHEROKEE COUNTY

423833N095365701. Local number, 90-40-6 BDCD1.
LOCATION.--Lat 42°38'33", long 95°36'57", Hydrologic Unit 10230003, approximately 3.1 mi east of U.S. Highway 59 and 0.55 mi north of Iowa Highway 31 along the Illinois Central Railroad track. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 1.25 in., depth 253 ft, cased to 252 ft, sandpoint 252 to 253 ft.
INSTRUMENTATION.--Quarterly measurements with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,182 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--Well D-6.
PERIOD OF RECORD.--December 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.38 ft below land-surface datum, Aug. 27, 1983; lowest measured, 37.22 ft below land-surface datum, Sept. 10, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	32.18	JAN 8	32.43	APR 2	32.60	JUL 9	31.67

424348N095231601. Local number, 91-39-1 ADAD1.
LOCATION.--Lat 42°43'48", long 95°23'16", Hydrologic Unit 10230005, approximately 2 mi east and 0.5 mi north of the Town of Aurelia at the Larson Lake County Park. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Cambrian-Ordovician: in dolomite of Ordovician age and sandstone of Cambrian age.
WELL CHARACTERISITICS.--Drilled observation artesian water well, diameter 6 in. to 236 ft, 5 in. to 486 ft, 2 in. to 1,545 ft, depth 1,545 ft, cased to 1,126 ft, open hole 1,126 to 1,545 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,370 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.20 ft above land-surface datum.
REMARKS.--Well D-28.
PERIOD OF RECORD.--September 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 190.70 ft below land-surface datum, Dec. 6, 1984; lowest measured, 194.47 ft below land-surface datum, May 5, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	189.65	MAR 12	192.19	MAY 13	191.87	AUG 22	192.23

CHEROKEE COUNTY

424348N095231602. Local number, 91-39-1 ADAD2.
LOCATION.--Lat 42°43'48", long 95°23'16", Hydrologic Unit 10230005, approximately 2 mi east and 0.5 mi north of the Town of Aurelia at the Larson Lake County Park. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 4 in., depth 340 ft, cased to 340 ft, perforated 235 to 240 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,370 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.30 ft above land-surface datum.
REMARKS.--Well D-29.
PERIOD OF RECORD.--September 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 189.15 ft below land-surface datum, May 13, 1985; lowest measured, 194.15 ft below land-surface datum, Aug. 24, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	192.15	MAR 12	189.44	MAY 13	189.15	AUG 22	189.48

424132N095480211. Local number, 91-42-16 DDDD11.
LOCATION.--Lat 42°41'32", long 95°48'02", Hydrologic Unit 10230004, approximately 2 mi north of the Village of Fielding at the junction of County Roads L-36 and C-44. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 390 ft, cased to 390 perforated 386 to 390 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.50 ft above land-surface datum.
REMARKS.--Well D-11.
PERIOD OF RECORD.--March 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 152.75 ft below land-surface datum, June 27, 1984; lowest measured, 155.50 ft below land-surface datum, Dec. 15, 1980.

WATER LEVEL IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	153.33	JAN 8	153.57	APR 2	153.20	JUL 9	153.32

424802N095331201. Local number, 92-40-10 BDDD1.
LOCATION.--Lat 42°48'02", long 95°33'12", Hydrologic Unit 10230003, along U.S. Highway 59, approximately 2.5 mi north of the City of Cherokee. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2.50 in., depth 300 ft, cased to 300 ft, perforated 114 to 118 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,210 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.30 ft above land-surface datum.
REMARKS.--Well D-5.
PERIOD OF RECORD.--April 1980 to October 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.05 ft below land-surface datum, June 27, 1984; lowest measured, 29.19 ft below land-surface datum, May 5, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	27.06	JAN 8	26.95	APR 1	26.89	JUL 9	27.09

CLAYTON COUNTY

424023N091291201. Local number, 91-5-30 BBBB1.
LOCATION.--Lat 42°40'23", long 91°29'12", Hydrologic Unit 07060006, 5 mi northwest of the City of Edgewood, or 2 mi northwest of the junction of Iowa Highways 3 and 13 east of Strawberry Point. Owner: Harold Knight.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 36 in., depth 36 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,233 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Hole in pump base at land-surface datum.
REMARKS.--Casing information not available.
PERIOD OF RECORD.--June 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.10 ft below land-surface datum, Apr. 5, 1983; lowest measured, 30.68 ft below land-surface datum, Jan. 12, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	20.59	NOV 29	20.44	FEB 7	21.64	MAY 2	20.22

424057N091320001. Local number, 91-6-22 ACAC1.
LOCATION.--Lat 42°40'57", long 91°32'00", Hydrologic Unit 07060006, southeast corner of the junction of Iowa Highways 3 and 13, Strawberry Point. Owner: City of Strawberry Point.
AQUIFER.--Silurian-Devonian and Ordovician: in dolomite of Silurian age and Upper Ordovician age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 16 in., 0-130 ft, 12 in. 130-161 ft, depth 492 ft, cased to 161 ft with a 10 in. liner 229-370 ft, open hole 161 to 229 ft and 370 to 492 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1,219 ft above National Geodetic Vertical datum of 1929, from topographic map. Measuring point: Top of recorder platform, 2.10 ft above land-surface datum.
REMARKS.--City well No. 2.
PERIOD OF RECORD.--March 1963 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 114.38 ft below land-surface datum, May 9, 1973; lowest recorded, 133.18 ft below land-surface datum, Feb. 4, 1968.

WATER LEVEL, IN FEET, BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	123.13	----	124.25	124.24	125.12	124.84	122.30	123.30	125.00	125.88	126.63	127.17
10	123.55	----	124.45	124.57	125.46	123.85	122.03	123.45	125.33	126.30	127.20	127.68
15	123.01	----	124.72	124.69	125.38	123.79	122.01	123.73	125.16	126.47	127.12	127.62
20	e123.50	----	124.40	124.90	125.48	123.78	122.45	124.17	125.42	126.67	127.35	127.80
25	123.63	123.85	----	125.20	125.00	123.85	122.98	124.22	125.63	126.55	127.28	127.53
EOM	123.60	124.00	124.25	125.30	124.62	122.50	123.26	124.38	126.05	126.78	127.17	127.57

WTR YEAR 1985 HIGHEST 121.97 APR 10, 1985 LOWEST 128.06 SEP 13, 1985

e Estimated.

430156N091182901. Local number, 95-4-22 BCBD1.
LOCATION.--Lat 43°01'56", long 91°18'29", Hydrologic Unit 07060001, approximately 2 mi north of the junction of U.S. Highway 18 and U.S. Highway 52-Iowa Highway 13, near Spook Cave. Owner: Gerald Mielke.
AQUIFER.--St. Peter: in sandstone of Middle Ordovician age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 6 in., depth 49 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 940 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--Casing information not available. Water level for Mar. 3, 1984, 22.51 ft.
PERIOD OF RECORD.--October 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.98 ft below land-surface datum, Dec. 7, 1983; lowest measured, 27.88 ft below land-surface datum, Mar. 4, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	23.35	FEB 6	23.55	MAY 1	22.95

CLAYTON COUNTY

425940N091194701. Local number, 95-4-32 DDDD1.
LOCATION.--Lat 42°59'40", long 91°19'47", Hydrologic Unit 07060004, 1 mi west of the junction of U.S. Highway 52 and Iowa Highway 13, or northeast of the Town of Farmersburg. Owner: Milton and Willis Meier.
AQUIFER.--St. Peter: in sandstone of Middle Ordovician age.
WELL CHARACTERISTICS.--Drilled stock artesian water well, diameter 6 in., depth 380 ft (reported).
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,090 ft above National Geodetic Vertical datum of 1929, from topographic map. Measuring point: Plug in pump base, 1.00 ft above land-surface datum.
REMARKS.--Casing information not available. Water level form Mar. 7, 1984, 78.10 ft.
PERIOD OF RECORD.--October 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 74.08 ft below land-surface datum, July 10, 1984; lowest measured, 126.56 ft below land-surface datum, Jan. 13, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	79.50	FEB 6	81.94	MAY 1	83.75

CRAWFORD COUNTY

421031N095225611. Local number, 85-39-16 ADDD11.
LOCATION.--Lat 42°10'31", long 95°22'56", Hydrologic Unit 10230007, approximately 2.5 mi east and 0.5 mi north of the Town of Schleswig. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Mississippian: in limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 561 ft, cased to 561 ft, perforated 543 to 561 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,370 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.14 ft above land-surface datum.
REMARKS.--Well WC-7B.
PERIOD OF RECORD.--June 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 305.58 ft below land-surface datum, Feb. 8, 1983; lowest measured, 307.64 ft below land-surface datum, Oct. 4, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 17	307.43	APR 2	306.77	JUL 8	306.76

DELAWARE COUNTY

422029N091144302. Local number, 87-3-18 CBCD2.
LOCATION.--Lat 42°20'37", long 91°14'47", Hydrologic Unit 07060006, behind the municipal utilities building in downtown Hopkinton. Owner: Town of Hopkinton.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 8 in., depth 86 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface is 863 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of recorder platform, 2.25 ft above land-surface datum.
REMARKS.--Casing information not available. Water levels affected by pumping of a nearby well.
PERIOD OF RECORD.--December 1984 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.10 ft below land-surface datum, Jan. 18, 1985; lowest measured, 22.29 ft below land-surface datum, Aug. 13, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	21.15	JAN 18	21.10	AUG 9	21.91	AUG 13	22.29
18	21.30	AUG 5	21.78				

DES MOINES COUNTY

404844N091142701. Local number, 69-3-6 AABA1.
LOCATION.--Lat 40°48'44", long 91°14'27", Hydrologic Unit 07080104, at the Iowa Army Ammunition Plant, near the Town of Middleton. Owner: Iowa Ordnance Plant.
AQUIFER.--St. Peter: in sandstone of Middle Ordovician age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 16 in., depth 1,209 ft, cased to 855 ft, open hole 855 to 1,209 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by observer.
DATUM.--Elevation of land-surface datum is 717 ft above National Geodetic Vertical of 1929, from topographic map. Measuring point: Top of platform, 1.61 ft above land-surface datum.
REMARKS.--Plant well No. 3.
PERIOD OF RECORD.--March 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 108.35 ft below land-surface datum, Mar. 9 1985; lowest measured, 201.75 ft below land-surface datum, Aug. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 24	115.39	MAR 9	108.35	AUG 3	109.97	SEP 7	115.39
FEB 10	114.39	JUL 6	109.69				

404753N091142501. Local number, 69-3-6 DDCD1.
LOCATION.--Lat 40°47'53", long 91°14'25", Hydrologic Unit 07080104, at the Iowa Army Ammunition Plant, near the Town of Middleton. Owner: Iowa Ordnance Plant.
AQUIFER.--Cedar Valley and Mississippian: in limestone of Devonian and Mississippian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 19 in., depth 675 ft, cased to 75 ft, open hole 75 to 675 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by observer.
DATUM.--Elevation of land-surface datum is 699 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of platform, 1.91 ft above land-surface datum.
REMARKS.--Plant well No. 2.
PERIOD OF RECORD.--March 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 74.46 ft below land-surface datum, Apr. 18, 1975; lowest measured, 83.19 ft below land-surface datum, Apr. 26, 1950.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 24	80.37	MAR 9	80.19	AUG 3	79.97	SEP 7	79.94
FEB 10	80.09	JUL 6	79.63				

EMMET COUNTY

432927N094345501. Local number, 100-32-11 DDDD1.
LOCATION.--Lat 43°29'27", long 94°34'55", Hydrologic Unit 07100003, at Okamanpedan Lake Reserve State Park, north of the Town of Dolliver. Owner: State of Iowa.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled public-supply artesian water well, diameter 6 in., depth 277 ft.
INSTRUMENTATION.--Quarterly mesurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,233 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Plug in pump base, 0.61 ft above land-surface datum.
REMARKS.--Casing information not available.
PERIOD OF RECORD.--November 1939 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 59.60 ft below land-surface datum, Dec. 19, 1946; lowest measured, 77.86 ft below land-surface datum, Aug. 27, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	68.66	MAR 12	70.18	MAY 28	68.49	AUG 21	68.87

GREENE COUNTY

415449N094161501. Local number, 82-29-18 CAAA1.
LOCATION.--Lat 41°54'49", long 94°16'15", Hydrologic Unit 07100006, approximately 0.5 mi south and 4 mi east of the Village of Cooper and just south of County Road E-57. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Pennsylvanian: in sandstone of Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 101 ft, cased to 100 ft, perforated 89 to 100 ft, open hole 100 to 101 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 960 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--Well WC-116.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.41 ft above land-surface datum, Jul. 5, 1983; lowest measured, 4.52 ft below land-surface datum, Nov. 5, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTMEBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	3.89	APR 2	3.35

415449N094173201. Local number, 82-30-13 CABA1.
LOCATION.--Lat 41°54'49", long 94°17'32", Hydrologic Unit 07100006, approximately 0.5 mi south and 3 mi east of the Village of Cooper and just south of County Road E-57. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Pennsylvanian and Mississippian: in sandstone of Pennsylvanian age and limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 230 ft, cased to 230 ft, perforated 209 to 230 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,035 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.45 ft above land-surface datum.
REMARKS.--Well WC-118. Original depth 245 ft, casing plugged at 230 ft.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 66.79 ft below land-surface datum, Jul. 5, 1983; lowest measured, 71.48 below land-surface datum, Sep. 2, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	70.82	APR 2	70.55	JUL 8	71.21

GRUNDY COUNTY

422605N092560001. Local number, 88-18-15 DBBB1.
LOCATION.--Lat 42°26'05", long 92°56'00", Hydrologic Unit 07080205, west of the corner of Monroe and 4th Streets and west of the high school, Wellsburg. Owner: City of Wellsburg.
AQUIFER.--Yellow Springs Group: in limestone and dolomite of Upper Devonian age.
WELL CHARACTERISTICS.--Drilled public-emergency-supply artesian water well, diameter 12 in., depth 280 ft, cased to 128 ft, open hole 128 to 280 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,060 ft above National Geodetic Vertical Datum of 1929, ft, topographic map. Measuring point: Edge of vent pipe, 1.25 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--September 1960 to August 1971, May 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.45 ft below land-surface datum, Feb. 22, 1983; lowest measured, 96.81 ft below land-surface datum, Sep. 27, 1960.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 2	35.34	MAR 26	34.49	JUN 26	34.92

HARRISON COUNTY

413838N095462001. Local number, 79-42-19 AADB1.
LOCATION.--Lat 41°38'38", long 95°46'20", Hydrologic Unit 10230007, approximately 0.5 mi east of 22, 22, 1983; Town of Logan, near U.S. Highway 30. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Mississippian: in dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 628 ft, cased to 628 ft, perforated 588 to 628 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,045 ft above National Geodetic Vertical Datum of 1929, from topogarphic map. Measuring point: Top of casing, 4.40 ft above land-surface datum.
REMARKS.--Well WC-22.
PERIOD OF RECORD.--November 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.70 ft below land-surface datum, Mar. 20, 1985; lowest measured, 16.37 ft below land-surface datum, Jun. 3, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	9.77	FEB 4	6.10	MAY 1	4.90	JUL 24	5.23
NOV 14	8.95	MAR 20	4.70	JUN 11	4.78	SEP 3	5.31
DEC 27	6.49						

414955N096000601. Local number, 81-44-18 AADA1.
LOCATION.--Lat 41°49'55", long 96°00'06", Hydrologic Unit 10230003, approximately 1.8 mi northeast of the Town of Little Sioux, just west of Iowa Highway 301. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Pennsylvanian: in sandstone of Pennsylvania age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 126 ft, cased to 126 ft, perforated 108 to 126 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,075 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.80 ft above land-surface datum.
REMARKS.--Well WC-23. Original depth 209 ft, casing plugged 126 ft.
PERIOD OF RECORD.--January 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 52.33 ft below land-surface datum, Jul. 12, 1984; lowest measured, 64.07 ft below land-surface datum, Jan. 15, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	59.60	JAN 7	60.43	APR 1	62.05	JUL 11	60.89

HENRY COUNTY

405810N091330502. Local number, 71-6-9 ABAC2.
LOCATION.--Lat 40°58'10", long 91°33'05", Hydrologic Unit 07080107, in the city water plant on Adams Street, Mount Pleasant. Owner: City of Mount Pleasant.
AQUIFER.--Jordan: in strata of Cambrian and Ordovician age.
WELL CHARACTERISTICS.--Drilled municipal artesian water well, diameter 20 to 19 in., depth 1,860 ft, cased to 623 ft, open hole 623 to 1,860 ft.
INSTRUMENTATION.--Quarterly measurement with airline by USGS personnel.
DATUM.--Elevation of land-surface datum is 725 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Hole in pump base, 2.25 ft above land-surface datum.
REMARKS.--City well No. 4. Water levels affected by pumping.
PERIOD OF RECORD.--April 1946 to December 1950, January 1953 to November 1955, December 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 132.00 ft below land-surface datum, May 5, 1946; lowest measured, nonpumping, 198.75 ft below land-surface datum, Jan. 7, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	p193.32	MAR 12	174.92	MAY 9	p198.02	SEP 24	p194.25

p Well being pumped.

HENRY COUNTY

410852N091394301. Local number, 73-7-9 AABD1.
LOCATION.--Lat 41°08'48", long 91°39'48", Hydrologic Unit 07080107, north of Main Street near the water tower, Wayland. Owner: Town of Wayland.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 4 ft, depth 52 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 735 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of cement cover, 0.21 ft above land-surface datum.
REMARKS.--Casing information not available.
PERIOD OF RECORD.--September 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.30 ft below land-surface datum, Sep. 1, 1965; lowest measured, 14.69 ft below land-surface datum, Feb. 2, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTMEBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	11.54	MAR 12	8.65	MAY 9	9.66	SEP 24	12.38
SEP 24	12.38						

IDA COUNTY

422215N095390811. Local number, 87-41-5 CCCC11.
LOCATION.--Lat 42°22'15", long 95°39'08", Hydrologic Unit 10230005, approximately 0.75 mi east and 6.5 mi south of the Village of Cushing. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 490 ft, cased to 490 ft, perforated 301 to 305 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,344 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.72 ft above land-surface datum.
REMARKS.--Well D-10. Original depth, 510 ft, cemented back to 490 ft.
PERIOD OF RECORD.--June 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 202.55 ft below land-surface datum, Jun. 4, 1980; lowest measured, 206.50 ft below land-surface datum, May 7, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YERA OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	203.50	JAN 8	203.52	APR 2	203.96	JUL 10	203.97

423107N095383201. Local number, 89-41-13 CCCC1.
LOCATION.--Lat 42°31'07", long 95°38'32", Hydrologic Unit 10230003, at a roadside park on County Road D-15, approximately 1.5 mi east and 3.5 mi north of the Village of Cushing. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Mississippian: in limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 469 ft, cased to 468 ft, sand point 465 to 468 ft, open hole 468 to 469 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.50 ft above land-surface datum.
REMARKS.--Well D-9.
PERIOD OF RECORD.--December 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 186.45 ft below land-surface datum, Jul. 27, 1983; lowest measured, 207.14 ft below land-surface datum, Apr. 8, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	188.09	JAN 8	188.87	APR 2	189.09	JUL 10	188.67

JACKSON COUNTY

420842N090165701. Local number, 85-6E-29 ACAD1.
LOCATION.--Lat 42°08'42", long 90°16'57", Hydrologic Unit 07060005, 1 mi east of U.S. Highway 52, 2 mi southeast of the Village of Green Island beside the Chicago, Milwaukee, St. Paul and Pacific Railroad tracks in the Upper Mississippi River Wildlife and Fish Refuge. Owner: U.S. Geological Survey.
AQUIFER.--Mt. Simon: in sandstone of Early Cambrian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in. depth 1,804 ft, cased to 1,725 ft, screened 1,705 to 1,725 ft, open hole 1,725 to 1,804 ft.
INSTRUMENTATION.--Monthly measurement with engineers rule by USGS personnel.
DATUM.--Elevation of land-surface datum is 610 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Mark on angle iron attached to well house, 6.05 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--May 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.41 ft above land-surface datum, Apr. 12, 1984; lowest measured, 7.67 ft above land-surface datum, Sept. 6, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	+7.85	FEB 21	+8.87	MAY 20	+8.87	AUG 19	+8.61
NOV 6	+8.23	MAR 14	+8.76	JUN 12	+8.58	SEP 11	+8.36
DEC 4	+7.92	APR 16	+8.77	JUL 23	+8.55		

420842N090165703. Local number, 85-6E-29 ACAD3.
LOCATION.--Lat 42°08'42", long 90°16'57", Hydrologic Unit 07060005, 1 mi east of U.S. Highway 52, 2 mi southeast of the Village of Green Island beside the Chicago, Milwaukee, St. Paul and Pacific Railroad tracks in the Upper Mississippi River Wildlife and Fish Refuge. Owner: U.S. Geological Survey.
AQUIFER.--St. Peter and Prairie du Chien: in sandstone and dolomite of Middle and Early Ordovician age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 910 ft, cased to 624.2 ft, screened 604.2 to 624.2 ft, open hole 624.2 to 910 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 610 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.25 ft below land-surface datum, Apr. 16, 1985; lowest measured 9.90 ft below land-surface datum, Aug. 31, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	8.15	JAN 29	6.97	APR 16	6.25	JUL 23	7.32
NOV 6	8.68	FEB 21	6.75	MAY 20	6.34	AUG 19	7.64
DEC 4	7.92	MAR 14	6.44	JUN 12	6.77	SEP 11	7.97

420842N090165704. LOCAL NUMBER, 85-6E-29 ACAD4.
LOCATION.--Lat 42°08'42", long 90°16'57", Hydrologic Unit 07060005, 1 mi east of U.S. Highway 52, 2 mi southeast of the Village of Green Island beside the Chicago, Milwaukee, St. Paul and Pacific Railroad tracks in the Upper Mississippi River Wildlife and Fish Refuge. Owner: U.S. Geological Survey.
AQUIFER.--Galena: in dolomite of Ordovician age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 400 ft, cased to 319.6 ft, screened 299.6 to 319.6 ft, open hole 319.6 to 400 ft.
INSTRUMENTATION.--Monthly measurements with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 610 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.22 ft below land-surface datum Apr. 22, 1983; lowest measured, 17.30 ft below land-surface datum, Sept. 6, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	17.17	JAN 29	15.66	APR 16	12.73	JUL 23	16.98
NOV 6	14.59	FEB 21	16.03	MAY 20	13.88	AUG 19	16.85
DEC 4	15.97	MAR 14	13.69	JUN 12	15.37	SEP 11	17.05

JASPER COUNTY

414205N092592001. Local number, 80-18-31 ABBB1.
LOCATION.--Lat 41°42'05", 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: in materials 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 National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of cement platform, 0.70 ft land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--February 1940 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.67 ft below land-surface datum, Jun. 10, 1947; lowest measured, 27.15 ft below land-surface datum, Dec. 18, 1948.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	6.53	JAN 23	8.44	APR 18	6.86	JUL 10	13.61

414147N093035401. Local number, 80-19-33 ACAC1.
LOCATION.--Lat 41°41'47", long 93°03'54", Hydrologic Unit 07080105, 231 West 10th Street, Newton. Owner: John Coppess.
AQUIFER.--Jordan: in strata of Cambrian and Ordovician age.
WELL CHARACTERISTICS.--Drilled unused private artesian water well, diameter 12 to 6 in., depth 2,567 ft, cased to 1,750 ft, open hole 1,750 to 2,567 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 915 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Plug in cement well cover, 0.50 ft above land-surface datum.
REMARKS.--461 ft of the Prairie du Chien formation of Ordovician age, 262 ft of the St. Lawrence formation of Cambrian age, and 94 ft of Franconia sandstone of Cambrian age open.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 98.43 ft below land-surface datum, Jun. 14, 1966; lowest measured, 266.10 ft below land-surface datum, Jan. 27, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	246.80	JAN 23	234.10	APR 18	251.52	JUL 10	253.34

JOHNSON COUNTY

414107N091322901. Local number, 79-6-4 AAAA1.
LOCATION.--Lat 41°41'07", long 91°32'29", Hydrologic Unit 07080209, at Forest View Trailer Court, northern edge of Iowa City. Owner: Forest View Trailer Court.
AQUIFER.--Silurian-Devonian: in limestone of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 6 in., depth 280 ft, cased to 96 ft, open hole 96 to 280 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 735 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--Water levels affected by wells in the area pumping in late spring, summer, and early fall.
PERIOD OF RECORD.--May 1971 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 96.93 ft below land-surface datum, Mar. 23, 1979; lowest recorded, 146.01 ft below land-surface datum, Jul. 17, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	123.04	112.05	103.11	101.60	100.55	100.36	98.97	116.83	----	128.25	129.62	129.05
10	123.55	108.76	102.44	101.34	100.54	99.71	99.58	119.89	123.48	130.11	e129.65	130.37
15	123.04	106.83	102.13	101.24	100.48	99.89	100.83	120.53	124.22	130.11	e128.30	131.20
20	121.94	106.05	101.86	101.09	100.33	99.55	106.05	121.82	124.85	129.64	----	131.95
25	116.02	104.17	102.46	100.98	100.32	99.66	111.17	122.73	127.22	129.92	e127.50	131.59
EOM	113.64	103.31	101.97	100.78	100.27	98.82	114.57	----	127.75	129.50	128.40	129.48

WTR YEAR 1985 HIGHEST 98.71 MAR 28, 1985 LOWEST 132.12 SEP 24, 1985

e Estimated.

JOHNSON COUNTY

413925N091324001. Local number, 79-6-9 DDBC1.
LOCATION.--Lat 41°39'34", long 91°32'42", Hydrologic Unit 07080209, at the Quadrangle Dormitory, University of Iowa, Iowa City. Owner: University of Iowa.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 12 in., depth 430.5 ft, cased to 225 ft, open hole 225 to 430.5 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 714 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Hole in well cap, 1. 50 ft above land-surface datum.
REMARKS.--Water levels affected by nearby wells pumping in late spring, summer and early fall.
PERIOD OF RECORD.--April 1975 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 75.02 ft below land-surface datum, Mar. 15, 1979; lowest measured, 165.93 ft below land-surface datum, Jul. 13, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	101.91	JAN 31	84.75	APR 18	103.69	JUL 8	153.11
NOV 29	84.14	FEB 26	87.61	MAY 13	133.56	AUG 8	152.46
DEC 27	90.52	MAR 19	85.34	JUN 7	135.16	SEP 9	151.38

413955N091320303. Local number, 79-6-10 BDBC3.
LOCATION.--Lat 41°39'58", long 91°32'06", Hydrologic Unit 07080209, at the Currier Hall Dormitory, University of Iowa, Iowa City. Owner: University of Iowa.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 12 in., depth 425 ft, cased to 160 ft, open hole 160 to 425 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 707 ft above National Geodetic Vertical Datum of 1929, from from topographic map. Measuring point: Nipple welded to plate on top of casing, 7.94 ft below land-surface datum.
REMARKS.--Water levels affected by nearby wells pumping in late spring, summer, and early fall. Thirty-five ft of Devonian open.
PERIOD OF RECORD.--October 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.12 ft below land-surface datum, Apr. 23, 1973; lowest measured, 163.16 ft below land-surface datum, Jul. 14, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	91.17	FEB 26	69.86	MAY 13	143.19	JUL 8	156.23
NOV 29	72.43	MAR 19	68.83	JUN 7	127.34	AUG 8	157.72
JAN 31	69.27	APR 18	118.78	JUN 26	154.83	SEP 9	159.03

413844N091323201. Local number, 79-6-16 DDAD1.
LOCATION.--Lat 41°38'44", long 91°32'32", Hydrologic Unit 07080209, 1223 South Riverside Drive, Iowa City. Owner: Iowa City Community School District.
AQUIFER.--Silurian-Devonian: in limestone and dolomite of Devonian age and dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in., depth 363 ft, cased to 66.5 ft, open hole 66.5 to 363 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 652 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Nipple welded to plate on top of casing, 2.12 ft above land-surface datum.
REMARKS.--U.S.G.S.- I.G.S. warehouse well. Water levels affected by wells in the area pumping in late spring, summer, and early fall.
PERIOD OF RECORD.--April 1974 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.96 ft below land-surface datum, Apr. 11, 1979; lowest measured, 32.94 ft below land-surface datum, Jul. 15, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	23.72	JAN 31	13.28	APR 18	11.81	JUL 8	27.17
NOV 29	15.17	FEB 26	12.83	MAY 13	21.22	AUG 8	28.72
DEC 27	13.55	MAR 19	11.93	JUN 7	23.49	SEP 9	28.91

JOHNSON COUNTY

414315N091252001. Local number, 80-5-22 CBCB1.
LOCATION.--Lat 41°43'15", long 91°25'20", Hydrologic Unit 07080209, along the Chicago, Rock Island and Pacific Railroad track, southeast of the overpass on Rapid Creek Road over the track, approximately 5.50 mi northeast of the junction of Interstate 80 and Iowa Highway 1. Owner: Chicago, Rock Island and Pacific Railroad Co.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 1.25 in., depth 20 ft, cased to 18 ft, screened 18 to 20 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 753 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.20 ft above land-surface datum.
REMARKS.--At the site of the former Elmira depot.
PERIOD OF RECORD.--October 1941 to September 1956, January 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.78 ft below land-surface datum, Sep. 20, 1977; lowest measured, dry, Dec. 2-31, 1955 and Nov. 8 - Dec. 31, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	13.47	JAN 24	10.20	APR 25	9.36	JUL 22	11.89
NOV 20	10.55	FEB 19	10.66	MAY 21	9.81	AUG 20	13.00
DEC 20	10.81	MAR 21	9.30	JUN 20	10.75	SEP 23	14.02

414315N091252002. Local number, 80-5-22 CBCB2.
LOCATION.--Lat 41°43'15", long 91°25'20", Hydrologic Unit 07080209, along the Chicago, Rock Island and Pacific Railroad track, southeast of the overpass on Rapid Creek Road over the track, approximately 5.50 mi northeast of the junction of Interstate 80 and Iowa Highway 1. Owner: Chicago, Rock Island and Pacific Railroad Co.
AQUIFER.--Cedar Valley: in limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 5 in., depth 82 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 753 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.50 ft above land-surface datum.
REMARKS.--Casing information not available. 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, 8.15 ft below land-surface datum, Apr. 21, 1952; lowest measured, 21.05 ft below land-surface datum, Sep. 26, 1957.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	15.92	JAN 24	15.57	APR 25	15.47	JUL 22	17.62
NOV 20	15.66	FEB 19	15.92	MAY 21	16.15	AUG 20	18.42
DEC 20	15.49	MAR 21	15.11	JUN 20	16.80	SEP 23	18.76

414853N091425101. Local number, 81-7-19 BCBB1.
LOCATION.--Lat 41°48'53", long 91°42'51", Hydrologic Unit 07080208, approximately 0.75 mi west and 2.25 mi south of the Town of Swisher. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age and limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in., depth 535 ft, cased to 130 ft, open hole 130 to 535 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 745 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--U.S.G.S.-I.G.S. Plum Creek well.
PERIOD OF RECORD.--November 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 64.46 ft below land-surface datum, May 31, 1983; lowest recorded, 74.60 ft below land-surface datum, Sept. 13 and 14, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	69.88	69.97	69.75	-----	68.66	68.59	67.94	68.47	69.42	70.59	72.36	73.71
10	70.02	69.72	69.63	-----	68.80	68.27	68.29	68.71	69.79	71.16	72.84	74.17
15	69.36	69.86	69.56	-----	68.74	68.64	68.13	68.69	e69.88	71.49	73.15	74.46
20	69.90	70.38	-----	-----	68.68	68.66	68.10	68.72	-----	71.69	-----	74.46
25	69.89	69.71	-----	68.98	68.60	68.70	-----	68.87	70.38	71.85	73.52	74.48
EOM	69.95	69.59	-----	68.97	68.27	67.76	68.47	68.86	70.74	72.24	73.73	74.44

WTR YEAR HIGHEST 67.76 MAR 31, 1985 LOWEST 74.60 SEP 13 and 14, 1985

e Estimated

GROUND-WATER LEVELS

JONES COUNTY

415808N091160501. Local number, 83-4-25 CBBB1.
LOCATION.--Lat 41°58'08", long 91°16'05", Hydrologic Unit 07080103, 4 mi north of the Town of Mechanicsville and 1 mi west of County Road X-40. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in. to 41 ft, 5 in. to 517 ft, depth 517 ft, cased to 41 ft, open hole 41 to 517 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 807 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--White Oak Creek well.
PERIOD OF RECORD.--July 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.24 ft below land-surface datum, Apr. 3, 1979; lowest measured, 5.49 ft below land-surface datum, Jun. 29, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 13	2.30	MAR 19	2.29	MAY 21	3.23	AUG 21	4.85

LINN COUNTY

415422N091422601. Local number, 82-7-18 CDCD1.
LOCATION.--Lat 41°54'22", long 91°42'26", Hydrologic Unit 07080205, on 76th Avenue SW, approximately 1.5 mi west of U.S. Highway 218, Cedar Rapids. Owner: Lester Petrak.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 4 ft, depth 14 ft, cribbed with brick.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 835 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Base of recorder shelter, 0.25 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--July 1959 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.09 ft below land-surface datum, Aug. 4, 1968; lowest recorded, e11, 75 ft below land-surface datum, Feb. 8, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.08	4.25	e5.24	e4.55	5.99	3.79	4.51	5.35	6.85	8.28	9.68	10.39
10	9.21	3.34	5.45	e4.90	6.24	4.52	4.81	5.58	7.16	8.60	9.85	10.54
15	8.58	4.22	5.69	e5.10	6.59	4.65	4.95	5.48	7.25	8.85	10.01	10.69
20	4.99	4.68	4.61	e5.25	6.19	4.80	5.09	5.78	7.53	9.10	10.17	10.84
25	5.00	4.87	4.82	5.44	4.25	4.94	5.13	6.13	7.68	9.30	10.08	10.29
EOM	4.46	5.05	4.06	5.76	4.55	4.73	5.26	6.48	7.99	9.51	10.25	9.53

WTR YEAR 1985 HIGHEST 3.28 NOV 10, 1984 LOWEST 10.85 SEP 21, 1985

e Estimated.

415509N091461801. Local number, 82-8-20 ACBB1.
LOCATION.--Lat 41°55'09", long 91°46'18", Hydrologic Unit 070802005, approximately 1.5 mi southwest of the Town of Fairfax, just northwest of Iowa Highway 149. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in limestone of Devonian age and dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 5 in., depth 569 ft, cased to 100.5 ft, open hole 100.5 to 569 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 842 ft above National Geodetic Vertical Datum of 1929, from topogarphic map. Measuring point: Top of casing, 0.88 ft above land-surface datum.
REMARKS.--Rock Pile well.
PERIOD OF RECORD.--March 1974 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 96.70 ft below land-surface datum, Jun. 21, 1974; lowest measured, 108.37 ft below land-surface datum, Jul. 22 and 23, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	104.17	MAR 5	101.82	MAY 2	104.30	AUG 21	104.04

LINN COUNTY

415816N091393401. Local number, 83-7-28 ADDA1.
LOCATION.--Lat 41°58'16", long 91°39'34", Hydrologic Unit 07080205, 320 11th Avenue SE, Cedar Rapids. Owner: Robert Chadima.
AQUIFER.--Silurian-Devonian: in limestone of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 10 in., depth 420 ft, cased to 75 ft, open hole 75 to 420 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 735 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of recorder platform, 2.95 ft below land-surface datum.
REMARKS.--Formerly The Kacena Co., Inc.
PERIOD OF RECORD.--January 1962 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 51.10 ft below land-surface datum, Feb. 25, 1963; lowest recorded, 101.40 ft below land-surface datum, Jul. 27, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	95.60	94.33	93.47	93.24	92.88	93.57	-----	94.58	-----	95.05	96.01	97.00
10	95.76	93.87	93.35	93.37	93.02	93.17	-----	94.82	-----	95.29	96.48	97.59
15	94.77	93.72	93.50	93.26	93.13	93.62	-----	94.98	-----	95.44	96.63	97.88
20	95.13	94.16	93.47	93.25	93.10	93.51	-----	95.49	-----	95.71	97.00	97.89
25	95.00	93.23	93.66	93.23	93.18	93.61	94.29	95.26	e95.20	95.63	96.90	e97.50
EOM	94.55	93.26	93.25	93.31	93.15	-----	94.47	95.10	-----	96.04	97.10	-----

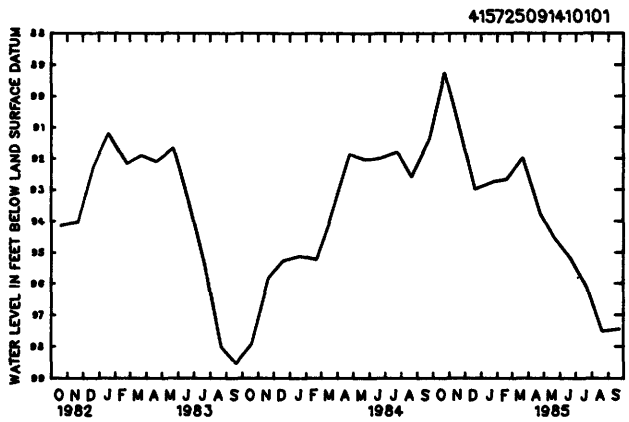
WTR YEAR 1985 HIGHEST 92.26 MAR 4, 1985 LOWEST 98.16 SEP 13, 1985

e Estimated.

415725N091410101. Local number, 83-7-32 ACDC1.
LOCATION.--Lat 41°57'25", long 91°41'01", Hydrologic Unit 07080205, northwest corner of 22nd Avenue SW and 11th Street SW, Cedar Rapids. Owner: Floyd Fetter.
AQUIFER.--Silurian-Devonian: in limestone of Silurian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 5 in., depth 282 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 805 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Plug in well cover at land-surface datum.
REMARKS.--Casing information not available.
PERIOD OF RECORD.--July 1940 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 75.80 ft below land-surface datum, Jan. 26, 1942; lowest measured, 107.00 ft below land-surface datum, Sept. 16, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	89.24	JAN 24	92.74	APR 25	93.79	JUL 22	96.11
NOV 20	90.98	FEB 19	92.66	MAY 21	94.53	AUG 20	97.52
DEC 20	92.98	MAR 21	91.98	JUN 20	95.16	SEP 23	97.44

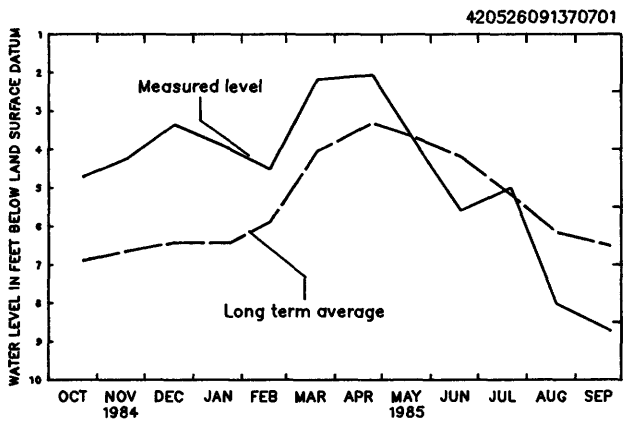


LINN COUNTY

420526N091370701. Local number, 84-7-13 BCBB1.
LOCATION.--Lat 42°05'26", long 91°37'07", Hydrologic Unit 07080206, approximately 0.25 mi south of the junction of County Roads W-58 and E-34, or approximately 3.75 mi north of the City of Marion. Owner: U.S. Geological Survey.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in., depth 17 ft, cased to 15 ft, screened 15 to 17 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 882 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.75 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--September 1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.93 ft below land-surface datum, May 18, 1982; lowest measured, 12.90 ft below land-surface datum, Dec. 3, 1956.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	4.71	JAN 24	3.99	APR 25	2.06	JUL 22	5.00
NOV 20	4.24	FEB 19	4.52	MAY 21	3.75	AUG 20	8.02
DEC 20	3.36	MAR 21	2.18	JUN 20	5.59	SEP 23	8.72



421149N091403301. Local number, 85-7-4 CCCC1.
LOCATION.--Lat 42°11'49", long 91°40'33", Hydrologic Unit 07080205, approximately 5 mi east of the Town of Center Point, north side of County Road E-16. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: in dolomite of Silurian age and limestone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in., cased to 41 ft, 5 in. liner 129 to 147 ft, depth 435 ft, open hole 41 to 129 ft and 147 to 435 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 912 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing at land-surface datum.
REMARKS.--Alice well.
PERIOD OF RECORD.--July 1973 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.06 ft below land-surface datum, Jun. 10, 1974; lowest measured, 32.87 ft below land-surface datum, Mar. 23, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 13	27.10	MAR 7	26.37	MAY 7	25.42	AUG 21	28.77

LYON COUNTY

431812N096302701. Local number, 98-48-16 DDAD1.
LOCATION.--Lat 43°18'12", long 96°30'27", Hydrologic Unit 10170203, approximately 3.5 mi east of the City of Canton, S.D., south of U.S. Highway 18. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 358 ft, cased to 358 ft, perforated 335 to 355 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personel.
DATUM.--Elevation of land-surface datum is 1,268 ft above National Geodetic Vertical Datum of 1929, from topogarphic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--Well D-20. Sioux quartzite from 353 to 358 ft.
PERIOD OF RECORD.--December 1978 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 93.40 ft below land-surface datum, Mar. 28, 1980 and May 6, 1980; lowest measured, 97.56 ft below land-surface datum, Dec. 9, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	96.08	JAN 8	96.57	APR 2	95.95	JUL 8	96.00

432140N095595301. Local number, 99-44-26 DDDD1.
LOCATION.--Lat 43°21'40", long 95°59'53", Hydrologic Unit 10170204, 1 mi north of the City of George, west of Iowa Highway 339. Owner: State of Iowa.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in., depth 38 ft, lined with tile.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Plug in well cover, 2.01 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1940 to June 1943, May 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.24 ft above land-surface datum, Apr. 24, 1984; lowest measured, 9.47 ft below land-surface datum, Oct. 24, 1940.

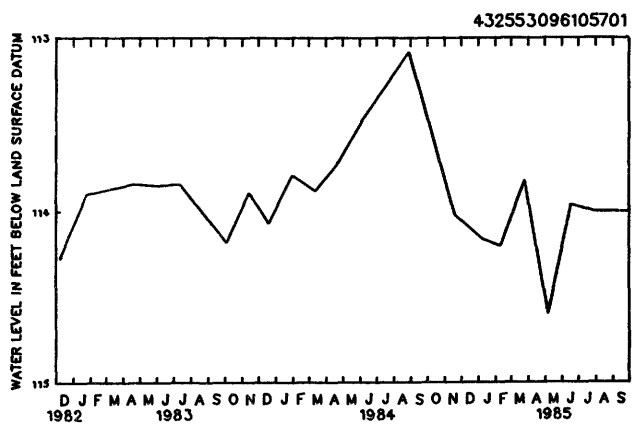
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 8	2.82	APR 2	0.60	JUL 8	2.49

432553N096105701. Local number, 99-45-5 ABAC1.
LOCATION.--Lat 43°25'53", long 96°10'55", Hydrologic Unit 10170204, 0.05 mi south of Iowa Highway 9 on 2nd Street, Rock Rapids. Owner: City of Rock Rapids.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 10 in., depth 375 ft, cased to 296 ft, open hole 296 to 375 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,368 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Plug in cover over casing, 1.00 ft above land-surface datum.
REMARKS.--City test well No. 3.
PERIOD OF RECORD.--August 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 100.08 ft below land-surface datum, Jul. 27, 1964; lowest measured, 114.60 ft below land-surface datum, May 7, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	114.02	FEB 11	114.20	MAY 7	114.60	JUL 30	114.00
JAN 9	114.16	MAR 26	113.82	JUN 18	113.96	SEP 11	114.00



LYON COUNTY

432601N096335511. Local number, 100-48-31 CCCC11.
LOCATION.--Lat 43°26'01", long 96°33'55", Hydrologic Unit 10170203, 0.5 mi west and 2.5 mi south of the Village of Granite. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 657 ft, cased to 657 ft, perforated 450 to 455 ft and 630 to 650 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,417 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing at land-surface datum.
REMARKS.--Well D-19.
PERIOD OF RECORD.--December 1978 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 152.57 ft below land-surface datum, June 5, 1984; lowest measured, 157.53 ft below land-surface datum, Aug. 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	153.56	JAN 8	154.22	APR 2	153.54	JUL 18	153.73

MADISON COUNTY

411727N093483001. Local number, 75-26-23 AAAC1.
LOCATION.--Lat 41°17'27", long 93°48'30", Hydrologic Unit 07100008, near the shelter house in the city park, St. Charles. Owner: City of St. Charles
AQUIFER.--Mississippian: in limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 10 in., depth 1,058 ft, cased to 657 ft, open hole 657 to 1,058 ft.
INSTRUMENTATION.--Biannual measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,067 ft above National Geodetic Vertical Datum of 1929, 657 ft, topographic map. Measuring point: Plug in well cover, 1.20 ft above land-surface datum.
REMARKS.--City well No. 1.
PERIOD OF RECORD.--November 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 261.62 ft below land-surface datum, Nov. 20, 1962; lowest measured, 271.94 ft below land-surface datum, Oct. 30, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

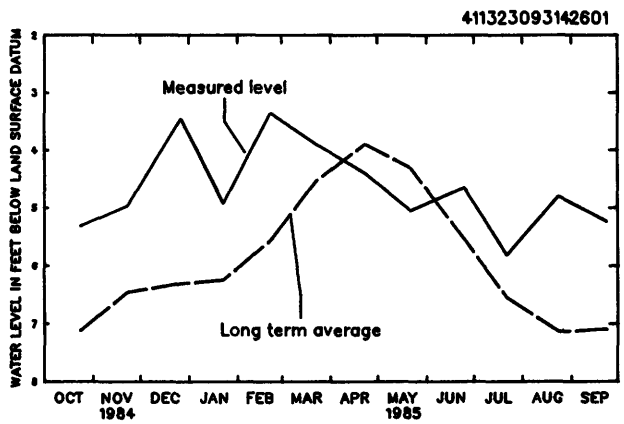
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	271.94	APR 17	271.91

MARION COUNTY

411323N093142601. Local number, 74-21-11 BBCD1.
LOCATION.--Lat 41°13'23", long 93°14'26", Hydrologic Unit 07100008, north of the water tower in the town square, Melcher. Owner: Town of Melcher.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in., depth 12.2 ft, lined with tile.
INSTRUMENTATION.--Twice a month measurement with chalked tape by observer.
DATUM.--Elevation of land-surface datum is 948 ft above Naitonal Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of well cover, 0.75 ft above land-surface datum.
REMARKS.--Town well No. 2. Depth formerly 25 ft, re-measured in 1981.
PERIOD OF RECORD.--March 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.12 ft below land-surface datum, Apr. 24, 1976; lowest measured, 16.27 ft below land-surface datum, Oct. 22, 1953.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	6.55	JAN 10	5.02	APR 10	4.15	JUL 8	5.55
OCT 24	5.31	JAN 23	4.93	APR 23	4.40	JUL 22	5.82
NOV 9	4.72	FEB 10	4.84	MAY 10	5.05	AUG 15	5.22
NOV 23	4.97	FEB 22	3.35	MAY 22	5.05	AUG 24	4.80
DEC 10	5.33	MAR 10	3.55	JUN 15	5.25	SEP 11	5.01
DEC 27	3.45	MAR 23	3.90	JUN 25	4.65	SEP 23	5.23



MARSHALL COUNTY

420355N092534701. Local number, 84-18-24 CDCA1.
LOCATION.--Lat 42°03'55", long 92°53'47", Hydrologic Unit 07080208, east of Riverview Park and south of the sewage treatment plant, Marshalltown. Owner: City of Marshalltown.
AQUIFER.--Glacial sand and gravel: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 8 in., depth 200 ft, cased to 190 ft, screened 190 to 200 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 871 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing at land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--May 1949 to August 1971, March 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.92 ft below land-surface datum, Jul. 13, 1951; lowest measured, 54.95 ft below land-surface datum, May 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

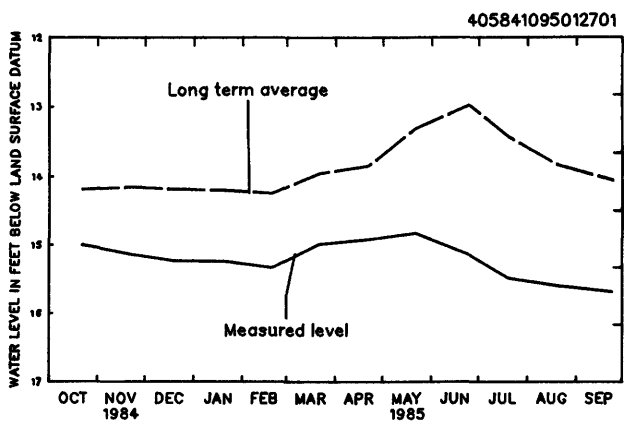
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 29	40.63	APR 17	37.22	JUL 12	46.95

MONTGOMERY COUNTY

405841N095012701. Local number, 71-36-6 DADA1.
LOCATION.--Lat 40°58'41", long 95°01'27", Hydrologic Unit 10240009, east of Viking Lake in Viking Lake State Park, or approximately 4 mi east of the town of Stanton and 0.25 mi south of U.S. Highway 34, Owner: State of Iowa.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in., depth 38 ft, cased to 36 ft, screened 36 to 38 ft.
INSTRUMENTATION.--Twice a month measurement with chalked tape by USGS personnel or observer.
DATUM.--Elevation of land-surface datum is 1,081 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.95 ft above land-surface datum.
REMARKS.--Measuring point changed October 11, 1983.
PERIOD OF RECORD.--April 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.52 ft below land-surface datum, May 31, 1951; lowest measured, 30.99 ft below land-surface datum, Apr. 26, 1950.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	15.00	JAN 28	15.30	MAY 22	14.84	AUG 20	15.60
24	15.03	FEB 20	15.35	JUN 25	15.15	SEP 18	15.85
NOV 23	15.15	MAR 22	15.00	JUL 3	18.94	24	15.69
DEC 20	15.25	APR 5	14.86	20	15.49		
JAN 21	15.26	22	14.93	AUG 12	15.54		



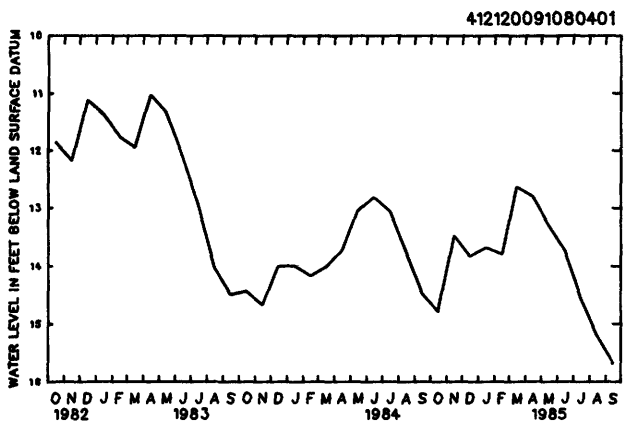
MUSCATINE COUNTY

412120N091080401. Local number, 76-2-30 CBAA1.
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 sand and gravel: in material of Holocene age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in., depth 27 ft, cased to 24 ft, screened 24 to 27 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 546 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Base of recorder shelter, 3.70 ft above land-surface datum.
REMARKS.--Site identification number corrected 1983.
PERIOD OF RECORD.--May 1966 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.51 ft below land-surface datum, May 16, 1973; lowest recorded, 15.76 ft below land-surface datum, Sept. 30, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.68	13.82	13.73	13.81	13.73	13.25	12.64	13.16	13.49	14.27	15.08	15.51
10	14.76	13.55	13.79	13.74	13.77	12.82	12.73	13.28	13.65	14.44	15.23	15.60
15	14.78	13.48	13.83	13.68	13.80	12.63	12.80	13.30	13.74	14.55	15.20	15.68
20	14.60	13.53	13.87	13.65	13.84	12.56	12.87	13.29	13.83	14.73	15.27	15.73
25	14.28	13.58	13.88	13.63	13.63	12.57	12.97	13.30	13.90	14.91	15.37	15.74
EOM	14.19	13.65	13.86	13.68	13.46	12.56	13.08	13.40	14.09	15.07	15.46	15.76

WTR YEAR 1985 HIGHEST 12.53 MAR 24, 1985 LOWEST 15.76 SEP 30, 1985



O'BRIEN COUNTY

425610N095250611. Local number, 94-39-26 BADB11.
LOCATION.--Lat 42°56'10", long 95°25'06", Hydrologic Unit 10230003, near a dead-end road just south of the Little Sioux River, 0.9 mi north of Iowa Highway 10, approximately 5 mi southeast of the Town of Sutherland. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2.50 in., depth 329 ft, cased to 329 ft, perforated 291 to 295 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,212 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing at land-surface datum.
REMARKS.--Well D-3.
PERIOD OF RECORD.--April 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.38 ft below land-surface datum, Dec. 18, 1984 and Mar. 1, 1984; lowest mesured, 36.85 ft below land-surface datum, Dec. 15, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 18	35.38	MAR 11	35.61	MAY 29	35.93	AUG 22	35.47

O'BRIEN COUNTY

425808N095480311. Local number, 94-42-9 DDDD11.
LOCATION.--Lat 42°58'08", long 95°48'03", Hydrologic Unit 10230003, along Iowa Highway 143, 1 mi west and 1 mi north of the Village of Germantown. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 638 ft, cased to 638 ft, perforated 516 to 536 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface is 1,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--Well D-42.
PERIOD OF RECORD.--July 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 215.09 ft below land-surface datum, May 6, 1982; lowest measured, 260.64 ft below land-surface datum, July 10, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTMEBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	229.43	JAN 8	230.35	APR 2	230.68	JUL 19	231.10

430930N095350401. Local number, 96-40-5 DDDA1.
LOCATION.--Lat 43°09'30", long 95°35'04", Hydrologic Unit 10230003, approximately 3 mi east of the Town of Sanborn and 2 mi south of U.S. Highway 18. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota and Ordovician: in sandstone of Early Cretaceous age and sandy shale of Ordovician age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 701 ft, cased to 701 ft, perforated 661 to 701 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,560 ft above National Geodetic Vertical Datum of 1929, from topogarphic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--Well D-41.
PERIOD OF RECORD.--June 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 359.14 ft below land-surface datum, Oct. 18, 1984; lowest measured, 361.40 ft below land-surface datum, Jul. 16, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	359.14	JAN 8	359.64	APR 2	359.33	JUL 9	359.59

OSCEOLA COUNTY

431620N095250501. Local number, 98-39-26 CDAD1.
LOCATION.--Lat 43°16'20", long 95°25'05", Hydrologic Unit 10230003, 3.5 mi south and 2.5 mi east of the Village of May City. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--St. Peter: in sandstone of Middle Ordovician age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 662 ft, cased to 662 ft, perforated 622 to 662 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel or observer.
DATUM.--Elevation of land-surface datum is 1,402 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of low pipe, 1.47 ft above land-surface datum.
REMARKS.--Well D-38 Deep Hibbing.
PERIOD OF RECORD.--June 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 197.68 ft below land-surface datum, May 8, 1984; lowest measured, 199.52 ft below land-surface datum, Aug. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 1	197.90	APR 13	197.82	JUL 25	198.85	SEP 1	198.25

OSCEOLA COUNTY

431620N095250511. Local number, 98-39-26 CDAD11.
LOCATION.--Lat 43°16'20", long 95°25'05", Hydrologic Unit 10230003, 3.5 mi south and 2.5 mi east of the Village of May City. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 345 ft, cased to 345 ft, perforated 335 to 345 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel or observer.
DATUM.--Elevation of land-surface datum is 1,402 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of high pipe, 2.60 ft above land-surface datum.
REMARKS.--Well D-38 Shallow Hibbing.
PERIOD OF RECORD.--June 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 192.20 ft below land-surface datum, Sep. 10, 1981; lowest measured, 194.11 ft below land-surface datum, Jul. 25, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 1	193.40	APR 13	193.56	JUL 25	193.49	SEP 1	193.69

431613N095251801. Local number, 98-39-26 CDCC1.
LOCATION.--Lat 43°16'13", long 95°25'18", Hydrologic Unit 10230003, 3.5 mi south and 2.5 mi east of the Village of May City. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 500 ft, cased to 500 ft, perforated 490 to 500 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel or observer.
DATUM.--Elevation of land-surface datum is 1,398 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.70 ft above land-surface datum.
REMARKS.--Well D-39.
PERIOD OF RECORD.--June 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 189.99 ft below land-surface datum, Jun. 17, 1980; lowest measured, 196.85 ft (nearby well pumping) below land-surface datum, Sept. 6, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 1	191.18	APR 13	191.10	JUL 25	192.39	SEP 1	191.46

431620N095482402. Local number, 98-42-33 AABB2.
LOCATION.--Lat 43°16'20", long 95°48'24", Hydrologic Unit 10170204, approximately 2.75 mi south of the Town of Ashton, west of Iowa Highway 60, near the Chicago and Northwestern Railroad tracks. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 400 ft, cased to 400 ft, perforated 385 to 395 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personel.
DATUM.--Elevation of land-surface datum is 1,440 ft above National Geodetic Vertical Datum of 1929, topographic map. Measuring point: Top of casing, 2.80 ft above land-surface datum.
REMARKS.--Well D-40.
PERIOD OF RECORD.--May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 195.87 ft below land-surface datum, June 1, 1983; lowest measured, 206.48 ft below land-surface datum, May 6, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 8	203.65	APR 2	206.20	JUL 9	204.40

432828N095283611. Local number, 100-39-17 DCCB11.
LOCATION.--Lat 43°28'28", long 95°28'36", Hydrologic Unit 10230003, approximately 2 mi west and 2 mi north of the Town of Harris, east of County Road M-12. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 5 in. to 461 ft, 4 in. to 760 ft, depth 760 ft, cased to 760 ft, perforated 680 to 700 ft.
INSTRUMENTATION.--Quarterly measurement with electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--Well D-13.
PERIOD OF RECORD.--July 1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 341.80 ft below land-surface datum, Aug. 5, 1980; lowest measured, 343.70 ft below land-surface datum, Aug. 21, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	343.46	MAR 11	343.38	MAY 28	343.22	AUG 21	343.70

PAGE COUNTY

404257N095150801. Local number, 68-38-7 CCAA1.
LOCATION.--Lat 40°42'57", long 95°15'08", Hydrologic Unit 10240005, approximately 2 mi south of the Village of Norwich and 1.5 mi west of County Road M-48. Owner: William Brayman.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in., depth 44 ft, lined with tile.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,087 ft above National Geodetic Vertical Datum of 1929, topogarphic map. Measuring point: Top of pipe inserted through board cover, 1.00 ft above land-surface datum.
REMARKS.--Measuring point changed September 1983. Site identification number corrected 1983.
PERIOD OF RECORD.--May 1934 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.44 ft below land-surface datum, Jun. 23, 1947; lowest measured, 20.96 ft below land-surface datum, Nov. 24, 1958.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 7	13.95	MAR 14	14.19	MAY 29	13.95	AUG 13	14.60
DEC 19	14.14	APR 18	13.65	JUL 23	14.72	SEP 19	14.93
JAN 30	14.11						

PLYMOUTH COUNTY

424850N096074801. Local number, 92-45-2 CBCB1.
LOCATION.--Lat 42°48'50", long 96°07'48", Hydrologic Unit 10230002, approximately 3.8 mi west and 0.6 mi south of the Village of Oyens. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Cambrian-Ordovician: in dolomite of Ordovician age and Cambrian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 5 in. to 161 ft, 4 in. to 598 2 in. to 1,340 ft, depth 1,340 ft, cased to 598 ft, open hole 598 to 1,340 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,245 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.80 ft above land-surface datum.
REMARKS.--Well D-21. Well deepened from 1,089 to 1,340 ft, May 1984. Penetrates the Precambrian. Measuring point changed, Oct. 1984.
PERIOD OF RECORD.--May 1979 to January 1981, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 87.97 ft below land-surface datum, Mar. 13, 1984; lowest measured, 102.10 ft below land-surface datum, Aug. 6, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	95.62	JAN 8	88.00	APR 2	93.03

424850N096074802. Local number, 92-45-2 CBCB2.
LOCATION.--Lat 42°48'50", long 96°07'48", Hydrologic Unit 10230002, approximately 3.8 mi west and 0.6 mi south of the Village of Oyens. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 4 in. to 155 ft, 2 in. to 365 ft, depth 365 ft, cased to 365 ft, perforated 347 to 365 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,245 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Wood cover over well, 2.80 ft above land-surface datum.
REMARKS.--Well D-22. Measuring point changed, Oct. 1984.
PERIOD OF RECORD.--April 1979 to January 1981, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 93.59 ft below land-surface datum, Jan. 8, 1985; lowest measured, 106.56 ft below land-surface datum, Sept. 4, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	94.85	JAN 8	93.59	APR 2	85.75

PLYMOUTH COUNTY

424833N096324701. Local number, 92-48-6 DDDA1.
LOCATION.--Lat 42°48'33", long 96°32'47", Hydrologic Unit 10170203, just south of the curve on Iowa Highway 3, 1 mi south of the Town of Akron. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 4 in. to 184 ft, 2 in. to 581 ft, depth 581 ft, cased to 576 ft, perforated 430 to 434 ft and 510 to 515 ft, open hole 576 to 581 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,282 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.80 ft above land-surface datum.
REMARKS.--Well D-35. 5 feet of Paleozoic rock open 576 to 581 ft.
PERIOD OF RECORD.--December 1979 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 139.12 ft below land-surface datum, July 18, 1985; lowest measured, 159.82 ft below land-surface datum, Aug. 6, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	141.78	JAN 16	140.85	MAY 1	139.64	JUL 18	139.12

425249N096125001. Local number, 93-46-12 DDDD1.
LOCATION.--Lat 42°52'49", long 96°12'50", Hydrologic Unit 10230002, 1 mi west and 1 mi south of the Village of Struble. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2.50 in., depth 570 ft, cased to 570 ft, perforated 356 to 360 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,280 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of coupling, 4.80 ft above land-surface datum.
REMARKS.--Well D-2.
PERIOD OF RECORD.--March 1980 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 117.78 ft below land-surface datum, Apr. 9, 1980; lowest measured, 122.00 ft below land-surface datum, Mar. 27, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 8	117.80	APR 2	118.45	JUL 9	118.98

SAC COUNTY

422500N095084801. Local number, 88-37-22 CCCC1.
LOCATION.--Lat 42°25'00", long 95°08'48", Hydrologic Unit 10230007, approximately 3 mi south of the Town of Early or 0.5 mi south of the junction of U.S. Highways 20 and 71. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota and Pennsylvanian: in sandstone of Early Cretaceous age and limestone of Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 435 ft, cased to 435 ft, perforated 417 to 435 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.50 ft above land-surface datum.
REMARKS.--Well D-16.
PERIOD OF RECORD.--December 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 163.93 ft below land-surface datum, May 12, 1984; lowest measured, 165.40 ft below land-surface datum, Dec. 16, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	164.07	MAR 12	165.17	MAY 23	164.02	AUG 22	164.40

423013N095175301. Local number, 89-38-26 ABAA1.
LOCATION.--Lat 42°30'13", long 95°17'53", Hydrologic Unit 10230005, northern part of the Town of Schaller. Owner: Town of Schaller.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled public-emergency-supply artesian water well, diameter 10 to 8 in., depth 352 ft, cased to 352 ft, perforated 304 to 352 ft.
INSTRUMENTATION.--Quarterly measuerment with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,376 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Edge of pump breather pipe, 1.80 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1940 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 210.04 ft below land-surface datum, Mar. 25, 1948; lowest non-pumping measured, 240.10 ft below land-surface datum, May 24, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	230.43	MAR 12	231.52	MAY 23	231.86	AUG 22	230.84

SAC COUNTY

422850N095171501. Local number, 89-38-36 CBCC1.
LOCATION.--Lat 42°28'50", long 95°17'15", Hydrologic Unit 10230005, just east of Iowa Highway 110, 0.75 mi south of the Town of Schaller and 0 .25 mi north of U.S. Highway 20. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 521 ft, cased to 512 ft, perforated 410 to 430 ft, open hole 512 to 521 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape or electric line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,445 ft above National Geodetic Vertical Datum of 1929, 512 ft, topographic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--Well D-17. 9 ft of Paleozoic rock open.
PERIOD OF RECORD.--December 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 288.05 ft below land-surface datum, Jun. 2, 1980; lowest measured, 291.50 ft below land-surface datum, Apr. 8, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

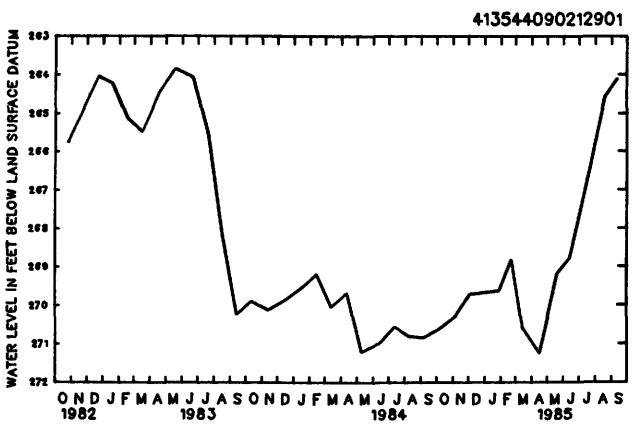
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 19	291.48	MAR 12	291.31	MAY 23	291.27	AUG 22	291.38

SCOTT COUNTY

413544N090212901. Local number, 78-5E-3 AADA1.
LOCATION.--Lat 41°35'44", long 90°02'29", Hydrologic Unit 07080101, at the Bridgeview Elementary School, corner of 12th and Davenport Streets, LeClaire. Owner: City of LeClaire.
AQUIFER.--Jordan: in strata of Cambrian and Ordovician age.
WELL CHARACTERISTICS.--Drilled unused municipal artesian water well, diameter 16 to 12 in., depth 1,607 ft, cased to 1,128 ft, open hole 1,128 to 1,607 ft.
INSTRUMENTATION.--Water-level recorder and monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 703 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Nipple on plate welded to casing, 2.11 ft above surface datum.
REMARKS.--Water-level recorder removed Dec. 4, 1984. Oct. and Nov. readings are noon values from recorder, the rest are chalked tape measurements.
PERIOD OF RECORD.--July 1975 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 247.46 ft below land-surface datum, Jul. 8, 1975; lowest recorded, 271.77 ft below land-surface datum, May 15, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	270.63	NOV 5	270.22	DEC 4	269.73	JUN 13	268.80
10	270.58	10	269.67	JAN 29	269.64	JUL 23	266.37
15	269.82	15	269.70	FEB 21	268.84	AUG 19	264.58
20	270.21	20	270.20	MAR 14	270.60	SEP 12	264.11
25	270.29	25	269.41	APR 16	271.26		
31	270.27	30	269.11	MAY 20	269.19		



SIOUX COUNTY

430140N095573101. Local number, 95-43-7 AAAA1.
LOCATION.--Lat 43°04'10", long 95°57'32", Hydrologic Unit 10230002, just south of County Road B-40, 1 mi east of the Village of Newkirk. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 681 ft, cased to 681 ft, perforated 641 to 681 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.70 ft above land-surface datum.
REMARKS.--Well D-43. Paleozoic rock from 674 to 681 ft.
PERIOD OF RECORD.--July 1980 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 215.13 ft below land-surface datum, June 5, 1984; lowest measured, 217.23 ft below land-surface datum, July 9, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 8	216.57	APR 2	215.55	JUL 9	217.23

430913N096033201. Local number, 96-44-8 ADAA1.
LOCATION.--Lat 43°09'13", long 96°03'32", Hydrologic Unit 10230002, west side of County Road K-64, 2.5 mi west of the Town of Boyden and 2.2 mi south of U.S. Highway 18. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 682 ft, cased to 682 ft, perforated 647 to 667 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,373 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.70 ft above land-surface datum.
REMARKS.--Well D-44. One ft of Paleozoic rock penetrated.
PERIOD OF RECORD.--August 1980 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 187.85 ft below land-surface datum, Oct. 16, 1984; lowest measured, 193.95 ft below land-surface datum, Dec. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	187.85	JAN 8	193.50	APR 2	193.05	JUL 9	193.30

WASHINGTON COUNTY

421829N091304701. Local number, 75-6-14 ABBB1.
LOCATION.--Lat 42°18'29", 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: in material 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 is 745 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Nipple welded to barrel, 3.33 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--December 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.53 ft below land-surface datum, May 23, 1984; lowest measured, 9.21 ft below land-surface datum, Sep. 5, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 1	2.62	FEB 28	2.83	MAY 23	1.53	AUG 21	5.81
13	2.00	MAR 27	1.86	JUN 19	3.71	SEP 20	8.17
JAN 26	3.83	APR 26	2.47	JUL 19	3.77		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	6.67	FEB 12	4.72	MAY 9	4.71	AUG 5	6.81
NOV 15	3.49	MAR 12	2.20	JUN 6	5.20	SEP 5	9.21
DEC 13	4.24	APR 11	3.62	JUL 3	5.72	24	8.61
JAN 15	3.77						

WASHINGTON COUNTY

412037N091564701. Local number, 76-9-31 CBBC1.
LOCATION.--Lat 41°20'37", long 91°56'47", Hydrologic Unit 07080107, at Pepper Quarry on County Road V-15 V-15, 1 mi south of the City of Keota. Owner: River Products Co.
AQUIFER.--Mississippian and Devonian: in limestone of Mississippian age and sandstone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 5 in., depth 136 ft, cased to 19 ft, open hole 19 to 136 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 745 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.88 ft above land-surface datum.
REMARKS.--Water levels affected by quarrying operations.
PERIOD OF RECORD.--August 1979 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.38 ft below land-surface datum, Mar. 4, 1985; lowest recorded, 24.06 ft below land-surface datum, Sept. 18, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

NOON VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-----	17.19	19.68	16.50	e17.25	10.58	13.13	15.73	17.75	19.74	20.74	20.15
10	-----	17.49	19.87	16.85	e17.05	12.22	13.79	16.21	18.18	20.25	16.25	20.40
15	-----	-----	19.26	-----	17.28	12.58	14.13	16.03	18.41	18.76	17.52	20.28
20	-----	18.70	18.68	17.46	15.95	13.24	14.78	16.42	e18.77	19.66	18.48	20.18
25	20.86	18.80	18.72	17.06	11.35	13.86	15.39	16.74	19.16	20.07	19.17	17.53
EOM	19.33	19.14	16.69	e17.25	12.10	12.08	15.73	17.08	e19.52	20.40	19.86	16.48

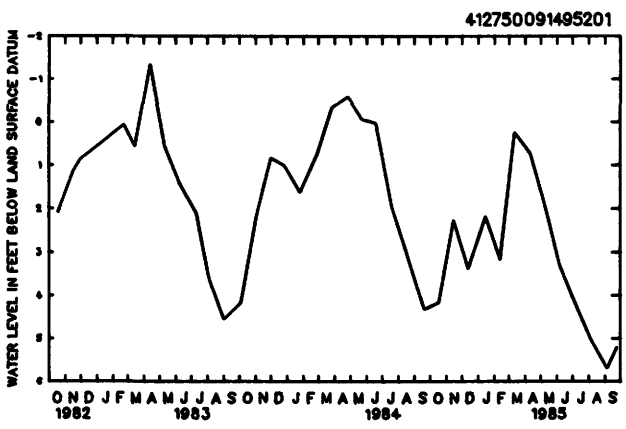
WTR YEAR 1985 HIGHEST 9.38 MAR 4, 1985 LOWEST 22.85 OCT 18, 1984

e Estimated.

412750N091495201. Local number, 77-9-24 AADA1.
LOCATION.--Lat 41°27'54", 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.--Dolomite of Mississippian age and dolomite of Devonian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 8 in., depth 110 ft, cased to 47 ft, open hole 47 to 110 ft.
INSTRUMENTATION.--Monthly mesurement wtih chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 695 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.35 ft above land-surface datum.
REMARKS.--City test well No. 1.
PERIOD OF RECORD.--May 1963 to October 1971, May 1973 to current year.
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.35 ft above land-surface datum, Nov. 3, 1977, Mar. 28, 1979, and Apr. 13, 1983; lowest measured, 6.92 ft below land-surface datum, Nov. 1, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE- DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	4.16	FEB 12	3.15	MAY 9	1.93	AUG 5	5.02
NOV 15	2.26	MAR 12	0.24	JUN 6	3.29	SEP 5	5.70
DEC 13	3.38	APR 11	0.72	JUL 3	4.09	24	5.21
JAN 15	2.18						



WEBSTER COUNTY

421550N094041001. Local number, 86-28-14 ADAB1.
LOCATION.--Lat 42°15'50", long 94°04'10", Hydrologic Unit 07100004, in the town water plant, next to the water tower, Dayton. Owner: Town of Dayton.
AQUIFER.--Devonian and Mississippian: in limestone of Devonian age and Mississippian age.
WELL CHARACTERISTICS.--Drilled municipal artesian water well, diameter 13 to 10 in., depth 1,240 ft, cased to 505 ft, 8 in. liner 770 to 966 ft, open hole 505 to 770 ft and 966 to 1,240 ft.
INSTRUMENTATION.--Quarterly measurement with air line by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,121 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Pump base, 1.30 ft above land-surface datum.
REMARKS.--Town well No. 2. Water levels affected by pumping.
PERIOD OF RECORD.--September 1942 to December 1948, January 1952 to November 1971, March 1974 to current year.
REVISIONS.--WTR YEAR 1984 WATER LEVEL 145.20 JUL 23, 1984.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 69.93 ft below land-surface datum, Nov. 17, 1942; lowest measured, 145.20 ft below land-surface datum, Jul. 23, 1984.

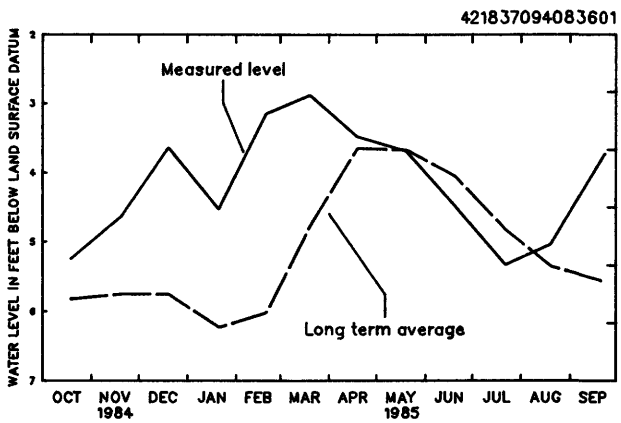
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 4	144.20	MAR 12	136.20	JUN 27	139.20

421837N094083601. Local number, 87-28-29 CCCD1.
LOCATION.--Lat 42°18'37", long 94°08'36", Hydrologic Unit 07100006, 3 mi north and 2 mi east of the Town of Hancourt. Owner: Ransom Helms.
AQUIFER.--Glacial drift: in material of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in., depth 42 ft, lined with tile.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,165 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.75 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1942 to June 1956, March 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.05 ft below land-surface datum, Aug. 1, 1972; lowest measured, 13.62 ft below land-surface datum, Mar. 12, 1956.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	5.24	JAN 21	4.53	APR 19	3.48	JUL 22	5.33
NOV 20	4.63	FEB 20	3.15	MAY 20	3.69	AUG 20	5.03
DEC 20	3.64	MAR 20	2.88	JUN 20	4.48	SEP 23	3.73



WEBSTER COUNTY

423018N094214701. Local number, 89-30-23 CCBB1.
LOCATION.--Lat 42°30'18", long 94°21'47", Hydrologic Unit 07100004, 75 ft west of the new school addition, Barnum. Owner: Johnson Township Consolidated School.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 4 in., reported depth 208 ft, cased to 208 ft, perforated 203-208 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,174 ft above National Geodetic Vertical Datum of 1929, from topogarphic map. Measuring point: Top of casing at land-surface datum.
REMARKS.--Site identification number corrected 1983.
PERIOD OF RECORD.--October 1942 to September 1945, May 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.86 ft below land-surface datum, July 2, 1945; lowest measured, 52.60 ft below land-surface datum, Feb. 26, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 13	42.88	MAR 13	42.70	MAY 28	43.14	AUG 21	43.58

WOODBURY COUNTY

422058N095573701. Local number, 87-44-15 CBBB1.
LOCATION.--Lat 42°20'58", long 95°57'37", Hydrologic Unit 10230003, approximately 3.5 mi west and 5.5 mi north of the Village ot Oto. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 197 ft, cased to 197 ft, perforated 185 to 189 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,165 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.50 ft above land-surface datum.
REMARKS.--Well D-34.
PERIOD OF RECORD.--April 1980 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.74 ft below land-surface datum, Oct. 15, 1984; lowest measured, 63.56 ft below land-surface datum, Nov. 2, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	54.74	JAN 7	55.05	APR 1	55.10	JUL 10	54.90

422830N096000511. Local number, 88-44-6 BAAB11.
LOCATION.--Lat 42°28'30", long 96°00'05", Hydrologic Unit 10230004, approximately 3 mi east and 0.5 mi south of the Town of Moville. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 337 ft, cased to 337 ft, perforated 332 to 337 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,340 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--Well D-33.
PERIOD OF RECORD.--October 1979 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 199.33 ft below land-surface datum, Oct. 15, 1984; lowest measured, 202.90 ft below land-surface datum, Oct. 17, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	199.33	JAN 7	199.67	APR 1	199.45	JUL 10	199.41

423015N096034601. Local number, 89-44-20 DCDC1.
LOCATION.--Lat 42°30'15", long 96°03'46", Hydrologic Unit 10230004, east of Iowa Highway 140, approximately 1 mi north of the Town of Moville. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 221 ft, cased to 221 ft, perforated 206 to 221 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,160 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.00 ft above land-surface datum.
REMARKS.--Well D-32.
PERIOD OF RECORD.--October 1979 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.64 ft below land-surface datum, Aug. 8, 1984; lowest measured, 26.65 ft below land-surface datum, Dec. 11, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	23.67	JAN 7	23.64	APR 1	24.13	JUL 10	23.79

WOODBURY COUNTY

422910N096135811. Local number, 89-46-36 BBDC11.
LOCATION.--Lat 42°29'10", long 96°13'58", Hydrologic Unit 10230004, approximately 0.75 mi northeast of the Eberly Cemetary or 2.5 mi west and 0.75 mi north of the Village of Lawton. Owner: Iowa Geological Survey and U.S. Geological Survey.
AQUIFER.--Dakota: in sandstone of Early Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 2 in., depth 500 ft, cased to 500 ft, perforated 358 to 362 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 1,268 ft above National Geodetic Vertical Datum of 1929, Geological topographic map. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--Well D-30.
PERIOD OF RECORD.--April 1980 to December 1980, May 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 128.50 ft below land-surface datum, Aug. 8, 1984; lowest measured, 135.35 ft below land-surface datum, Nov. 2, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	129.37	JAN 7	129.38	APR 1	129.55	JUL 10	128.67

STATION NUMBER		STATION NAME	COUNTY	DATE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)
405631094560802D07135W20AACA		1976NODAWAY NO 3	ADAMS	08-20-85	10:30	111ALVM	38.00
413537094532701078 35W04BCBD		1969EXIRA NO 11	AUDUBON	06-10-85	15:30	111ALVM	60.00
413234094552401078 35W19BCDB		1976BRAYTON	AUDUBON	06-10-85	13:30	111ALVM	40.00
413743095041401079 36W29BBCA		1966KIMBALLTON NO 6	AUDUBON	06-11-85	10:00	111ALVM	37.00
414330094524801080 35W23ADDD		AUDUBON NO 2	AUDUBON	06-11-85	03:00	111LAVM	34.00
414245094524901080 35W26AAD		1977AUDUBON 14	AUDUBON	06-11-85	14:10	111ALVM	35.00
415950091512501083 09W14DBD	18068	ATKINS TOWN NO2	BENTON	07-03-85	14:15	350SLRN	485.00
420030092053001083 11W11DCD	07384	VAN HORNE CITY2	BENTON	09-25-85	11:15	371JRDN	1870.00
415955092120701083 12W13CBBB		KEYSTONE CITY	BENTON	09-25-85	13:00	364STPR	1360.00
420520091524701084 09W15ACC	00001	SHELLSBURG 1	BENTON	07-03-85	12:35	371TMPL	1615.00
421016092015901085 10W17DBDC		1973VINTON NO 4	BENTON	06-25-85	11:45	112PLSC	90.00
421326091525301086 09W34ABB	11586	URBANA TOWN 2	BENTON	07-03-85	10:15	350SLRN	560.00
422801092152801088 12W04BBBC	12372	ELK RUN HTS 1	BLACK HAWK	07-31-85	10:00	344CDVL	125.00
422805092165901088 12W06ACAA	10039	1958EVANSDALE NO 3	BLACK HAWK	07-31-85	11:15	344WPPC	145.00
423112092213901089 13W15DABB		1937WATERLOO NO 10	BLACK HAWK	08-15-85	12:00	111ALVM	76.00
422818092212801089 13W34DDA	07482	WATERLOO # 15	BLACK HAWK	08-15-85	10:30	344CDVL	206.00
423139092261401089 14W12DDCD		CEDAR FALLS 2	BLACK HAWK	08-15-85	15:00	344CDVL	125.00
425058092315601093 14W20CC	11138	PLAINFIELD 1	BREMER	07-30-85	12:00	344DVNNM	150.00
421900092002001087 10W27CB	03894	BRANDON IOWA 2	BUCHANAN	08-09-85	09:45	350SLRN	405.00
422833091431701089 08W36DCAA	25801	1980WINTHROP NO 3	BUCHANAN	08-09-85	13:45	340DVSL	180.00
423710091540001090 09W10CBA	06208	HAZELTON IOWA 1	BUCHANAN	08-09-85	11:15	350SLRN	65.00
423837095135002090 37W05ADAA		1967STORM LAKE CITY NO 6	BUENA VISTA	05-23-85	10:15	110QRNR	110.00
423512092521001090 17W29AAAA		1962APLINGTON TOWN 2	BUTLER	07-08-85	11:00	341LMCK	118.00
424239092350001091 15W11ACBB		1941SHELL ROCK TOWN NO 1	BUTLER	07-08-85	16:00	344CDVL	156.00
424704092400803092 15W18BCAA		1981CLARKSVILLE 3	BUTLER	07-08-85	14:30	340DVNN	240.00
424627092542302092 17W18CCCC	20256	1967BRISTOW TOWN WELL	BUTLER	07-09-85	13:30	344CDVL	180.00
424524092474601092 17W25ABDA		1899ALLISON TOWN NO 1	BUTLER	07-08-85	13:15	344CDVL	283.00
424455092581801092 18W28DBDD		1925DUMONT TOWN	BUTLER	07-09-85	12:10	340DVNN	185.00
425355092475801093 17W01ACCC		1948GREENE TOWN NO 1	BUTLER	07-09-85	15:00	344CDVL	120.00
421614094325101086 32W11CCAA		1978LOHRVILLE 4	CALHOUN	08-13-85	13:30	330MSSP	900.00
415147094403501082 33W34DCCC		1955COON RAPIDS #5	CARROLL	05-22-85	12:00	217DKOT	130.00
415430095041601082 36W17CCCA		1958MANNING #6	CARROLL	05-22-85	11:25	111ALVM	50.00
420024094575901083 35W18BAAD		1936HALBUR #1	CARROLL	05-22-85	12:00	111ALVM	23.00
411637094520201075 35W22CAC	12969	1961CUMBERLAND NO 3	CASS	08-22-85	13:50	217DKOT	257.00
412429094594301076 36W04CAD		1945ATLANTIC NO 2	CASS	08-22-85	10:30	217DKOT	81.50
412714094460701077 35W21BDDD		1960ANITA NO 3	CASS	08-15-85	11:30	217DKOT	237.00
430756093263201096 22W16DABC	25538	1977VENTURA WELL NO 1	CERRO GORDO	06-18-85	11:05	340DVNN	500.00
431426093073301097 19W06DD		1925PLYMOUTH TOWN 1	CERRO GORDO	06-18-85	12:45	344CDVL	268.00
430923095114501096 37W03DDCC		1971SPENCER NO 3	CLAY	12-04-84	12:00	112PLSC	38.00
430922095193501096 38W03CCDD		1976EVERLY TOWN NO 3	CLAY	12-04-84	14:05	111ALVM	16.00
424026091321502091 06W22CDDA	08583	1957STRAWBERRY PT TWN 6	CLAYTON	05-09-85	16:15	358ALXD	240.00
424653091060801092 02W17CADA	00666	1937GUTTENBERG CITY 2	CLAYTON	06-24-85	12:30	371TMPL	435.00
425138091234901093 05W23ABBB	18420	1965ELKADER CITY WELL 5	CLAYTON	05-09-85	12:00	364STPR	225.00
414921090450401081 02E17ACC	00549	CALAMUS IOWA #2	CLINTON	12-20-84	11:30	350SLRN	278.00
414652090153201081 06E33ADA		CAMANCHE CITY 2	CLINTON	01-08-85	11:00	112PLSC	60.00
415650095275602082 40W02ABDD		1925ARION TOWN NO 1	CRAWFORD	06-17-85	11:35	111ALVM	55.00
420131095221101083 39W03DCAC		1976DENISON NO 7	CRAWFORD	06-17-85	11:35	111ALVM	87.00
420328095122401084 37W30CBBB		1960VAIL NO 2	CRAWFORD	06-18-85	10:05	111BRRV	40.00
420551095185801084 38W07CDBA		1969DELOIT NO 4	CRAWFORD	06-12-85	14:00	111ALVM	54.00
420415095352201084 41W23CACC		1950CHARTER OAK NO 3	CRAWFORD	06-12-85	15:30	111ALVM	57.00
421125095193101085 39W12ADDB		1937KIRON NO 4	CRAWFORD	06-12-85	09:55	111ALVM	26.00
421004095272701085 40W13CCCC		1917SCHLESWIG NO 3-WEST	CRAWFORD	06-12-85	14:00	111ALVM	30.00
420736095342401085 41W36CCBC		1931RICKETTS NO 2 (MAIN)	CRAWFORD	06-17-85	14:30	111SDRV	28.00
413517094114101078 29W04BDDD		1979REDFIELD 3	DALLAS	08-20-85	09:45	112PLSC	50.00
413638093530901079 26W33BAC	17425	1965WAUKEE NO 3	DALLAS	08-20-85	12:15	371JRDN	2737.00
422059091291401087 06W13DBA	02242	RYAN CITY 3	DELAWARE	06-25-85	14:30	350SLRN	420.00
422705090561201088 01W11CABB		1979EPWORTH 3	DUBUQUE	06-24-85	15:45	350SLRN	200.00
422910091072701089 02W30DCCC		1959DYERSVILLE NO 1	DUBUQUE	06-24-85	14:15	350SLRN	120.00
423136090383501089 03E18AADC		1956DUBUQUE NO 3	DUBUQUE	06-25-85	09:30	111ALVM	200.00
423134090383401089 03E18AADD		1956DUBUQUE NO 4	DUBUQUE	06-25-85	10:30	111ALVM	190.00
421731091011501086 02W01ABCC		1976CASCADE 4	DUBUQUE	06-24-85	09:30	350SLRN	240.00
425036091480101093 08W28BBDD	03479	1948FAYETTE TOWN #1	FAYETTE	07-31-85	07:30	358ALXD	80.00
425606091565501094 09W30ABAA	25513	1978HAWKEYE 78-1	FAYETTE	07-30-85	16:00	112PLSC	85.00
430329092020901095 10W09CABD		1978WAUCOMA NO 1	FAYETTE	07-30-85	14:00	364STPR	682.00
430919092351801096 15W11BBA		1968COLWELL TOWN WELL	FLOYD	08-27-85	11:00	344CDVL	286.00

STATION NUMBER	DATE	FLOW RATE (GPM) (00058)	PUMP OR FLOW PERIOD PRIOR TO SAMPLING (MIN) (72004)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
405631094560802	08-20-85	25	60	590	6.8	270	71	22
413537094532701	06-10-85	150	60	600	7.4	320	94	21
413234094552401	06-10-85	35	30	850	7.0	420	110	35
413743095041401	06-11-85	38	180	740	7.3	350	100	25
414330094524801	06-11-85	32	60	620	7.1	340	100	23
414245094524901	06-11-85	60	60	670	6.9	340	100	23
415950091512501	07-03-85	60	30	730	7.3	250	60	24
420030092053001	09-25-85	160	25	1160	7.6	420	93	45
415955092120701	09-25-85	120	30	1700	7.1	700	160	74
420520091524701	07-03-85	170	30	635	7.4	290	63	32
421016092015901	06-25-85	600	60	595	7.4	310	81	26
421326091525301	07-03-85	70	30	505	7.4	220	47	26
422801092152801	07-31-85	370	30	510	7.5	260	71	20
422805092165901	07-31-85	450	30	625	7.2	290	82	21
423112092213901	08-15-85	2000	240	530	7.7	270	72	22
422818092212801	08-15-85	1900	240	645	7.1	330	93	23
423139092261401	08-15-85	2300	45	525	7.6	250	70	19
425058092315601	07-30-85	175	30	450	7.6	240	69	17
421900092002001	08-09-85	280	30	635	7.2	320	82	29
422833091431701	08-09-85	300	30	710	7.4	320	70	35
423710091540001	08-09-85	120	30	520	7.3	260	66	24
423837095135002	05-23-85	500	90	800	7.3	430	110	37
423512092521001	07-08-85	--		670	7.2	300	67	32
424239092350001	07-08-85	200	20	470	7.5	230	65	17
424704092400803	07-08-85	300	60	520	7.6	230	64	16
424627092542302	07-09-85	70	60	620	7.6	270	70	23
424524092474601	07-08-85	150	90	420	7.6	220	60	17
424455092581801	07-09-85	130	20	680	7.6	310	83	25
425355092475801	07-09-85	215	40	440	7.2	230	68	15
421614094325101	08-13-85	130	120	1500	7.1	750	190	66
415147094403501	05-22-85	120	40	420	7.2	210	58	16
415430095041601	05-22-85	85	120	1010	7.3	500	140	37
420024094575901	05-22-85	10	40	860	7.2	400	110	31
411637094520201	08-22-85	25	60	380	7.3	170	49	12
412429094594301	08-22-85	140	60	540	6.4	220	60	18
412714094460701	08-15-85	100	60	650	7.7	280	79	20
430756093263201	06-18-85	320	20	610	7.0	310	81	25
431426093073301	06-18-85	150	20	620	7.5	320	81	28
430923095114501	12-04-84	280	2160	570	8.2	300	84	23
430922095193501	12-04-84	230	30	620	7.1	440	120	34
424026091321502	05-09-85	240	20	401	7.4	210	51	19
424653091060801	06-24-85	290	30	670	7.1	340	77	36
425138091234901	05-09-85	280	20	552	7.0	290	68	29
414921090450401	12-20-84	135	20	417	7.6	230	58	20
414652090153201	01-08-85	210	15	406	7.5	200	49	18
415650095275602	06-17-85	--	60	1400	7.5	720	190	59
420131095221101	06-17-85	600	60	790	7.0	370	110	24
420328095122401	06-18-85	80	60	770	7.0	410	110	34
420551095185801	06-12-85	200	60	720	8.0	350	100	24
420415095352201	06-12-85	43	30	1100	7.1	540	150	41
421125095193101	06-12-85	7	60	580	7.6	280	83	18
421004095272701	06-12-85	--	30	830	6.9	410	120	26
420736095342401	06-17-85	100	60	860	7.2	470	120	42
413517094114101	08-20-85	120	120	750	7.1	400	110	31
413638093530901	08-20-85	240	180	2200	7.4	520	130	48
422059091291401	06-25-85	40	60	610	7.3	280	66	28
422705090561201	06-24-85	180	30	845	7.3	410	100	40
422910091072701	06-24-85	500	30	855	7.0	420	95	44
423136090383501	06-25-85	2100	30	450	7.4	240	58	23
423134090383401	06-25-85	2500	30	390	7.6	180	44	17
421731091011501	06-24-85	360	30	670	7.0	380	87	39
425036091480101	07-31-85	190	30	555	7.3	290	78	22
425606091565501	07-30-85	90	30	600	7.1	350	110	18
430329092020901	07-30-85	125	45	745	7.1	360	80	39
430919092351801	08-27-85	50	60	640	7.2	240	61	21

GROUND-WATER QUALITY DATA

STATION NUMBER	DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
405631094560802	08-20-85	10	1.0	157	18	120	0.2	19
413537094532701	06-10-85	13	3.2	215	24	81	0.25	15
413234094552401	06-10-85	26	0.9	305	52	120	0.25	18
413743095041401	06-11-85	16	1.6	241	76	52	0.2	31
414330094524801	06-11-85	7.5	2.0	278	4.0	64	0.2	23
414245094524901	06-11-85	7.8	0.7	211	15	140	0.15	24
415950091512501	07-03-85	62	5.3	392	2.5	21	0.45	7.6
420030092053001	09-25-85	100	14	293	12	320	1.2	7.6
415955092120701	09-25-85	160	10	289	3.5	680	1.6	7.8
420520091524701	07-03-85	26	5.5	313	1.5	26	0.8	6.9
421016092015901	06-25-85	20	2.3	279	2.0	73	0.4	17
421326091525301	07-03-85	27	4.5	241	3.5	32	0.7	6.9
422801092152801	07-31-85	13	2.2	196	24	52	0.15	180
422805092165901	07-31-85	15	1.5	223	29	72	0.4	12
423112092213901	08-15-85	7.9	1.3	210	16	27	0.2	15
422818092212801	08-15-85	9.6	1.9	216	12	86	0.5	15
423139092261401	08-15-85	6.4	1.1	203	9.5	31	0.2	16
425058092315601	07-30-85	8.3	1.2	181	14	28	0.15	12
421900092002001	08-09-85	17	3.7	295	4.5	24	0.75	8.2
422833091431701	08-09-85	31	3.8	312	<0.5	81	0.35	13
423710091540001	08-09-85	5.6	2.0	194	12	24	0.1	15
423837095135002	05-23-85	24	4.4	300	34	150	0.3	15
423512092521001	07-08-85	30	4.6	289	1.0	69	0.45	14
424239092350001	07-08-85	4.1	1.5	198	5.5	23	0.3	14
424704092400803	07-08-85	3.3	1.2	186	7.0	36	0.35	12
424627092542302	07-09-85	4.5	1.3	222	11	32	0.15	12
424524092474601	07-08-85	7.0	1.2	219	<0.5	8.2	0.5	13
424455092581801	07-09-85	7.9	1.3	239	<0.5	79	0.75	13
425355092475801	07-09-85	2.0	0.8	212	1.0	18	0.25	12
421614094325101	08-13-85	58	5.2	411	0.5	430	0.45	27
415147094403501	05-22-85	6.0	0.8	183	2.0	28	0.3	9.6
415430095041601	05-22-85	24	1.7	337	47	130	0.25	10
420024094575901	05-22-85	17	0.6	262	34	100	0.35	8.3
411637094520201	08-22-85	10	1.5	182	0.5	16	0.3	21
412429094594301	08-22-85	13	1.6	127	26	69	0.25	20
412714094460701	08-15-85	26	3.0	255	0.5	81	0.45	22
430756093263201	06-18-85	10	2.2	328	<0.5	5.8	0.3	18
431426093073301	06-18-85	9.2	3.3	325	<0.5	17	0.35	12
430923095114501	12-04-84	3.3	2.4	219	5.5	66	0.1	27
430922095193501	12-04-84	13	3.7	287	54	56	0.2	27
424026091321502	05-09-85	2.4	0.6	159	5.5	18	0.2	12
424653091060801	06-24-85	16	1.9	298	16	38	0.15	11
425138091234901	05-09-85	4.6	4.8	241	2.0	56	0.65	8.2
414921090450401	12-20-84	6.9	1.3	228	1.0	2.0	0.15	18
414652090153201	01-08-85	11	2.2	123	22	27	<0.1	23
415650095275602	06-17-85	38	3.8	406	86	210	0.3	25
420131095221101	06-17-85	11	1.9	297	22	77	0.2	26
420328095122401	06-18-85	12	1.5	276	22	88	0.3	19
420551095185801	06-12-85	12	2.1	281	15	71	0.25	22
420415095352201	06-12-85	14	2.8	350	58	140	0.2	22
421125095193101	06-12-85	9.0	0.6	207	14	88	0.3	21
421004095272701	06-12-85	16	16	313	17	62	0.3	21
420736095342401	06-17-85	12	3.1	312	43	92	0.4	21
413517094114101	08-20-85	12	2.1	279	22	89	0.25	25
413638093530901	08-20-85	280	22	222	110	730	2.9	13
422059091291401	06-25-85	18	3.0	292	<0.5	41	0.35	8.3
422705090561201	06-24-85	16	3.4	277	37	81	0.1	16
422910091072701	06-24-85	22	3.4	261	54	72	<0.1	13
423136090383501	06-25-85	8.1	1.5	221	12	43	0.1	19
423134090383401	06-25-85	7.3	1.2	161	10	24	0.15	18
421731091011501	06-24-85	7.8	0.6	323	18	38	0.15	17
425036091480101	07-31-85	12	5.5	248	13	40	0.25	12
425606091565501	07-30-85	13	0.8	247	25	84	0.25	12
430329092020901	07-30-85	26	2.6	284	1.0	150	2.2	6.6
430919092351801	08-27-85	32	3.5	313	0.5	11	1.7	9.5

STATION NUMBER	DATE	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) (00515)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
405631094560802	08-20-85	384	0.31	--	--	1400	110	<10
413537094532701	06-10-85	386	5.77	0.08	0.07	500	960	<10
413234094552401	06-10-85	583	0.04	0.15	0.17	8200	1100	<10
413743095041401	06-11-85	447	<0.02	0.46	0.41	15000	1700	<10
414330094524801	06-11-85	402	2.89	0.02	0.13	10	10	<10
414245094524901	06-11-85	478	<0.02	0.13	0.18	1300	1500	<10
415950091512501	07-03-85	407	0.11	--	--	1100	<10	<10
420030092053001	09-25-85	783	<0.02	--	--	1600	20	<10
415955092120701	09-25-85	1300	<0.02	--	--	710	<10	<10
420520091524701	07-03-85	351	0.16	--	--	740	20	<10
421016092015901	06-25-85	382	0.09	--	--	2600	190	<10
421326091525301	07-03-85	286	0.09	--	--	40	<10	<10
422801092152801	07-31-85	315	3.60	--	--	20	20	<10
422805092165901	07-31-85	374	0.11	--	--	1200	60	<10
423112092213901	08-15-85	311	3.55	--	--	10	10	<10
422818092212801	08-15-85	412	0.40	--	--	10	60	<10
423139092261401	08-15-85	307	6.44	--	--	<10	<10	<10
425058092315601	07-30-85	259	6.20	--	--	<10	<10	<10
421900092002001	08-09-85	313	2.66	--	--	50	<10	<10
422833091431701	08-09-85	379	0.55	--	--	1200	50	<10
423710091540001	08-09-85	252	8.44	--	--	20	<10	<10
423837095135002	05-23-85	642	<0.02	1.60	0.44	2800	160	<10
423512092521001	07-08-85	401	0.09	--	--	830	<10	<10
424239092350001	07-08-85	272	3.11	<0.01	0.05	10	<10	<10
424704092400803	07-08-85	278	2.89	--	--	10	10	<10
424627092542302	07-09-85	316	4.00	0.01	0.02	<10	<10	<10
424524092474601	07-08-85	245	0.13	--	--	390	20	<10
424455092581801	07-09-85	377	0.09	--	--	800	30	<10
425355092475801	07-09-85	251	0.11	--	--	260	20	<10
421614094325101	08-13-85	1090	<0.02	1.10	0.07	2200	240	<10
415147094403501	05-22-85	300	2.44	0.01	0.02	70	50	<10
415430095041601	05-22-85	681	5.32	0.21	0.04	230	190	<10
420024094575901	05-22-85	559	8.90	0.01	0.05	10	10	<10
411637094520201	08-22-85	212	0.33	--	--	270	50	<10
412429094594301	08-22-85	313	4.66	0.01	0.04	<10	90	<10
412714094460701	08-15-85	384	<0.02	--	--	<10	430	<10
430756093263201	06-18-85	329	0.07	--	--	690	10	<10
431426093073301	06-18-85	332	0.07	--	--	670	10	<10
430923095114501	12-04-84	337	1.30	--	--	900	330	<10
430922095193501	12-04-84	530	10.2	--	--	<10	<10	<10
424026091321502	05-09-85	229	27.0	<0.01	<0.01	<10	<10	<10
424653091060801	06-24-85	382	1.15	--	--	20	80	<10
425138091234901	05-09-85	327	0.11	--	--	<10	<10	<10
414921090450401	12-20-84	223	<0.02	--	--	1000	40	<10
414652090153201	01-08-85	247	5.60	--	--	<10	<10	<10
415650095275602	06-17-85	987	11.8	0.03	0.09	30	310	<10
420131095221101	06-17-85	475	3.11	0.06	0.09	120	290	<10
420328095122401	06-18-85	514	6.22	--	--	20	230	<10
420551095185801	06-12-85	436	3.11	<0.01	0.07	90	110	<10
420415095352201	06-12-85	701	1.73	0.18	0.01	1400	1400	<10
421125095193101	06-12-85	412	0.36	--	--	<10	1600	<10
421004095272701	06-12-85	504	6.66	0.03	0.05	10	90	<10
420736095342401	06-17-85	566	1.98	--	--	660	470	<10
413517094114101	08-20-85	510	<0.02	--	--	1600	310	<10
413638093530901	08-20-85	1500	<0.02	--	--	410	<10	<10
422059091291401	06-25-85	336	0.16	--	--	160	20	<10
422705090561201	06-24-85	508	8.21	--	--	10	10	<10
422910091072701	06-24-85	515	12.0	--	--	<10	<10	<10
423136090383501	06-25-85	289	0.16	1.00	--	1400	2400	<10
423134090383401	06-25-85	228	0.09	--	--	420	2000	<10
421731091011501	06-24-85	423	3.77	--	--	10	10	<10
425036091480101	07-31-85	350	3.33	--	--	<10	20	<10
425606091565501	07-30-85	421	0.53	--	--	690	320	<10
430329092020901	07-30-85	489	0.09	--	--	860	10	<10
430919092351801	08-27-85	319	<0.02	--	--	420	10	<10

STATION NUMBER	DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
405631094560802	08-20-85	200	<1	<10	10	<10	<1.0	<10
413537094532701	06-10-85	300	<1	<10	20	<10	<1.0	<10
413234094552401	06-10-85	500	<1	<10	20	<10	<1.0	<10
413743095041401	06-11-85	500	<1	<10	40	<10	<1.0	<10
414330094524801	06-11-85	200	<1	<10	<10	<10	<1.0	<10
414245094524901	06-11-85	<100	<1	<10	<10	<10	<1.0	<10
415950091512501	07-03-85	300	<1	<10	<10	<10	<1.0	<10
420030092053001	09-25-85	<100	<1	<10	<10	<10	<1.0	<10
415955092120701	09-25-85	<100	<1	<10	<10	<10	<1.0	<10
420520091524701	07-03-85	<100	<1	<10	<10	<10	<1.0	<10
421016092015901	06-25-85	300	<1	<10	<10	<10	<1.0	<10
421326091525301	07-03-85	<100	<1	<10	10	<10	<1.0	<10
422801092152801	07-31-85	300	<1	<10	<10	<10	<1.0	<10
422805092165901	07-31-85	200	<1	<10	<10	<10	<1.0	<10
423112092213901	08-15-85	300	<1	<10	20	<10	<1.0	<10
422818092212801	08-15-85	<100	<1	<10	<10	<10	<1.0	<10
423139092261401	08-15-85	<100	<1	<10	<10	<10	<1.0	<10
425058092315601	07-30-85	200	<1	<10	<10	<10	<1.0	<10
421900092002001	08-09-85	200	<1	<10	<10	<10	<1.0	<10
422833091431701	08-09-85	100	<1	<10	10	<10	<1.0	<10
423710091540001	08-09-85	100	<1	<10	10	<10	<1.0	<10
423837095135002	05-23-85	<100	<1	<10	<10	<10	<1.0	<10
423512092521001	07-08-85	<100	<1	<10	20	<10	<1.0	<10
424239092350001	07-08-85	200	<1	<10	10	<10	<1.0	<10
424704092400803	07-08-85	200	<1	<10	<10	<10	<1.0	<10
424627092542302	07-09-85	200	<1	<10	30	<10	<1.0	<10
424524092474601	07-08-85	200	<1	<10	20	<10	<1.0	<10
424455092581801	07-09-85	200	<1	<10	20	<10	<1.0	<10
425355092475801	07-09-85	300	<1	<10	20	<10	<1.0	<10
421614094325101	08-13-85	100	<1	<10	10	<10	<1.0	<10
415147094403501	05-22-85	200	<1	<10	20	<10	<1.0	<10
415430095041601	05-22-85	100	<1	<10	<10	<10	<1.0	<10
420024094575901	05-22-85	100	<1	<10	<10	<10	<1.0	<10
411637094520201	08-22-85	<100	<1	<10	10	<10	<1.0	<10
412429094594301	08-22-85	<100	<1	<10	<10	<10	<1.0	<10
412714094460701	08-15-85	<100	<1	<10	10	<10	<1.0	<10
430756093263201	06-18-85	300	<1	<10	10	<10	<1.0	<10
431426093073301	06-18-85	200	<1	<10	<10	<10	<1.0	<10
430923095114501	12-04-84	300	<1	<10	<10	<10	<1.0	<10
430922095193501	12-04-84	200	<1	<10	30	<10	<1.0	<10
424026091321502	05-09-85	<100	<1	<10	30	<10	<1.0	<10
424653091060801	06-24-85	<100	<1	<10	10	<10	<1.0	<10
425138091234901	05-09-85	100	<1	<10	30	<10	<1.0	<10
414921090450401	12-20-84	200	<1	<10	<10	<10	<1.0	<10
414652090153201	01-08-85	100	<1	<10	<10	<10	<1.0	<10
415650095275602	06-17-85	<100	<1	<10	60	<10	<1.0	<10
420131095221101	06-17-85	300	<1	<10	20	<10	<1.0	<10
420328095122401	06-18-85	200	<1	<10	30	<10	<1.0	<10
420551095185801	06-12-85	100	<1	<10	10	<10	<1.0	<10
420415095352201	06-12-85	400	<1	<10	30	<10	<1.0	<10
421125095193101	06-12-85	200	<1	<10	20	<10	<1.0	<10
421004095272701	06-12-85	<100	<1	<10	<10	<10	<1.0	<10
420736095342401	06-17-85	200	<1	<10	20	<10	<1.0	<10
413517094114101	08-20-85	300	<1	<10	10	<10	<1.0	<10
413638093530901	08-20-85	<100	<1	<10	50	<10	<1.0	<10
422059091291401	06-25-85	<100	<1	<10	10	<10	<1.0	<10
422705090561201	06-24-85	<100	<1	<10	30	<10	<1.0	<10
422910091072701	06-24-85	100	<1	<10	30	<10	<1.0	<10
423136090383501	06-25-85	200	<1	<10	<10	<10	<1.0	<10
423134090383401	06-25-85	100	<1	<10	10	<10	<1.0	<10
421731091011501	06-24-85	<100	<1	<10	20	<10	<1.0	<10
425036091480101	07-31-85	<100	<1	<10	<10	<10	<1.0	<10
425606091565501	07-30-85	200	<1	<10	<10	<10	<1.0	<10
430329092020901	07-30-85	<100	<1	<10	<10	<10	<1.0	<10
430919092351801	08-27-85	200	<1	<10	<10	<10	<1.0	<10

STATION NUMBER	DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	RADIUM 226, DIS-SOLVED (PCI/L) (09503)	RADIUM 228 DIS-SOLVED (PCI/L AS RA-228) (81366)
405631094560802	08-20-85	<10	<10	1.3	2.0	--	--
413537094532701	06-10-85	<10	<10	3.2	1.0	0.7	1.1
413234094552401	06-10-85	<10	10	7.4	3.0	0.8	0.9
413743095041401	06-11-85	<10	<10	1.0	6.0	--	--
414330094524801	06-11-85	<10	<10	0.3	2.0	--	--
414245094524901	06-11-85	<10	<10	1.2	1.0	--	--
415950091512501	07-03-85	<10	<10	15	5.0	5.7	1.5
420030092053001	09-25-85	<10	<10	17	33	4.5	3.0
415955092120701	09-25-85	<10	<10	3.2	14	0.9	1.7
420520091524701	07-03-85	<10	<10	2.6	4.0	2.4	2.5
421016092015901	06-25-85	<10	<10	1.3	<0.5	--	--
421326091525301	07-03-85	<10	<10	3.4	5.0	2.2	<0.6
422801092152801	07-31-85	<10	<10	<0.2	2.0	--	--
422805092165901	07-31-85	<10	<10	1.8	<0.5	--	--
423112092213901	08-15-85	<10	<10	0.7	2.0	--	--
422818092212801	08-15-85	<10	<10	1.9	2.0	--	--
423139092261401	08-15-85	<10	<10	0.4	2.0	--	--
425058092315601	07-30-85	<10	<10	1.6	<0.5	--	--
421900092002001	08-09-85	<10	<10	3.2	5.0	2.8	1.0
422833091431701	08-09-85	<10	<10	2.8	4.0	--	--
423710091540001	08-09-85	<10	10	1.2	1.0	--	--
423837095135002	05-23-85	<10	<10	0.9	6.0	0.7	1.9
423512092521001	07-08-85	<10	<10	<0.3	6.0	--	--
424239092350001	07-08-85	<10	<10	1.0	2.0	--	--
424704092400803	07-08-85	<10	<10	1.5	7.0	--	--
424627092542302	07-09-85	<10	10	2.2	4.0	--	--
424524092474601	07-08-85	<10	<10	0.9	3.0	--	--
424455092581801	07-09-85	<10	10	3.1	<0.5	1.2	1.0
425355092475801	07-09-85	<10	20	1.9	1.0	--	--
421614094325101	08-13-85	<10	<10	7.3	7.0	4.4	1.3
415147094403501	05-22-85	<10	10	2.8	8.0	--	--
415430095041601	05-22-85	<10	<10	3.4	2.0	0.2	<0.6
420024094575901	05-22-85	<10	<10	1.3	0.4	--	--
411637094520201	08-22-85	<10	20	1.4	2.0	--	--
412429094594301	08-22-85	<10	10	3.5	2.0	0.8	1.8
412714094460701	08-15-85	<10	<10	2.4	4.0	--	--
430756093263201	06-18-85	<10	<10	1.2	5.0	--	--
431426093073301	06-18-85	<10	<10	1.7	3.0	--	--
430923095114501	12-04-84	<10	<10	0.7	7.0	--	--
430922095193501	12-04-84	<10	10	<0.2	4.0	--	--
424026091321502	05-09-85	<10	<10	1.3	1.0	--	--
424653091060801	06-24-85	<10	<10	3.6	2.0	1.7	0.8
425138091234901	05-09-85	<10	30	3.7	5.0	2.9	1.2
414921090450401	12-20-84	<10	<10	0.5	3.0	--	--
414652090153201	01-08-85	<10	<10	0.3	5.0	--	--
415650095275602	06-17-85	<10	10	9.0	9.0	0.3	0.9
420131095221101	06-17-85	<10	<10	1.1	3.0	--	--
420328095122401	06-18-85	<10	10	3.5	1.0	0.4	<0.6
420551095185801	06-12-85	<10	<10	1.8	7.0	--	--
420415095352201	06-12-85	<10	<10	1.6	6.0	--	--
421125095193101	06-12-85	<10	<10	0.7	1.0	--	--
421004095272701	06-12-85	<10	20	1.9	4.0	--	--
420736095342401	06-17-85	<10	10	14	3.0	0.8	1.1
413517094114101	08-20-85	<10	<10	1.5	5.0	--	--
413638093530901	08-20-85	<10	<10	19	38	11	<0.6
422059091291401	06-25-85	<10	<10	1.0	<0.5	--	--
422705090561201	06-24-85	<10	<10	1.7	1.0	--	--
422910091072701	06-24-85	<10	<10	0.9	2.0	--	--
423136090383501	06-25-85	<10	<10	<0.1	1.0	--	--
423134090383401	06-25-85	<10	<10	1.5	<0.5	--	--
421731091011501	06-24-85	<10	<10	1.5	0.5	--	--
425036091480101	07-31-85	<10	<10	2.6	4.0	--	--
425606091565501	07-30-85	<10	<10	2.6	4.0	--	--
430329092020901	07-30-85	<10	<10	8.7	12	2.3	0.9
430919092351801	08-27-85	<10	<10	0.4	1.0	--	--

STATION NUMBER	DATE	ATRA-ZINE, TOTAL (UG/L) (39630)	CYAN-AZINE TOTAL (UG/L) (81757)	METRI-BUZIN IN WHOLE WATER (UG/L) (81408)	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	METOLA-CHLOR IN WHOLE WATER (UG/L) (39356)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)
405631094560802	08-20-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413537094532701	06-10-85	0.49	1.6	0.13	0.18	0.71	<0.05
413234094552401	06-10-85	<0.1	0.11	<0.05	<0.1	<0.1	<0.05
413743095041401	06-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414330094524801	06-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414245094524901	06-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
415950091512501	07-03-85	--	--	--	--	--	--
420030092053001	09-25-85	--	--	--	--	--	--
415955092120701	09-25-85	--	--	--	--	--	--
420520091524701	07-03-85	--	--	--	--	--	--
421016092015901	06-25-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421326091525301	07-03-85	--	--	--	--	--	--
422801092152801	07-31-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
422805092165901	07-31-85	--	--	--	--	--	--
423112092213901	08-15-85	0.37	<0.1	<0.05	<0.1	<0.1	<0.05
422818092212801	08-15-85	--	--	--	--	--	--
423139092261401	08-15-85	--	--	--	--	--	--
425058092315601	07-30-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421900092002001	08-09-85	--	--	--	--	--	--
422833091431701	08-09-85	--	--	--	--	--	--
423710091540001	08-09-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
423837095135002	05-23-85	--	--	--	--	--	--
423512092521001	07-08-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424239092350001	07-08-85	--	--	--	--	--	--
424704092400803	07-08-85	--	--	--	--	--	--
424627092542302	07-09-85	--	--	--	--	--	--
424524092474601	07-08-85	--	--	--	--	--	--
424455092581801	07-09-85	--	--	--	--	--	--
425355092475801	07-09-85	--	--	--	--	--	--
421614094325101	08-13-85	--	--	--	--	--	--
415147094403501	05-22-85	--	--	--	--	--	--
415430095041601	05-22-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420024094575901	05-22-85	--	--	--	--	--	--
411637094520201	08-22-85	--	--	--	--	--	--
412429094594301	08-22-85	--	--	--	--	--	--
412714094460701	08-15-85	--	--	--	--	--	--
430756093263201	06-18-85	--	--	--	--	--	--
431426093073301	06-18-85	--	--	--	--	--	--
430923095114501	12-04-84	--	--	--	--	--	--
430922095193501	12-04-84	--	--	--	--	--	--
424026091321502	05-09-85	--	--	--	--	--	--
424653091060801	06-24-85	--	--	--	--	--	--
425138091234901	05-09-85	--	--	--	--	--	--
414921090450401	12-20-84	--	--	--	--	--	--
414652090153201	01-08-85	--	--	--	--	--	--
415650095275602	06-17-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420131095221101	06-17-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420328095122401	06-18-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420551095185801	06-12-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420415095352201	06-12-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421125095193101	06-12-85	0.31	<0.1	<0.05	<0.1	<0.1	<0.05
421004095272701	06-12-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420736095342401	06-17-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413517094114101	08-20-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413638093530901	08-20-85	--	--	--	--	--	--
422059091291401	06-25-85	--	--	--	--	--	--
422705090561201	06-24-85	--	--	--	--	--	--
422910091072701	06-24-85	0.37	<0.1	<0.05	<0.1	<0.1	<0.05
423136090383501	06-25-85	--	--	--	--	--	--
423134090383401	06-25-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421731091011501	06-24-85	--	--	--	--	--	--
425036091480101	07-31-85	0.25	<0.1	<0.05	<0.1	<0.1	<0.05
425606091565501	07-30-85	0.27	<0.1	<0.05	<0.1	<0.1	<0.05
430329092020901	07-30-85	--	--	--	--	--	--
430919092351801	08-27-85	--	--	--	--	--	--

STATION NUMBER	DATE	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DYFO-NATE (UG/L) (81294)	TERBU-FOS (UG/L) (82088)	PHORATE OTAL (UG/L) (39023)
405631094560802	08-20-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413537094532701	06-10-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413234094552401	06-10-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413743095041401	06-11-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414330094524801	06-11-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414245094524901	06-11-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
415950091512501	07-03-85	--	--	--	--	--	--
420030092053001	09-25-85	--	--	--	--	--	--
415955092120701	09-25-85	--	--	--	--	--	--
420520091524701	07-03-85	--	--	--	--	--	--
421016092015901	06-25-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
421326091525301	07-03-85	--	--	--	--	--	--
422801092152801	07-31-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
422805092165901	07-31-85	--	--	--	--	--	--
423112092213901	08-15-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
422818092212801	08-15-85	--	--	--	--	--	--
423139092261401	08-15-85	--	--	--	--	--	--
425058092315601	07-30-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
421900092002001	08-09-85	--	--	--	--	--	--
422833091431701	08-09-85	--	--	--	--	--	--
423710091540001	08-09-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
423837095135002	05-23-85	--	--	--	--	--	--
423512092521001	07-08-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424239092350001	07-08-85	--	--	--	--	--	--
424704092400803	07-08-85	--	--	--	--	--	--
424627092542302	07-09-85	--	--	--	--	--	--
424524092474601	07-08-85	--	--	--	--	--	--
424455092581801	07-09-85	--	--	--	--	--	--
425355092475801	07-09-85	--	--	--	--	--	--
421614094325101	08-13-85	--	--	--	--	--	--
415147094403501	05-22-85	--	--	--	--	--	--
415430095041601	05-22-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
420024094575901	05-22-85	--	--	--	--	--	--
411637094520201	08-22-85	--	--	--	--	--	--
412429094594301	08-22-85	--	--	--	--	--	--
412714094460701	08-15-85	--	--	--	--	--	--
430756093263201	06-18-85	--	--	--	--	--	--
431426093073301	06-18-85	--	--	--	--	--	--
430923095114501	12-04-84	--	--	--	--	--	--
430922095193501	12-04-84	--	--	--	--	--	--
424026091321502	05-09-85	--	--	--	--	--	--
424653091060801	06-24-85	--	--	--	--	--	--
425138091234901	05-09-85	--	--	--	--	--	--
414921090450401	12-20-84	--	--	--	--	--	--
414652090153201	01-08-85	--	--	--	--	--	--
415650095275602	06-17-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420131095221101	06-17-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420328095122401	06-18-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
420551095185801	06-12-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420415095352201	06-12-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
421125095193101	06-12-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
421004095272701	06-12-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420736095342401	06-17-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
413517094114101	08-20-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413638093530901	08-20-85	--	--	--	--	--	--
422059091291401	06-25-85	--	--	--	--	--	--
422705090561201	06-24-85	--	--	--	--	--	--
422910091072701	06-24-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
423136090383501	06-25-85	--	--	--	--	--	--
423134090383401	06-25-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
421731091011501	06-24-85	--	--	--	--	--	--
425036091480101	07-31-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
425606091565501	07-30-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
430329092020901	07-30-85	--	--	--	--	--	--
430919092351801	08-27-85	--	--	--	--	--	--

STATION NUMBER		STATION NAME	COUNTY	DATE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)
430741092540601096l7W18CCAD		1916RUDD TOWN WELL NO 1	FLOYD	08-06-85	10:00	344CDVL	200.00
430836093001701096l8W07DDAD		1958NORA SPRINGS NO 1	FLOYD	08-06-85	11:30	344CDVL	289.00
424312093132101091 20W05DADD		1975HAMPTON NO 6	FRANKLIN	07-09-85	10:45	111ALVM	44.00
424537093220502092211W19DCCD		1951LATIMER IOWA NO 2	FRANKLIN	07-10-85	13:30	330MSSP	170.00
425342093133701093 20W05DDBB		1977SHEFFIELD 3	FRANKLIN	07-10-85	12:10	111ALVM	27.00
403604095394401067 42W21DDCA		1973HAMBURG 5	FREMONT	08-14-85	10:00	111ALVM	75.00
405225095335001068 41W14CDBB		1966RANDOLPH 3	FREMONT	08-14-85	10:15	111ALVM	53.00
404224095310601068 41W14CDBB		1973RIVERTON 2	FREMONT	08-21-85	12:00	111ALVM	57.00
415527094114901082 29W11CDB	05862	1945RIPPEY TOWN NO 3	GREENE	08-13-85	09:00	112RCLC	135.00
420047094223901083 30W07DADA		1953JEFFERSON TOWN NO 4	GREENE	08-13-85	11:00	112HCKC	146.00
420104094324301083 32W11BDBD		1977SCRANTON TOWN NO 4	GREENE	08-13-85	12:00	112PLSC	212.00
421336092524401086 17W30CDDB	19098	CONRAD #4	GRUNDY	11-13-85	08:20	330MSSP	130.00
421856092355101087 15W28DBDD		1978REINBECK 3	GRUNDY	11-13-85	13:25	344CDVL	420.00
421327092492201086 17W34BB		1978BEAMAN 2	GRUNDY	11-13-85	09:30	330MSSP	125.00
414035094302501079 31W06CDBC		1929GUTHRIE CENTER NO 1	GUTHRIE	05-21-85	13:05	112PLSC	60.00
414035094302502079 31W06CDBC		1941GUTHRIE CENTER NO 2	GUTHRIE	05-21-85	0 :	112PLSC	62.00
414624094211201080 30W04BBAD	13717	1962YALE NO 1	GUTHRIE	05-21-85	07:00	112PLSC	82.00
415034094254801081 31W11BDCA		1898TOWN OF BAGLEY	GUTHRIE	05-21-85	12:00	112RLCL	96.00
421417093360701086 24W26AAAD	06622	1954RANDALL NO 1	HAMILTON	06-04-85	12:15	339KDRK	347.00
421724093474101086 25W05BCCB		1973STANHOPE NO 5	HAMILTON	06-04-85	13:15	330MSSP	585.00
421828093381501087 24W34BBCC		1932JEWELL NO 1	HAMILTON	06-04-85	11:00	112PLSC	68.00
422904093324201089 23W27DCDB	18640	1965WILLIAMS TOWN NO 3	HAMILTON	06-04-85	09:15	330MSSP	425.00
425528093364501094 23W30CCDA	16849	1964GOODELL TOWN #2	HANCOCK	06-04-85	10:00	339HMPN	190.00
425936093572401094 26W06ABAA	04864	1950CORWITH TOWN #1	HANCOCK	06-04-85	14:45	339HMPN	120.00
430015093360501095 23W31ACA	11168	1959KLEMME TOWN #2	HANCOCK	06-04-85	11:15	340DVNN	185.00
430627093361301096 23W30ABD	00134	1932GARNER TOWN #1	HANCOCK	06-04-85	12:30	344CDVL	225.00
430539093482201096 25W33BAAC	00554	1937BRITT IOWA #2	HANCOCK	06-04-85	13:40	344CDVL	197.00
421455093034601086 19W21ADBD	20260	1967UNION NO 3	HARDIN	06-27-85	10:10	339HMPN	195.00
421658093101101086 20W03CDC	02364	1946NEW PROVIDENCE CITY	HARDIN	06-26-85	13:45	330MSSP	485.00
421544093002201086 19W13ACAA		1955WHITTEN 1	HARDIN	11-13-85	10:35	330MSSP	188.00
422453093035001088 19W21DDC	05188	1951STEAMBOAT ROCK	HARDIN	06-26-85	12:30	339HMPN	110.00
423323093034701089 19W02BB	01576	1942ACKLEY NO 3	HARDIN	07-09-85	09:05	339KDRK	140.00
415003095552401081 44W13BBBB		1929PISGAH NO 1	HARRISON	02-08-85	10:45	111SDRV	102.00
405810091330511071 06W09ABAC	01968	1946MT PLEASANT NO 4	HENRY	07-11-85	09:30	360OVCB	1809.00
410740091260001073 05W16AA	00119	1915WINFIELD CITY WELL	HENRY	06-27-85	12:15	360OVCB	1260.00
410749091324001073 06W15BBB	18276	1965OLDS TOWN WELL NO 1	HENRY	06-27-85	09:30	330MSSP	274.00
410749091324101073 06W15BBBC	24356	1977OLDS TOWN WELL NO 4	HENRY	06-27-85	10:30	360OVCB	1910.00
410851091394401073 07W09AABD	25274	1951TOWN OF WAYLAND NO 2	HENRY	06-28-85	09:00	360OVCB	1900.00
432257092065701099 11W23BCBB	17075	1965CRESCO CITY 3	HOWARD	08-07-85	09:45	371TMPL	1145.00
432650092170201100 12W29DBDC	01836	1944LIMESPRINGS 2	HOWARD	08-07-85	11:05	364GLEN	358.00
432923092212501100 13W10DDAB		1898CHESTER NO 1	HOWARD	08-07-85	12:30	340DVNN	176.00
424308094132601091 29W01CCAC		1973HUMBOLDT TOWN WELL	HUMBOLDT	05-30-85	13:15	330MSSP	150.00
423911094233402091 30W33ACCC		1968PIONEER IOWA NO 1	HUMBOLDT	05-30-85	09:00	112PLSC	90.00
424836094030101092 27W05DAAD		1966HARDY TOWN NO 1	HUMBOLDT	05-30-85	11:15	110QRNR	90.00
424548094171901092 29W20DDB	03374	1948RUTLAND IOWA	HUMBOLDT	05-30-85	10:15	339GLMC	75.00
422018095205101087 39W23ABDD		1923ARTHUR TOWN NO 1	IDA	12-05-84	14:05	112PLSC	24.00
422106095280201087 40W14ACBB		1965IDA GROVE NO 4	IDA	12-05-84	13:05	112PLSC	68.00
421908095353701087 41W26CBBB		1972BATTLE CREEK NO 3	IDA	12-05-84	11:40	112PLSC	59.00
423033095250501089 39W23CADA		1957GALVA TOWN NO 2	IDA	05-23-85	11:35	112PLSC	50.00
420432090401201084 02E24AAB		MAQUOKETA 3	JACKSON	12-20-84	14:00	112PLSC	60.00
414251092541701081 8W26AADC		1939KELLOGG NO 2	JASPER	09-24-85	14:20	111ALVM	30.00
420009091084901083 03W13BA		OLIN CITY	JONES	07-19-85	09:15	355HPKN	180.00
420102091214101083 04W07B	21792	1969MARTELLE TOWN #2	JONES	07-18-85	09:00	355NIGR	249.00
420631091172001084 04W03DDD	07306	ANAMOSA IOWA 2	JONES	07-17-85	09:15	358KNKK	405.00
420747091105801085 03W34ACC	03334	AMBER IOWA	JONES	07-17-85	11:15	358KNKK	405.00
421420091142001086 03W21CD	07032	MONTICELLO 3	JONES	07-17-85	14:00	350SLRN	603.00
412809092142001077 12W15CCBC	08000	1957KESWICK NO 1	KEOKUK	12-18-84	09:30	111ALVM	39.00
425426094050301093 27W06BABB		1967LUVERNE NO 2	KOSSUTH	05-31-85	15:40	330MSSP	164.00
430340094252702095 30W08BBCD		1958WHITTEMORE NO 2	KOSSUTH	05-31-85	14:30	344CDVL	286.00
431154094130701097 29W24CDCD		1965BURT NO 3	KOSSUTH	05-31-85	13:15	360ODVC	600.00
431737094125601098 29W24ACBC	12277	1960BANCROFT IA #3	KOSSUTH	05-31-85	11:05	364ODVCM	540.00
403804091174001067 04W02BBDC		1979FORT MADISON NO 2	LEE	05-21-85	14:30	111ALVM	161.00
403748091174301067 04W02CBBA		1967FORT MADISON NO 1	LEE	05-21-85	14:45	110QRNR	149.00
410557091023701073 02W25BBCC		1973OAKVILLE NO 1	LOUISA	07-09-85	15:00	110ORNR	126.00
411056091111501074 03W27BDDD		1976WAPELLO NO 2	LOUISA	04-10-85	12:00	112PLSC	77.00

GROUND-WATER QUALITY DATA

STATION NUMBER	DATE	FLOW RATE (GPM) (00058)	PUMP OR FLOW PERIOD PRIOR TO SAMPLING (MIN) (72004)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
430741092540601	08-06-85	50	20	580	7.6	270	72	21
430836093001701	08-06-85	200	1440	690	7.8	350	92	30
424312093132101	07-09-85	300	120	795	7.2	400	100	35
424537093220502	07-10-85	120	30	770	7.1	350	92	29
425342093133701	07-10-85	60	30	490	7.6	240	60	21
403604095394401	08-14-85	--	60	800	7.3	390	100	35
405225095335001	08-14-85	140	60	810	7.8	400	99	36
404224095310601	08-21-85	110	60	660	7.3	310	86	23
415527094114901	08-13-85	100	30	770	7.2	380	100	32
420047094223901	08-13-85	300	30	940	7.3	430	120	32
420104094324301	08-13-85	200	90	660	7.3	310	77	29
421336092524401	11-13-85	165	30	596	7.4	310	86	24
421856092355101	11-13-85	280	90	944	7.3	520	130	48
421327092492201	11-13-85	--	40	740	7.5	390	90	39
414035094302501	05-21-85	120	40	625	6.9	270	74	20
414035094302502	05-21-85	90	40	640	7.1	300	85	21
414624094211201	05-21-85	100	40	580	7.1	330	84	28
415034094254801	05-21-85	70	40	630	7.3	320	87	25
421417093360701	06-04-85	45	30	640	7.1	330	71	37
421724093474101	06-04-85	90	30	1100	7.2	490	99	60
421828093381501	06-04-85	180		780	7.1	410	110	34
422904093324201	06-04-85	135	60	650	7.2	360	73	43
425528093364501	06-04-85	120		750	7.5	340	84	32
425936093572401	06-04-85	130	60	1060	7.4	370	97	32
430015093360501	06-04-85	100	20	960	7.4	410	100	38
430627093361301	06-04-85	170	180	780	7.1	370	86	37
430539093482201	06-04-85	400	15	620	7.3	310	79	27
421455093034601	06-27-85	110	30	765	7.2	350	95	28
421658093101101	06-26-85	65	15	400	7.8	100	22	11
421544093002201	11-13-85	50	30	635	7.2	340	84	31
422453093035001	06-26-85	65	30	810	7.3	370	92	34
423323093034701	07-09-85	150	30	1100	7.0	480	140	31
415003095552401	02-08-85	150	30	689	7.3	360	90	33
405810091330511	07-11-85	950	90	1900	7.1	420	99	43
410740091260001	06-27-85	120	40	1600	7.8	230	49	25
410749091324001	06-27-85	6	40	832	7.7	120	23	15
410749091324101	06-27-85	60	30	1600	7.2	430	100	44
410851091394401	06-28-85	250	30	1630	7.4	450	99	49
432257092065701	08-07-85	600	20	550	7.5	250	66	21
432650092170201	08-07-85	240	20	460	7.4	220	60	17
432923092212501	08-07-85	250	20	600	7.2	300	82	22
424308094132601	05-30-85	1000	360	670	6.9	360	98	28
423911094233402	05-30-85	12		1250	7.2	560	140	51
424836094030101	05-30-85	--	20	650	7.5	460	120	38
424548094171901	05-30-85	--		680	7.4	380	99	31
422018095205101	12-05-84	100	20	590	7.5	350	98	25
422106095280201	12-05-84	500	30	960	7.6	460	140	27
421908095353701	12-05-84	250	30	625	7.7	380	100	31
423033095250501	05-23-85	75	1440	900	7.2	480	140	32
420432090401201	12-20-84	550	15	762	7.1	400	96	38
414251092541701	09-24-85	40	10	1050	6.8	410	120	28
420009091084901	07-19-85	200	30	540	7.4	280	64	29
420102091214101	07-18-85	100	30	360	7.3	180	47	15
420631091172001	07-17-85	190	30	950	7.3	410	100	40
420747091105801	07-17-85	20	40	640	7.2	310	72	32
421420091142001	07-17-85	445	30	620	7.4	310	78	29
412809092142001	12-18-84	40	30	605	7.2	310	80	26
425426094050301	05-31-85	195	20	760	7.2	390	100	33
430340094252702	05-31-85	120	30	1250	7.3	580	150	50
431154094130701	05-31-85	350	30	900	7.3	390	100	35
431737094125601	05-31-85	180	30	1300	7.1	680	180	57
403804091174001	05-21-85	350	60	470	7.3	220	57	18
403748091174301	05-21-85	450	60	650	7.1	330	89	26
410557091023701	07-09-85	--	30	431	7.5	200	54	15
411056091111501	04-10-85	210	150	350	7.5	190	55	12

STATION NUMBER	DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
430741092540601	08-06-85	7.2	1.6	188	9.5	48	0.3	13
430836093001701	08-06-85	10	3.3	318	11	35	0.9	12
424312093132101	07-09-85	5.6	2.5	304	9.5	68	0.2	28
424537093220502	07-10-85	14	1.3	368	<0.5	3.1	0.4	21
425342093133701	07-10-85	6.6	1.5	209	9.0	21	0.15	21
403604095394401	08-14-85	16	5.3	354	16	51	0.45	29
405225095335001	08-14-85	15	4.9	281	32	93	0.4	20
404224095310601	08-21-85	16	3.3	320	4.0	36	0.4	24
415527094114901	08-13-85	20	4.6	433	1.5	1.0	0.5	29
420047094223901	08-13-85	39	2.5	338	86	50	0.25	25
420104094324301	08-13-85	22	3.5	347	<0.5	14	0.4	18
421336092524401	11-13-85	10	1.1	267	9.0	38	0.35	17
421856092355101	11-13-85	12	3.8	216	1.0	330	1.5	12
421327092492201	11-13-85	14	3.3	343	8.5	50	0.45	12
414035094302501	05-21-85	12	1.9	134	15	130	0.2	9.0
414035094302502	05-21-85	14	2.4	136	18	140	0.2	8.6
414624094211201	05-21-85	5.7	1.9	314	2.0	10	0.45	7.2
415034094254801	05-21-85	7.3	2.5	300	5.0	22	0.3	5.8
421417093360701	06-04-85	12	3.2	345	1.0	1.1	2.2	11
421724093474101	06-04-85	54	15	335	6.5	290	2.5	7.4
421828093381501	06-04-85	12	5.4	370	10	52	0.25	35
422904093324201	06-04-85	33	3.3	419	2.5	<1.0	1.4	11
425528093364501	06-04-85	10	1.4	348	5.0	11	0.3	31
425936093572401	06-04-85	92	4.4	411	2.0	160	0.4	24
430015093360501	06-04-85	30	9.1	353	5.5	140	0.85	9.2
430627093361301	06-04-85	7.6	2.8	365	2.0	8.7	0.7	18
430539093482201	06-04-85	8.2	2.6	311	2.5	27	0.3	27
421455093034601	06-27-85	9.4	3.9	261	18	58	0.15	18
421658093101101	06-26-85	40	2.1	174	2.0	1.2	2.0	9.3
421544093002201	11-13-85	20	3.3	397	2.5	28	0.4	13
422453093035001	06-26-85	11	1.4	316	12	46	0.2	18
423323093034701	07-09-85	35	1.4	351	50	120	0.2	16
415003095552401	02-08-85	12	4.7	363	1.0	12	0.3	30
405810091330511	07-11-85	240	23	229	130	560	1.5	10
410740091260001	06-27-85	160	5.8	362	22	150	0.6	7.3
410749091324001	06-27-85	160	4.0	313	29	92	1.4	7.4
410749091324101	06-27-85	190	21	233	68	520	0.95	10
410851091394401	06-28-85	220	19	235	63	560	1.4	11
432257092065701	08-07-85	1.5	0.9	232	1.0	20	0.15	9.8
432650092170201	08-07-85	4.3	1.7	206	2.0	20	0.5	11
432923092212501	08-07-85	11	2.6	275	1.0	28	0.8	13
424308094132601	05-30-85	6.1	3.4	263	16	61	0.35	22
423911094233402	05-30-85	73	2.9	433	1.5	320	0.4	23
424836094030101	05-30-85	18	5.1	378	18	68	0.3	30
424548094171901	05-30-85	6.6	3.0	314	3.5	46	0.25	24
422018095205101	12-05-84	11	0.6	254	16	47	0.5	19
422106095280201	12-05-84	30	2.4	302	80	80	4.6	28
421908095353701	12-05-84	9.5	2.7	290	6.0	46	0.3	27
423033095250501	05-23-85	21	2.4	306	28	150	0.3	8.9
420432090401201	12-20-84	17	1.8	304	33	53	0.3	23
414251092541701	09-24-85	33	2.3	205	36	190	<0.2	22
420009091084901	07-19-85	8.8	1.0	277	4.5	16	0.2	15
420102091214101	07-18-85	4.7	0.2	189	<0.5	4.1	0.25	15
420631091172001	07-17-85	24	2.7	331	34	79	0.2	17
420747091105801	07-17-85	17	2.9	315	<0.5	38	0.25	14
421420091142001	07-17-85	4.4	0.5	265	6.5	31	0.2	14
412809092142001	12-18-84	15	2.3	262	9.0	62	0.1	14
425426094050301	05-31-85	17	3.7	357	1.0	0	0.35	23
430340094252702	05-31-85	76	4.9	353	2.5	400	0.45	13
431154094130701	05-31-85	40	7.2	368	2.0	140	0.65	7.3
431737094125601	05-31-85	70	6.7	311	5.0	510	0.55	11
403804091174001	05-21-85	8.0	3.0	226	3.5	<1.0	0.2	11
403748091174301	05-21-85	11	2.4	347	3.0	<1.0	0.25	9.0
410557091023701	07-09-85	8.1	1.1	219	0.5	6.0	1.5	18
411056091111501	04-10-85	5.6	1.6	152	3.5	46	0.1	22

STATION NUMBER	DATE	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L) (00515)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
430741092540601	08-06-85	289	0.09	<0.01	0.02	190	<10	<10
430836093001701	08-06-85	352	0.09	0.16	0.02	630	<10	<10
424312093132101	07-09-85	445	0.09	--	--	1100	430	<10
424537093220502	07-10-85	378	0.09	--	--	2000	120	<10
425342093133701	07-10-85	291	1.82	--	--	10	110	<10
403604095394401	08-14-85	483	<0.02	--	--	6900	470	<10
405225095335001	08-14-85	503	0.47	--	--	1200	220	<10
404224095310601	08-21-85	380	<0.02	--	--	750	270	<10
415527094114901	08-13-85	434	<0.02	--	--	2600	400	<10
420047094223901	08-13-85	557	<0.02	--	--	6400	100	<10
420104094324301	08-13-85	376	<0.02	--	--	3700	150	<10
421336092524401	11-13-85	365	5.77	--	--	<10	<10	<10
421856092355101	11-13-85	700	<0.02	--	--	530	40	<10
421327092492201	11-13-85	396	0.20	--	--	280	250	<10
414035094302501	05-21-85	373	6.88	<0.01	0.09	70	290	<10
414035094302502	05-21-85	401	9.32	0.03	0.08	80	240	<10
414624094211201	05-21-85	260	1.55	0.04	0.05	210	800	<10
415034094254801	05-21-85	284	2.22	0.16	0.02	80	1400	<10
421417093360701	06-04-85	344	0.04	0.23	<0.01	80	<10	<10
421724093474101	06-04-85	718	0.04	1.30	0.01	490	<10	<10
421828093381501	06-04-85	486	<0.02	0.58	0.10	4800	170	<10
422904093324201	06-04-85	416	0.04	0.44	0.01	90	<10	<10
425528093364501	06-04-85	378	0.04	1.10	0.05	2400	<10	10
425936093572401	06-04-85	654	0.07	0.57	0.04	1500	140	<10
430015093360501	06-04-85	532	0.04	0.77	0.01	1800	60	<10
430627093361301	06-04-85	373	0.04	0.22	0.01	110	30	<10
430539093482201	06-04-85	366	0.04	0.34	0.05	1100	160	<10
421455093034601	06-27-85	436	7.77	--	--	20	10	<10
421658093101101	06-26-85	220	0.11	--	--	360	<10	<10
421544093002201	11-13-85	384	<0.02	--	--	570	140	<10
422453093035001	06-26-85	430	2.11	--	--	30	10	<10
423323093034701	07-09-85	674	0.11	--	--	4000	610	<10
415003095552401	02-08-85	391	0.22	--	--	<10	<10	<10
405810091330511	07-11-85	1280	0.09	--	--	190	<10	<10
410740091260001	06-27-85	661	0.20	1.30	<0.01	960	20	<10
410749091324001	06-27-85	530	0.36	--	--	<10	10	<10
410749091324101	06-27-85	1150	0.16	--	--	3600	60	<10
410851091394401	06-28-85	1160	0.22	--	--	1900	20	<10
432257092065701	08-07-85	236	0.02	<0.01	0.01	190	<10	<10
432650092170201	08-07-85	206	0.30	0.27	0.01	40	30	<10
432923092212501	08-07-85	289	0.09	1.10	0.04	1400	<10	<10
424308094132601	05-30-85	410	4.66	<0.01	0.06	<10	<10	<10
423911094233402	05-30-85	901	0.09	0.94	0.08	2300	570	<10
424836094030101	05-30-85	492	0.11	0.75	0.05	1200	150	<10
424548094171901	05-30-85	397	0.82	<0.01	0.04	<10	200	<10
422018095205101	12-05-84	396	4.90	0.02	0.07	<10	10	<10
422106095280201	12-05-84	644	5.80	--	--	10	<10	<10
421908095353701	12-05-84	416	9.50	--	--	10	<10	<10
423033095250501	05-23-85	649	9.00	0.265	0.02	<10	80	<10
420432090401201	12-20-84	447	1.29	--	--	70	<10	<10
414251092541701	09-24-85	594	6.80	0.06	0.05	230	140	<10
420009091084901	07-19-85	294	0.07	--	--	140	90	<10
420102091214101	07-18-85	179	0.05	0.06	0.04	740	<10	<10
420631091172001	07-17-85	535	4.22	0.25	<0.01	<10	<10	<10
420747091105801	07-17-85	342	0.04	--	--	1100	<10	<10
421420091142001	07-17-85	318	1.69	--	--	<10	<10	<10
412809092142001	12-18-84	359	0.04	--	--	2400	160	<10
425426094050301	05-31-85	421	0.24	0.27	0.07	20	220	<10
430340094252702	05-31-85	933	0.04	0.87	0.07	1800	80	<10
431154094130701	05-31-85	536	0.04	0.86	0.06	850	20	<10
431737094125601	05-31-85	1070	0.04	0.99	0.07	890	20	<10
403804091174001	05-21-85	305	0.11	2.00	0.85	5700	1700	<10
403748091174301	05-21-85	401	0.09	1.20	0.14	4	350	<10
410557091023701	07-09-85	234	0.07	--	--	2100	160	<10
411056091111501	04-10-85	191	<0.02	0.18	0.01	1200	200	<10

STATION NUMBER	DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
430741092540601	08-06-85	300	<1	<10	20	<10	<1.0	<10
430836093001701	08-06-85	300	<1	<10	<10	<10	<1.0	<10
424312093132101	07-09-85	300	<1	<10	40	<10	<1.0	<10
424537093220502	07-10-85	400	<1	<10	10	<10	<1.0	<10
425342093133701	07-10-85	<100	<1	<10	20	<10	<1.0	<10
403604095394401	08-14-85	300	<1	<10	20	<10	<1.0	<10
405225095335001	08-14-85	200	<1	<10	20	<10	<1.0	<10
404224095310601	08-21-85	100	<1	<10	<10	<10	<1.0	<10
415527094114901	08-13-85	500	<1	<10	<10	<10	<1.0	<10
420047094223901	08-13-85	500	<1	<10	30	<10	<1.0	<10
420104094324301	08-13-85	300	<1	<10	10	<10	<1.0	<10
421336092524401	11-13-85	200	<1	<10	10	<10	<1.0	<10
421856092355101	11-13-85	<100	<1	<10	20	<10	<1.0	<10
421327092492201	11-13-85	200	<1	<10	10	<10	<1.0	<10
414035094302501	05-21-85	100	<1	<10	10	<10	<1.0	<10
414035094302502	05-21-85	<100	<1	<10	30	<10	<1.0	<10
414624094211201	05-21-85	600	<1	<10	10	<10	<1.0	<10
415034094254801	05-21-85	200	<1	<10	20	<10	<1.0	<10
421417093360701	06-04-85	1600	<1	<10	10	<10	<1.0	<10
421724093474101	06-04-85	100	<1	<10	10	<10	<1.0	<10
421828093381501	06-04-85	400	<1	<10	10	<10	<1.0	<10
422904093324201	06-04-85	200	<1	<10	10	<10	<1.0	<10
425528093364501	06-04-85	300	<1	<10	10	<10	<1.0	<10
425936093572401	06-04-85	<100	<1	<10	10	<10	<1.0	<10
430015093360501	06-04-85	<100	<1	<10	10	<10	<1.0	<10
430627093361301	06-04-85	200	<1	<10	10	<10	<1.0	<10
430539093482201	06-04-85	100	<1	<10	<10	<10	<1.0	<10
421455093034601	06-27-85	<100	<1	<10	<10	<10	<1.0	<10
421658093101101	06-26-85	300	<1	<10	<10	<10	<1.0	<10
421544093002201	11-13-85	<100	<1	<10	<10	<10	<1.0	<10
422453093035001	06-26-85	<100	<1	<10	<10	<10	<1.0	<10
423323093034701	07-09-85	100	<1	<10	60	<10	<1.0	<10
415003095552401	02-08-85	200	2	<10	20	<10	<1.0	<10
405810091330511	07-11-85	400	<1	<10	20	<10	<1.0	<10
410740091260001	06-27-85	100	<1	<10	<10	<10	<1.0	<10
410749091324001	06-27-85	<100	<1	<10	20	<10	<1.0	10
410749091324101	06-27-85	<100	<1	<10	<10	<10	<1.0	<10
410851091394401	06-28-85	<100	<1	<10	<10	<10	<1.0	<10
432257092065701	08-07-85	<100	<1	<10	<10	<10	<1.0	<10
432650092170201	08-07-85	100	<1	<10	<10	<10	<1.0	<10
432923092212501	08-07-85	200	<1	<10	<10	<10	<1.0	<10
424308094132601	05-30-85	200	<1	<10	40	<10	<1.0	<10
423911094233402	05-30-85	<100	<1	<10	20	<10	<1.0	<10
424836094030101	05-30-85	100	<1	<10	20	<10	<1.0	<10
424548094171901	05-30-85	200	<1	<10	20	<10	<1.0	<10
422018095205101	12-05-84	200	<1	<10	20	<10	<1.0	<10
422106095280201	12-05-84	300	<1	<10	60	<10	<1.0	<10
421908095353701	12-05-84	400	<1	<10	20	<10	<1.0	<10
423033095250501	05-23-85	100	<1	<10	<10	<10	<1.0	<10
420432090401201	12-20-84	200	<1	<10	10	<10	<1.0	<10
414251092541701	09-24-85	<100	<1	<10	<10	<10	<1.0	<10
420009091084901	07-19-85	200	<1	<10	<10	<10	<1.0	<10
420102091214101	07-18-85	<100	<1	<10	<10	<10	<1.0	<10
420631091172001	07-17-85	<100	<1	<10	<10	<10	<1.0	<10
420747091105801	07-17-85	<100	<1	<10	<10	<10	<1.0	<10
421420091142001	07-17-85	200	<1	<10	<10	<10	<1.0	<10
412809092142001	12-18-84	100	<1	<10	<10	<10	<1.0	<10
425426094050301	05-31-85	<100	<1	<10	20	<10	<1.0	<10
430340094252702	05-31-85	<100	<1	<10	30	<10	<1.0	<10
431154094130701	05-31-85	<100	<1	<10	30	<10	<1.0	<10
431737094125601	05-31-85	<100	<1	<10	20	<10	<1.0	<10
403804091174001	05-21-85	300	<1	<10	<10	<10	<1.0	<10
403748091174301	05-21-85	400	<1	<10	<10	<10	<1.0	<10
410557091023701	07-09-85	<100	<1	<10	60	<10	<1.0	<10
411056091111501	04-10-85	100	<1	<10	10	<10	<1.0	<10

STATION NUMBER	DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	RADIUM 226, DIS-SOLVED (PCI/L) (09503)	RADIUM 228 DIS-SOLVED (PCI/L AS RA-228) (81366)
430741092540601	08-06-85	<10	20	1.2	3.0	--	--
430836093001701	08-06-85	<10	<10	0.5	2.0	--	--
424312093132101	07-09-85	<10	<10	1.3	2.0	--	--
424537093220502	07-10-85	<10	<10	6.1	5.0	3.6	0.8
425342093133701	07-10-85	<10	<10	0.9	3.0	--	--
403604095394401	08-14-85	<10	<10	0.4	4.0	--	--
405225095335001	08-14-85	<10	<10	8.4	3.0	0.8	<0.6
404224095310601	08-21-85	<10	10	0.4	4.0	--	--
415527094114901	08-13-85	<10	30	4.6	9.0	4.0	1.3
420047094223901	08-13-85	<10	<10	4.2	1.0	3.4	1.5
420104094324301	08-13-85	<10	<10	7.2	11	4.7	1.9
421336092524401	11-13-85	<10	10	<0.2	7.0	--	--
421856092355101	11-13-85	<10	<10	1.4	4.0	--	--
421327092492201	11-13-85	<10	<10	10	8.0	3.4	0.7
414035094302501	05-21-85	<10	<10	2.0	4.0	--	--
414035094302502	05-21-85	<10	<10	4.4	2.0	0.6	1.1
414624094211201	05-21-85	<10	10	1.6	6.0	--	--
415034094254801	05-21-85	<10	20	4.7	4.0	4.0	0.7
421417093360701	06-04-85	<10	<10	9.6	8.0	6.0	1.0
421724093474101	06-04-85	<10	<10	2.4	10	--	--
421828093381501	06-04-85	<10	<10	<0.2	7.0	--	--
422904093324201	06-04-85	<10	<10	4.0	2.0	2.5	<0.6
425528093364501	06-04-85	<10	<10	1.5	<0.5	--	--
425936093572401	06-04-85	<10	<10	3.5	3.0	1.2	<0.6
430015093360501	06-04-85	<10	20	1.9	9.0	--	--
430627093361301	06-04-85	<10	20	<0.2	11	--	--
430539093482201	06-04-85	<10	10	<0.2	4.0	--	--
421455093034601	06-27-85	<10	<10	1.1	5.0	--	--
421658093101101	06-26-85	<10	20	1.0	<0.5	--	--
421544093002201	11-13-85	<10	<10	3.1	5.0	--	--
422453093035001	06-26-85	<10	<10	1.2	1.0	--	--
423323093034701	07-09-85	<10	10	<0.2	<0.5	--	--
415003095552401	02-08-85	<10	10	0.6	<0.5	--	--
405810091330511	07-11-85	<10	<10	29	27	15	1.1
410740091260001	06-27-85	<10	60	4.7	12	4.4	3.4
410749091324001	06-27-85	<10	130	1.5	2.0	--	--
410749091324101	06-27-85	<10	<10	64	32	3.1	0.8
410851091394401	06-28-85	<10	<10	22	22	12	2.5
432257092065701	08-07-85	<10	<10	0.7	1.0	--	--
432650092170201	08-07-85	<10	<10	3.9	2.0	1.0	<0.6
432923092212501	08-07-85	<10	<10	1.7	5.0	--	--
424308094132601	05-30-85	<10	10	7.0	3.0	1.0	<0.6
423911094233402	05-30-85	<10	<10	2.1	8.0	--	--
424836094030101	05-30-85	<10	30	0.9	4.0	--	--
424548094171901	05-30-85	<10	<10	13	3.0	0.9	<0.6
422018095205101	12-05-84	<10	<10	2.3	4.0	--	--
422106095280201	12-05-84	<10	<10	1.9	6.0	--	--
421908095353701	12-05-84	<10	<10	2.1	1.0	--	--
423033095250501	05-23-85	<10	<10	8.6	1.0	<0.1	0.9
420432090401201	12-20-84	<10	10	<0.2	<0.6	--	--
414251092541701	09-24-85	<10	<10	1.7	5.0	--	--
420009091084901	07-19-85	<10	10	2.1	<0.6	--	--
420102091214101	07-18-85	<10	<10	1.6	<0.6	--	--
420631091172001	07-17-85	<10	<10	3.6	<0.6	0.7	<0.6
420747091105801	07-17-85	<10	20	2.1	1.0	1.3	1.2
421420091142001	07-17-85	<10	<10	1.0	0.1	--	--
412809092142001	12-18-84	<10	20	0.6	4.0	--	--
425426094050301	05-31-85	<10	<10	4.2	9.0	2.3	0.9
430340094252702	05-31-85	<10	<10	3.5	7.0	1.4	2.0
431154094130701	05-31-85	<10	<10	8.3	10	3.2	1.8
431737094125601	05-31-85	<10	10	9.0	<0.6	1.8	2.4
403804091174001	05-21-85	<10	<10	3.2	5.0	1.3	2.0
403748091174301	05-21-85	<10	20	7.2	3.3	1.3	1.6
410557091023701	07-09-85	<10	<10	--	--	--	--
411056091111501	04-10-85	<10	<10	<0.3	2.0	--	--

STATION NUMBER	DATE	ATRA-ZINE, TOTAL (UG/L) (39630)	CYAN-AZINE TOTAL (UG/L) (81757)	METRI-BUZIN IN WHOLE WATER (UG/L) (81408)	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	METOLA-CHLOR IN WHOLE WATER (UG/L) (39356)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)
430741092540601	08-06-85	--	--	--	--	--	--
430836093001701	08-06-85	--	--	--	--	--	--
424312093132101	07-09-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424537093220502	07-10-85	--	--	--	--	--	--
425342093133701	07-10-85	0.18	<0.1	<0.05	<0.1	<0.1	<0.05
403604095394401	08-14-85	<0.1	<0.1	<0.05	<0.1	<0.1	0.05
405225095335001	08-14-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
404224095310601	08-21-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
415527094114901	08-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420047094223901	08-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420104094324301	08-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421336092524401	11-13-85	--	--	--	--	--	--
421856092355101	11-13-85	--	--	--	--	--	--
421327092492201	11-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414035094302501	05-21-85	--	--	--	--	--	--
414035094302502	05-21-85	--	--	--	--	--	--
414624094211201	05-21-85	--	--	--	--	--	--
415034094254801	05-21-85	--	--	--	--	--	--
421417093360701	06-04-85	--	--	--	--	--	--
421724093474101	06-04-85	--	--	--	--	--	--
421828093381501	06-04-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
422904093324201	06-04-85	--	--	--	--	--	--
425528093364501	06-04-85	--	--	--	--	--	--
425936093572401	06-04-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
430015093360501	06-04-85	--	--	--	--	--	--
430627093361301	06-04-85	--	--	--	--	--	--
430539093482201	06-04-85	--	--	--	--	--	--
421455093034601	06-27-85	--	--	--	--	--	--
421658093101101	06-26-85	--	--	--	--	--	--
421544093002201	11-13-85	--	--	--	--	--	--
422453093035001	06-26-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
423323093034701	07-09-85	0.12	<0.1	<0.05	<0.1	<0.1	<0.05
415003095552401	02-08-85	--	--	--	--	--	--
405810091330511	07-11-85	--	--	--	--	--	--
410740091260001	06-27-85	--	--	--	--	--	--
410749091324001	06-27-85	--	--	--	--	--	--
410749091324101	06-27-85	--	--	--	--	--	--
410851091394401	06-28-85	--	--	--	--	--	--
432257092065701	08-07-85	--	--	--	--	--	--
432650092170201	08-07-85	--	--	--	--	--	--
432923092212501	08-07-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424308094132601	05-30-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
423911094233402	05-30-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424836094030101	05-30-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424548094171901	05-30-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
422018095205101	12-05-84	--	--	--	--	--	--
422106095280201	12-05-84	--	--	--	--	--	--
421908095353701	12-05-84	--	--	--	--	--	--
423033095250501	05-23-85	--	--	--	--	--	--
420432090401201	12-20-84	<0.1	<0.08	<0.01	<0.08	<0.1	<0.02
414251092541701	09-24-85	0.3	<0.1	<0.05	<0.1	<0.1	<0.05
420009091084901	07-19-85	--	--	--	--	--	--
420102091214101	07-18-85	--	--	--	--	--	--
420631091172001	07-17-85	--	--	--	--	--	--
420747091105801	07-17-85	--	--	--	--	--	--
421420091142001	07-17-85	--	--	--	--	--	--
412809092142001	12-18-84	--	--	--	--	--	--
425426094050301	05-31-85	--	--	--	--	--	--
430340094252702	05-31-85	--	--	--	--	--	--
431154094130701	05-31-85	--	--	--	--	--	--
431737094125601	05-31-85	--	--	--	--	--	--
403804091174001	05-21-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
403748091174301	05-21-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
410557091023701	07-09-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
411056091111501	04-10-85	--	--	--	--	--	--

STATION NUMBER	DATE	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DYFO-NATE (UG/L) (81294)	TERBU-FOS (UG/L) (82088)	PHORATE OTAL (UG/L) (39023)
430741092540601	08-06-85	--	--	--	--	--	--
430836093001701	08-06-85	--	--	--	--	--	--
424312093132101	07-09-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424537093220502	07-10-85	--	--	--	--	--	--
425342093133701	07-10-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
403604095394401	08-14-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
405225095335001	08-14-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
404224095310601	08-21-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
415527094114901	08-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420047094223901	08-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420104094324301	08-13-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
421336092524401	11-13-85	--	--	--	--	--	--
421856092355101	11-13-85	--	--	--	--	--	--
421327092492201	11-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414035094302501	05-21-85	--	--	--	--	--	--
414035094302502	05-21-85	--	--	--	--	--	--
414624094211201	05-21-85	--	--	--	--	--	--
415034094254801	05-21-85	--	--	--	--	--	--
421417093360701	06-04-85	--	--	--	--	--	--
421724093474101	06-04-85	--	--	--	--	--	--
421828093381501	06-04-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
422904093324201	06-04-85	--	--	--	--	--	--
425528093364501	06-04-85	--	--	--	--	--	--
425936093572401	06-04-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
430015093360501	06-04-85	--	--	--	--	--	--
430627093361301	06-04-85	--	--	--	--	--	--
430539093482201	06-04-85	--	--	--	--	--	--
421455093034601	06-27-85	--	--	--	--	--	--
421658093101101	06-26-85	--	--	--	--	--	--
421544093002201	11-13-85	--	--	--	--	--	--
422453093035001	06-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
423323093034701	07-09-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
415003095552401	02-08-85	--	--	--	--	--	--
405810091330511	07-11-85	--	--	--	--	--	--
410740091260001	06-27-85	--	--	--	--	--	--
410749091324001	06-27-85	--	--	--	--	--	--
410749091324101	06-27-85	--	--	--	--	--	--
410851091394401	06-28-85	--	--	--	--	--	--
432257092065701	08-07-85	--	--	--	--	--	--
432650092170201	08-07-85	--	--	--	--	--	--
432923092212501	08-07-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424308094132601	05-30-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
423911094233402	05-30-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
424836094030101	05-30-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
424548094171901	05-30-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
422018095205101	12-05-84	--	--	--	--	--	--
422106095280201	12-05-84	--	--	--	--	--	--
421908095353701	12-05-84	--	--	--	--	--	--
423033095250501	05-23-85	--	--	--	--	--	--
420432090401201	12-20-84	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
414251092541701	09-24-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420009091084901	07-19-85	--	--	--	--	--	--
420102091214101	07-18-85	--	--	--	--	--	--
420631091172001	07-17-85	--	--	--	--	--	--
420747091105801	07-17-85	--	--	--	--	--	--
421420091142001	07-17-85	--	--	--	--	--	--
412809092142001	12-18-84	--	--	--	--	--	--
425426094050301	05-31-85	--	--	--	--	--	--
430340094252702	05-31-85	--	--	--	--	--	--
431154094130701	05-31-85	--	--	--	--	--	--
431737094125601	05-31-85	--	--	--	--	--	--
403804091174001	05-21-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
403748091174301	05-21-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
410557091023701	07-09-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
411056091111501	04-10-85	--	--	--	--	--	--

STATION NUMBER		STATION NAME	COUNTY	DATE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)
411644091110701075O3W22DCBD	18796	GRANDVIEW NORTH	LOUISA	04-10-85	10:30	112AFNN	174.00
411652091213801075O4W19CDA	02977	COLUMBUS JCT 2	LOUISA	05-01-85	15:00	112PLSC	80.00
411539091221501075O5W36AAD	19170	COLUMBUS CITY 1	LOUISA	04-25-85	15:00	112AFNN	166.00
431844096263501098 47W18BDB	01344	1940INWOOD TOWN WELL 1	LYON	12-03-84	13:15	217DKOT	518.00
411213092531501074 18W13CCCC	23062	1972BUSSEY NO 3	MARION	09-26-85	15:00	360OVCB	2260.00
412310093160601076 21W15BCDC	19067	1967PLEASANTVILLE 1	MARION	04-30-85	13:50	360OVCB	2400.00
415534093111501082 20W09CADC	05760	1952RHODES NO 1	MARSHALL	09-24-85	12:00	112PLSC	157.00
410114095300001068 41W14CDBB		1965HASTINGS 1	MILLS	08-08-85	13:00	111ALVM	53.00
410116095464101072 43W22CACA		1972GLENWOOD 3	MILLS	08-08-85	10:15	111ALVM	93.00
431337092461901097 16W07DDDD	11450	1959ORCHARD TOWN	MITCHELL	08-06-85	13:00	344RPID	220.00
405559094591501071 36W21DDAB		1974VILLISCA 7-3	MONTGOMERY	08-07-85	10:20	111ALVM	42.00
410216095113401072 38W14CBBB	07047	1955RED OAK NO 4	MONTGOMERY	08-07-85	12:00	217DKOT	160.00
412321091034801076 02W15AACB		MUSCATINE 5	MUSCATINE	04-26-85	08:45	111ALVM	64.00
412329091041301076 02W15BAAA		MUSCATINE 19	MUSCATINE	04-26-85	09:30	111ALVM	83.00
412213091063601076 02W20CAAA		1981MUSCATINE 26	MUSCATINE	04-26-85	10:00	111ALVM	140.00
413428091094601078 03W11DBBB	00856	ATALISSA IOWA 1	MUSCATINE	04-26-85	14:30	350SLRN	295.00
425859095403201094 41W03CDDC		1955PAULLINA NO 4	O'BRIEN	12-05-84	14:00	112PLSC	60.00
431045095413801097 41W33BDDD		1969SANBORN NO 4	O'BRIEN	12-05-84	10:55	112PLSC	80.00
431703095272401098 39W28ABBB		1973MELVIN NO 2	OSCEOLA	12-04-84	14:45	110QRNR	40.00
432314095320001099 40W14DCCC		OCHEYEDAN #1	OSCEOLA	12-04-84	11:55	110QRNR	32.00
432646095260201100 39W27DCDB	12508	1960HARRIS TOWN WELL	OSCEOLA	12-04-84	10:25	112PLSC	100.00
404517095245301069 40W26BAD		1975SHENODOAH 21	PAGE	08-21-85	08:45	111ALVM	37.00
425735094270201094 31W13AC	10712	1959WEST BEND CITY WELL	PALO ALTO	08-19-85	11:00	360OVCB	1360.00
423536095583501090 43W19CCBB		1979KINGSLEY NO 2	PALO ALTO	09-18-85	09:00	111ALVM	41.00
424306096145701091 46W11BBDC		1959MERRILL NO 2	PLYMOUTH	09-16-85	15:30	111ALVM	42.00
424916095581201092 43W06BABD		1968REMSEN NO 5	PLYMOUTH	09-17-85	12:30	111ALVM	36.00
424838096161001092 46W03CCAB		1970BRUNSVILLE CITY	PLYMOUTH	09-17-85	10:00	111ALVM	32.00
424528096362001092 49W27DAAA		1965WESTFIELD NO 1	PLYMOUTH	09-04-85	15:00	111ALVM	41.00
424948096332901093 48W31BDDC		1959AKRON NO 4	PLYMOUTH	09-04-85	11:45	112PLSC	49.00
413418093432403078 25W10CD	08889	1956WEST DES MOINES 6	POLK	09-26-85	11:00	111ALVM	35.00
414051093190902079 21W05CAAA	09808	1958MITCHELLVILLE NO 2	POLK	09-11-85	10:30	111ALVM	61.00
414409093241001080 22W15CBCD		1981BONDURANT 4	POLK	09-11-85	11:45	111ALVM	70.00
411201095252801074 40W22AADC		1962MACEDONIA 1	POTTAWATTAMIE	08-06-85	13:40	111ALVM	39.00
411356095360801074 41W07ABBA		1980TREYNOR NO 3	POTTAWATTAMIE	08-06-85	15:10	112PLSC	248.00
411838095252801075 40W10DAAB		1979OAKLAND 11	POTTAWATTAMIE	08-07-85	15:10	111ALVM	42.00
412327095215401076 39W08CCCC		1978HANCOCK 6	POTTAWATTAMIE	08-06-85	11:30	111ALVM	48.00
412654095371201077 42W24DCCD		1978NEOLA 4	POTTAWATTAMIE	08-06-85	09:15	210CRCS	114.00
413449092223901078 13W08AACA		1940DEEP RIVER NO 1	POWESHIEK	07-29-85	15:00	111ALVM	70.00
413429092420401078 16W09ADDD	08551	1955SEARSBORO NO 1	POWESHIEK	07-29-85	13:45	338KKUK	130.00
413933090351301079 03E11CBC	07460	ELDRIDGE IOWA 3	SCOTT	01-08-85	09:05	355NIGR	487.00
413437095034401078 37W11AAAB		1967ELK HORN NO 9	SHELBY	06-11-85	11:30	111ALVM	42.00
413048095260701078 40W34BDCD		1954SHELBY NO 3	SHELBY	06-13-85	09:30	111ALVM	54.00
413842095184201079 38W19ABAB		1978HARLAN 20	SHELBY	06-13-85	12:50	111ALVM	38.00
413810095185401079 38W19BDDB		1978HARLAN 27	SHELBY	06-13-85	13:00	111ALVM	39.00
414340095160301080 38W21ADAA		1972KIRKMAN TOWN NO 1	SHELBY	06-19-85	11:45	111ALVM	55.00
414622095250101080 39W05ACAA		1968EARLING NO 1	SHELBY	06-13-85	10:15	111ALVM	40.00
414407095284101080 40W14CCBD		1967PANAMA NO 1	SHELBY	06-19-85	09:30	111ALVM	40.00
414729095124001081 38W36AAAB		1946TOWN OF IRWIN NO 2	SHELBY	06-19-85	12:45	111ALVM	35.00
414932095201902081 39W13CACB		DEFIANCE PUMPHOUSE 4	SHELBY	06-12-85	10:00	111ALVM	50.00
425904095522801094 43W01CDBC		1959GRANVILLE NO 2	SIOUX	12-06-84	09:15	112PLSC	485.00
425749096104201094 45W17AACD	14860	1962TOWN OF MAURICE NO 3	SIOUX	12-11-84	12:00	217DKOT	520.00
425820096184601094 46W07DAD	02310	1946IRETON TOWN WELL	SIOUX	12-11-84	14:30	217DKOT	572.00
430108096093801095 45W28DBAA		1970ORANGE CITY NO 2	SIOUX	12-05-84	11:00	110QRNR	79.00
431133096075902097 45W26CBAA	10434	1959HULL CITY WELL NO 4	SIOUX	12-03-84	15:30	217DKOT	665.00
415403093181001082 21W21BDCA	24622	1977COLLINS NO 3	STORY	07-25-85	10:45	360OVCB	2535.00
415307093234701082 22W27BDD	03694	1946MAXWELL 2	STORY	07-25-85	11:45	112PLSC	100.00
420141093365701083 24W02CBAA		1968AMES NO 12	STORY	08-28-85	10:45	112PLSC	128.00
420141093363601083 24W02DBBB	18802	1966AMES NO 9	STORY	08-28-85	10:20	112PLSC	134.00
413535091013001078 02W01DCD		1981WILTON 3	TAMA	04-26-85	13:10	350SLRN	195.00
415502092240105082 13W18AAC		CHELSEA IOWA 1	TAMA	07-29-85	09:30	111ALVM	36.00
415935092351801083 15W15CCDC	24528	1977TOLEDO JORDAN NO 2	TAMA	06-26-85	15:00	371JRDN	1990.00
415749092345301083 15W34ABBB		1966TAMA NO 4	TAMA	06-26-85	13:45	111ALVM	44.00
415852092424901083 16W21DCAB		1972MONTOUR 2	TAMA	06-26-85	11:40	111ALVM	46.00
420533092403802084 16W14ABA		GARWIN 1	TAMA	07-29-85	11:30	341LMCK	140.00
421122092431102085 16W09ACC	06209	GLADBROOK 3	TAMA	06-27-85	10:30	112KNSN	52.00

STATION NUMBER	DATE	FLOW RATE (GPM) (00058)	PUMP OR FLOW PERIOD PRIOR TO SAMPLING (MIN) (72004)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
411644091110701	04-10-85	--		465	7.3	240	67	17
411652091213801	05-01-85	70	60	639	7.5	320	85	26
411539091221501	04-25-85	10	30	714	7.2	340	82	33
431844096263501	12-03-84	11		1400	7.0	630	160	56
411213092531501	09-26-85	100	60	1350	7.7	330	80	31
412310093160601	04-30-85	250	30	1010	7.1	280	68	27
415534093111501	09-24-85	42	10	760	7.6	580	140	56
410114095300001	08-08-85	--	60	680	7.5	320	85	25
410116095464101	08-08-85	150	60	870	7.5	440	120	34
431337092461901	08-06-85	--	20	600	8.0	290	84	19
405559094591501	08-07-85	80	60	680	--	210	58	17
410216095113401	08-07-85	320	60	400	7.5	190	54	14
412321091034801	04-26-85	600	1440	544	7.4	280	76	23
412329091041301	04-26-85	800	1440	322	7.5	180	47	15
412213091063601	04-26-85	1500	24	268	7.8	140	40	8.6
413428091094601	04-26-85	52	10	681	6.9	370	90	35
425859095403201	12-05-84	1250	30	815	7.2	440	120	35
431045095413801	12-05-84	375	120	832	7.0	480	130	38
431703095272401	12-04-84	40	30	726	7.4	360	95	29
432314095320001	12-04-84	70	30	532	7.5	260	65	23
432646095260201	12-04-84	30	45	2300	7.2	1400	380	120
404517095245301	08-21-85	100	60	440	6.9	190	52	14
425735094270201	08-19-85	180	60	1850	7.2	870	230	71
423536095583501	09-18-85	180	180	850	7.5	430	120	32
424306096145701	09-16-85	220	360	830	6.9	440	110	39
424916095581201	09-17-85	90	180	930	7.5	470	130	35
424838096161001	09-17-85	110	40	1020	7.5	490	140	34
424528096362001	09-04-85	82	30	1120	7.5	540	150	40
424948096332901	09-04-85	230		1030	8.0	520	150	35
413418093432403	09-26-85	175	30	1040	7.2	430	120	32
414051093190902	09-11-85	250	20	640	7.2	320	87	26
414409093241001	09-11-85	350	150	627	7.9	330	90	26
411201095252801	08-06-85	100	60	640	7.3	350	96	27
411356095360801	08-06-85	125	60	940	7.8	370	100	29
411838095252801	08-07-85	75		515	7.7	250	69	20
412327095215401	08-06-85	30	60	870	7.3	400	110	30
412654095371201	08-06-85	110	60	980	7.7	470	130	35
413449092223901	07-29-85	36	30	1090	7.1	580	160	44
413429092420401	07-29-85	50	10	1960	7.2	850	200	86
413933090351301	01-08-85	435	20	398	7.3	210	40	26
413437095034401	06-11-85	18	60	580	7.3	300	84	23
413048095260701	06-13-85	50	30	640	6.8	340	94	25
413842095184201	06-13-85	70	60	1200	6.8	620	180	42
413810095185401	06-13-85	70	60	780	6.8	400	120	24
414340095160301	06-19-85	4	150	740	7.4	390	95	36
414622095250101	06-13-85	18	60	720	7.2	350	97	25
414407095284101	06-19-85	20	60	960	7.2	510	140	40
414729095124001	06-19-85	70	60	810	7.3	400	110	31
414932095201902	06-12-85	21	60	930	7.3	500	130	42
425904095522801	12-06-84	65	30	2490	7.0	1200	320	100
425749096104201	12-11-84	155	30	2750	7.2	1200	310	100
425820096184601	12-11-84	125	30	1500	7.2	730	180	67
430108096093801	12-05-84	220	30	960	7.5	490	130	39
431133096075902	12-03-84	270	45	2800	7.3	1200	300	110
415403093181001	07-25-85	--	20	975	7.0	320	75	33
415307093234701	07-25-85	200	20	755	7.3	340	90	28
420141093365701	08-28-85	324	1440	850	7.1	360	92	32
420141093363601	08-28-85	840	4320	970	7.2	470	130	35
413535091013001	04-26-85	300	30	521	7.5	270	72	22
415502092240105	07-29-85	100	60	460	7.4	230	65	17
415935092351801	06-26-85	500		960	7.1	410	91	45
415749092345301	06-26-85	170	30	705	7.1	350	90	30
415852092424901	06-26-85	60	40	645	7.0	340	97	24
420533092403802	07-29-85	100	120	1650	7.4	630	130	74
421122092431102	06-27-85	180	60	660	6.9	340	100	22

STATION NUMBER	DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
411644091110701	04-10-85	8.3	1.8	258	<0.5	4.2	0.25	24
411652091213801	05-01-85	28	3.1	337	6.0	24	0.3	18
411539091221501	04-25-85	38	2.6	416	1.0	3.8	0.45	21
431844096263501	12-03-84	74	16	272	6.5	480	0.8	11
411213092531501	09-26-85	200	19	264	66	370	1.3	10
412310093160601	04-30-85	130	16	257	34	240	1.7	11
415534093111501	09-24-85	140	6.5	300	1.0	550	0.5	13
410114095300001	08-08-85	22	2.5	228	24	54	0.3	20
410116095464101	08-08-85	14	5.0	392	12	47	0.3	27
431337092461901	08-06-85	7.6	1.3	235	19	32	0.25	14
405559094591501	08-07-85	18	2.0	--	110	120	0.4	19
410216095113401	08-07-85	11	1.3	182	2.5	17	0.25	21
412321091034801	04-26-85	12	2.6	202	13	81	0.1	16
412329091041301	04-26-85	3.5	0.9	131	7.5	23	0.1	15
412213091063601	04-26-85	2.7	0.7	78	5.5	23	0.1	12
413428091094601	04-26-85	11	2.3	378	<0.5	10	0.25	16
425859095403201	12-05-84	9.6	2.2	297	11	89	0.4	28
431045095413801	12-05-84	15	3.5	359	10	120	0.5	29
431703095272401	12-04-84	5.2	1.9	236	10	95	0.3	29
432314095320001	12-04-84	7.5	2.5	194	12	69	0.2	24
432646095260201	12-04-84	46	12	333	0.5	1200	0.3	32
404517095245301	08-21-85	11	2.3	128	7.0	70	0.25	20
425735094270201	08-19-85	130	22	329	20	760	1.1	7.8
423536095583501	09-18-85	12	2.5	302	19	60	0.4	28
424306096145701	09-16-85	17	3.8	341	20	50	0.4	24
424916095581201	09-17-85	18	2.0	276	24	160	0.35	22
424838096161001	09-17-85	22	2.1	343	20	190	0.5	22
424528096362001	09-04-85	23	7.3	338	17	200	0.25	25
424948096332901	09-04-85	18	6.8	319	28	190	0.15	25
413418093432403	09-26-85	68	4.0	306	120	76	0.35	22
414051093190902	09-11-85	8.8	0.8	285	16	35	0.2	22
414409093241001	09-11-85	7.9	1.4	269	17	23	0.3	18
411201095252801	08-06-85	10	0.9	258	5.5	96	0.45	20
411356095360801	08-06-85	73	3.8	384	3.5	140	0.3	29
411838095252801	08-07-85	10	1.6	248	5.0	25	0.3	19
412327095215401	08-06-85	25	1.7	291	38	95	0.35	20
412654095371201	08-06-85	23	3.4	355	36	93	0.3	30
413449092223901	07-29-85	18	2.9	301	14	300	0.25	23
413429092420401	07-29-85	140	8.2	154	14	900	0.75	6.6
413933090351301	01-08-85	12	0.6	220	1.0	1.0	0.5	17
413437095034401	06-11-85	9.8	3.1	269	10	44	0.25	37
413048095260701	06-13-85	14	3.7	301	11	40	0.3	31
413842095184201	06-13-85	24	5.8	473	55	120	0.15	20
413810095185401	06-13-85	10	2.4	293	16	110	0.25	17
414340095160301	06-19-85	9.7	3.1	342	12	32	0.3	24
414622095250101	06-13-85	12	3.0	267	26	80	0.4	29
414407095284101	06-19-85	9.3	4.4	390	10	130	0.3	44
414729095124001	06-19-85	15	1.6	312	26	72	0.25	22
414932095201902	06-12-85	11	3.7	373	19	130	0.25	27
425904095522801	12-06-84	240	15	342	22	1300	1.0	14
425749096104201	12-11-84	250	20	317	26	1300	1.5	10
425820096184601	12-11-84	69	12	319	7.5	550	0.5	29
430108096093801	12-05-84	26	39	298	34	150	0.5	27
431133096075902	12-03-84	190	18	316	22	1200	0.5	12
415403093181001	07-25-85	83	16	285	14	220	1.4	10
415307093234701	07-25-85	21	3.9	337	12	44	0.55	15
420141093365701	08-28-85	14	3.1	272	30	85	0.45	24
420141093363601	08-28-85	17	2.6	280	45	150	0.3	27
413535091013001	04-26-85	11	0.8	264	4.5	16	0.25	22
415502092240105	07-29-85	4.0	0.4	184	7.0	60	0.2	19
415935092351801	06-26-85	70	16	305	9.5	250	1.2	7.4
415749092345301	06-26-85	33	2.6	269	14	120	0.3	25
415852092424901	06-26-85	17	2.1	230	26	75	0.2	17
420533092403802	07-29-85	180	8.4	186	4.5	800	0.8	6.6
421122092431102	06-27-85	12	2.2	247	31	71	0.1	16

STATION NUMBER	DATE	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) (00515)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
411644091110701	04-10-85	225	<0.02	--	--	1800	60	<10
411652091213801	05-01-85	369	0.60	--	--	3100	60	<10
411539091221501	04-25-85	398	<0.02	--	--	1900	40	<10
411844096263501	12-03-84	1000	<0.02	--	--	1100	90	<10
411213092531501	09-26-85	941	<0.02	--	--	360	50	<10
412310093160601	04-30-85	638	<0.02	--	--	1200	10	<10
415534093111501	09-24-85	1070	<0.02	--	--	2100	40	<10
410114095300001	08-08-85	408	5.55	--	--	<10	<10	<10
410116095464101	08-08-85	540	<0.02	--	--	1400	960	<10
431337092461901	08-06-85	294	2.66	<0.01	0.03	<10	10	<10
405559094591501	08-07-85	526	<0.02	--	--	4000	2000	20
410216095113401	08-07-85	225	2.89	--	--	<10	<10	<10
412321091034801	04-26-85	352	0.49	--	--	80	80	<10
412329091041301	04-26-85	184	1.64	--	--	100	40	<10
412213091063601	04-26-85	156	5.99	--	--	110	140	<10
413428091094601	04-26-85	373	<0.02	--	--	70	10	<10
425859095403201	12-05-84	493	6.20	--	--	50	330	<10
431045095413801	12-05-84	568	0.09	--	--	150	330	<10
431703095272401	12-04-84	442	<0.02	--	--	1300	530	<10
432314095320001	12-04-84	308	1.80	--	--	<10	80	<10
432646095260201	12-04-84	2000	<0.02	--	--	5400	880	20
404517095245301	08-21-85	248	2.44	--	--	130	30	<10
425735094270201	08-19-85	1500	<0.02	--	--	1800	70	<10
423536095583501	09-18-85	508	14.7	--	--	<10	<10	<10
424306096145701	09-16-85	508	9.10	--	--	<10	10	<10
424916095581201	09-17-85	606	6.66	--	--	<10	70	<10
424838096161001	09-17-85	687	0.42	--	--	360	360	<10
424528096362001	09-04-85	707	14.0	--	--	20	60	<10
424948096332901	09-04-85	689	9.99	--	--	20	50	<10
413418093432403	09-26-85	662	0.82	--	--	390	180	<10
414051093190902	09-11-85	397	18.0	--	--	680	330	<10
414409093241001	09-11-85	383	7.30	--	--	40	160	<10
411201095252801	08-06-85	397	2.66	<0.01	0.09	10	<10	<10
411356095360801	08-06-85	566	0.18	1.80	0.09	360	200	<10
411838095252801	08-07-85	302	0.33	--	--	600	160	<10
412327095215401	08-06-85	510	1.86	--	--	20	420	<10
412654095371201	08-06-85	629	4.88	--	--	<10	610	<10
413449092223901	07-29-85	757	0.07	--	--	3200	160	<10
413429092420401	07-29-85	1610	0.42	--	--	10	170	<10
413933090351301	01-08-85	210	<0.02	--	--	1700	20	20
413437095034401	06-11-85	396	<0.02	1.40	1.00	16000	580	20
413048095260701	06-13-85	419	1.99	0.60	0.05	1500	470	<10
413842095184201	06-13-85	791	<0.02	1.10	0.59	15000	8800	<10
413810095185401	06-13-85	492	<0.02	0.50	0.40	10000	1800	<10
414340095160301	06-19-85	470	1.69	--	--	50	220	<10
414622095250101	06-13-85	456	0.07	0.88	0.47	7000	1400	<10
414407095284101	06-19-85	674	<0.02	1.70	1.20	11000	1000	<10
414729095124001	06-19-85	527	3.55	0.04	0.04	20	260	<10
414932095201902	06-12-85	609	0.09	0.54	0.15	1700	580	<10
425904095522801	12-06-84	2230	<0.02	--	--	1300	290	<10
425749096104201	12-11-84	2350	<0.02	1.90	0.05	1800	80	<10
425820096184601	12-11-84	1090	0.09	2.20	0.05	150	180	<10
430108096093801	12-05-84	587	0.02	5.00	--	2700	1000	<10
431133096075902	12-03-84	2370	--	--	--	1200	160	<10
415403093181001	07-25-85	596	<0.02	--	--	2500	20	<10
415307093234701	07-25-85	403	0.02	--	--	1800	60	<10
420141093365701	08-28-85	448	<0.02	--	--	3400	240	<10
420141093363601	08-28-85	595	<0.02	--	--	8600	400	<10
413535091013001	04-26-85	293	<0.02	--	--	2800	70	<10
415502092240105	07-29-85	306	0.64	--	--	4300	1100	<10
415935092351801	06-26-85	690	0.09	--	--	310	20	<10
415749092345301	06-26-85	504	1.80	--	--	30	1000	<10
415852092424901	06-26-85	433	7.55	--	--	20	20	<10
420533092403802	07-29-85	1290	0.02	--	--	60	<10	<10
421122092431102	06-27-85	461	4.22	--	--	170	200	<10

STATION NUMBER	DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
411644091110701	04-10-85	100	<1	<10	10	<10	<1.0	<10
411652091213801	05-01-85	200	<1	<10	10	<10	<1.0	<10
411539091221501	04-25-85	400	<1	<10	<10	<10	<1.0	<10
431844096263501	12-03-84	<100	<1	<10	10	<10	<1.0	<10
411213092531501	09-26-85	<100	<1	<10	<10	<10	<1.0	<10
412310093160601	04-30-85	<100	<1	<10	30	<10	<1.0	<10
415534093111501	09-24-85	<100	<1	<10	<10	<10	<1.0	<10
410114095300001	08-08-85	200	<1	<10	30	<10	<1.0	<10
410116095464101	08-08-85	500	<1	<10	10	<10	<1.0	<10
431337092461901	08-06-85	100	<1	<10	<10	<10	<1.0	<10
405559094591501	08-07-85	<100	<1	<10	60	<10	<1.0	<10
410216095113401	08-07-85	<100	<1	<10	<10	<10	<1.0	<10
412321091034801	04-26-85	100	<1	<10	<10	<10	<1.0	<10
412329091041301	04-26-85	100	<1	<10	<10	<10	<1.0	<10
412213091063601	04-26-85	<100	<1	<10	<10	<10	<1.0	<10
413428091094601	04-26-85	400	<1	<10	<10	<10	<1.0	<10
425859095403201	12-05-84	200	<1	<10	<10	<10	<1.0	<10
431045095413801	12-05-84	100	<1	<10	<10	<10	<1.0	<10
431703095272401	12-04-84	100	<1	<10	<10	<10	<1.0	<10
432314095320001	12-04-84	100	<1	<10	<10	<10	<1.0	<10
432646095260201	12-04-84	100	<1	<10	10	<10	<1.0	<10
404517095245301	08-21-85	100	<1	<10	<10	<10	<1.0	<10
425735094270201	08-19-85	<100	<1	<10	10	<10	<1.0	<10
423536095583501	09-18-85	300	<1	<10	<10	<10	<1.0	<10
424306096145701	09-16-85	200	<1	<10	40	<10	<1.0	<10
424916095581201	09-17-85	<100	<1	<10	<10	<10	<1.0	<10
424838096161001	09-17-85	<100	<1	<10	10	<10	<1.0	<10
424528096362001	09-04-85	100	<1	<10	20	<10	<1.0	<10
424948096332901	09-04-85	200	<1	<10	20	<10	<1.0	<10
413418093432403	09-26-85	300	<1	<10	<10	<10	<1.0	<10
414051093190902	09-11-85	100	<1	<10	20	<10	<1.0	<10
414409093241001	09-11-85	100	<1	<10	10	<10	<1.0	<10
411201095252801	08-06-85	<100	<1	<10	<10	<10	<1.0	<10
411356095360801	08-06-85	<100	<1	<10	<10	<10	<1.0	<10
411838095252801	08-07-85	100	<1	<10	10	<10	<1.0	<10
412327095215401	08-06-85	100	<1	<10	<10	<10	<1.0	<10
412654095371201	08-06-85	200	<1	<10	10	<10	<1.0	<10
413449092223901	07-29-85	200	<1	<10	30	<10	<1.0	<10
413429092420401	07-29-85	<100	<1	<10	20	<10	<1.0	<10
413933090351301	01-08-85	400	<1	<10	<10	<10	<1.0	<10
413437095034401	06-11-85	400	<1	<10	<10	<10	<1.0	<10
413048095260701	06-13-85	500	<1	<10	10	<10	<1.0	<10
413842095184201	06-13-85	600	<1	<10	20	<10	<1.0	<10
413810095185401	06-13-85	200	<1	<10	10	<10	<1.0	<10
414340095160301	06-19-85	200	<1	<10	40	<10	<1.0	<10
414622095250101	06-13-85	500	<1	<10	10	<10	<1.0	<10
414407095284101	06-19-85	700	<1	<10	10	<10	<1.0	<10
414729095124001	06-19-85	400	<1	<10	30	<10	<1.0	<10
414932095201902	06-12-85	300	<1	<10	<10	<10	<1.0	<10
425904095522801	12-06-84	<100	<1	<10	10	<10	<1.0	<10
425749096104201	12-11-84	100	<1	<10	10	<10	<1.0	<10
425820096184601	12-11-84	100	<1	<10	<10	<10	<1.0	<10
430108096093801	12-05-84	200	<1	<10	<10	<10	<1.0	<10
431133096075902	12-03-84	100	<1	<10	20	<10	<1.0	<10
415403093181001	07-25-85	<100	<1	<10	30	<10	<1.0	<10
415307093234701	07-25-85	200	<1	<10	20	<10	<1.0	<10
420141093365701	08-28-85	300	<1	<10	20	<10	<1.0	<10
420141093363601	08-28-85	300	<1	<10	<10	<10	<1.0	<10
413535091013001	04-26-85	400	<1	<10	<10	<10	<1.0	<10
415502092240105	07-29-85	<100	<1	<10	20	<10	<1.0	<10
415935092351801	06-26-85	<100	<1	<10	<10	<10	<1.0	<10
415749092345301	06-26-85	200	<1	<10	10	<10	<1.0	<10
415852092424901	06-26-85	200	<1	<10	<10	<10	<1.0	<10
420533092403802	07-29-85	<100	<1	<10	<10	<10	<1.0	<10
421122092431102	06-27-85	<100	<1	<10	20	<10	2.0	<10

STATION NUMBER	DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	RADIUM 226, DIS-SOLVED (PCI/L) (09503)	RADIUM 228 DIS-SOLVED (PCI/L AS RA-228) (81366)
411644091110701	04-10-85	<10	<10	<0.3	2.0	--	3.0
411652091213801	05-01-85	<10	<10	0.8	4.0	--	--
411539091221501	04-25-85	<10	<10	<0.2	3.0	--	--
431844096263501	12-03-84	<10	10	5.1	20	4.0	2.2
411213092531501	09-26-85	<10	<10	19	39	15	2.1
412310093160601	04-30-85	<10	<10	14	37	10	1.7
415534093111501	09-24-85	<10	<10	6.0	3.0	1.3	<0.7
410114095300001	08-08-85	<10	<10	3.0	0.5	0.2	0.6
410116095464101	08-08-85	<10	<10	4.0	10	1.1	1.6
431337092461901	08-06-85	<10	<10	1.6	<0.5	--	--
405559094591501	08-07-85	<10	30	0.4	4.0	--	--
410216095113401	08-07-85	<10	<10	1.8	3.0	--	--
412321091034801	04-26-85	<10	<10	<0.2	2.0	--	--
412329091041301	04-26-85	<10	<10	0.6	1.0	--	--
412213091063601	04-26-85	<10	<10	0.8	2.0	--	--
413428091094601	04-26-85	<10	<10	2.0	5.0	--	--
425859095403201	12-05-84	<10	<10	5.9	1.0	0.5	0.6
431045095413801	12-05-84	<10	<10	3.8	2.0	--	--
431703095272401	12-04-84	<10	20	2.7	7.0	--	--
432314095320001	12-04-84	<10	<10	0.8	1.0	--	--
432646095260201	12-04-84	<10	10	2.9	9.0	--	--
404517095245301	08-21-85	<10	<10	1.5	1.0	--	--
425735094270201	08-19-85	<10	<10	32	27	11	2.7
423536095583501	09-18-85	<10	<10	6.5	9.0	0.3	1.1
424306096145701	09-16-85	<10	10	6.3	6.0	0.2	<0.7
424916095581201	09-17-85	<10	20	12	4.0	0.2	0.9
424838096161001	09-17-85	<10	<10	12	9.0	0.5	1.0
424528096362001	09-04-85	<10	<10	3.1	15	0.4	<0.7
424948096332901	09-04-85	<10	10	2.3	13	--	--
413418093432403	09-26-85	<10	<10	16	7.0	0.8	1.0
414051093190902	09-11-85	<10	<10	3.9	3.0	0.7	<0.7
414409093241001	09-11-85	<10	<10	5.0	4.0	0.3	1.4
411201095252801	08-06-85	<10	<10	3.2	4.0	0.9	3.5
411356095360801	08-06-85	<10	<10	2.8	<0.5	--	--
411838095252801	08-07-85	<10	<10	3.2	1.0	0.3	0.9
412327095215401	08-06-85	<10	<10	7.0	25	0.5	2.5
412654095371201	08-06-85	<10	<10	6.0	7.0	0.8	1.7
413449092223901	07-29-85	<10	<10	7.0	1.0	2.6	<0.6
413429092420401	07-29-85	<10	<10	10	4.0	3.0	0.6
413933090351301	01-08-85	<10	<10	0.3	0.4	--	--
413437095034401	06-11-85	<10	20	1.4	4.0	--	--
413048095260701	06-13-85	<10	<10	2.3	3.0	--	--
413842095184201	06-13-85	<10	<10	1.6	10	--	--
413810095185401	06-13-85	<10	10	0.8	8.0	--	--
414340095160301	06-19-85	<10	<10	4.0	3.0	0.4	<0.6
414622095250101	06-13-85	<10	<10	0.4	5.0	--	--
414407095284101	06-19-85	<10	10	0.9	4.0	--	--
414729095124001	06-19-85	<10	10	5.0	5.0	0.3	0.6
414932095201902	06-12-85	<10	<10	0.5	8.0	--	--
425904095522801	12-06-84	<10	70	7.0	17	1.4	1.7
425749096104201	12-11-84	<10	<10	2.2	21	--	--
425820096184601	12-11-84	<10	30	44	13	1.3	<0.4
430108096093801	12-05-84	<10	<10	0.3	5.0	--	--
431133096075902	12-03-84	<10	20	4.7	30	3.1	1.3
415403093181001	07-25-85	<10	<10	11	12	1.5	8.6
415307093234701	07-25-85	<10	<10	3.9	4.0	1.2	0.7
420141093365701	08-28-85	<10	<10	<0.2	6.0	--	--
420141093363601	08-28-85	<10	<10	3.0	4.0	1.3	0.7
413535091013001	04-26-85	<10	<10	1.9	1.0	--	--
415502092240105	07-29-85	<10	<10	0.7	2.0	--	--
415935092351801	06-26-85	<10	<10	7.9	15	6.8	2.5
415749092345301	06-26-85	<10	<10	2.7	2.0	--	--
415852092424901	06-26-85	<10	<10	2.8	3.0	--	--
420533092403802	07-29-85	<10	<10	<0.3	10	--	--
421122092431102	06-27-85	<10	20	2.4	1.0	--	--

STATION NUMBER	DATE	ATRA-ZINE, TOTAL (UG/L) (39630)	CYAN-AZINE TOTAL (UG/L) (81757)	METRI-BUZIN IN WHOLE WATER (UG/L) (81408)	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	METOLA-CHLOR IN WHOLE WATER (UG/L) (39356)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)
411644091110701	04-10-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
411652091213801	05-01-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
411539091221501	04-25-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
431844096263501	12-03-84	--	--	--	--	--	--
411213092531501	09-26-85	--	--	--	--	--	--
412310093160601	04-30-85	--	--	--	--	--	--
415534093111501	09-24-85	--	--	--	--	--	--
410114095300001	08-08-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
410116095464101	08-08-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
431337092461901	08-06-85	--	--	--	--	--	--
405559094591501	08-07-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
410216095113401	08-07-85	--	--	--	--	--	--
412321091034801	04-26-85	0.36	<0.1	<0.05	<0.1	<0.1	<0.05
412329091041301	04-26-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
412213091063601	04-26-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413428091094601	04-26-85	--	--	--	--	--	--
425859095403201	12-05-84	--	--	--	--	--	--
431045095413801	12-05-84	--	--	--	--	--	--
431703095272401	12-04-84	--	--	--	--	--	--
432314095320001	12-04-84	--	--	--	--	--	--
432646095260201	12-04-84	--	--	--	--	--	--
404517095245301	08-21-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
425735094270201	08-19-85	--	--	--	--	--	--
423536095583501	09-18-85	--	--	--	--	--	--
424306096145701	09-16-85	1.9	<0.1	<0.05	<0.1	<0.1	<0.05
424916095581201	09-17-85	--	--	--	--	--	--
424838096161001	09-17-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424528096362001	09-04-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424948096332901	09-04-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413418093432403	09-26-85	0.87	<0.1	<0.05	<0.1	<0.1	<0.05
414051093190902	09-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414409093241001	09-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
411201095252801	08-06-85	0.24	<0.1	<0.05	<0.1	<0.1	<0.05
411356095360801	08-06-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
411838095252801	08-07-85	--	--	--	--	--	--
412327095215401	08-06-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
412654095371201	08-06-85	--	--	--	--	--	--
413449092223901	07-29-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413429092420401	07-29-85	--	--	--	--	--	--
413933090351301	01-08-85	--	--	--	--	--	--
413437095034401	06-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413048095260701	06-13-85	<0.1	<0.1	<0.05	0.19	<0.1	<0.05
413842095184201	06-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413810095185401	06-13-85	0.27	<0.1	<0.05	<0.1	<0.1	<0.05
414340095160301	06-19-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414622095250101	06-13-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414407095284101	06-19-85	--	--	--	--	--	--
414729095124001	06-19-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
414932095201902	06-12-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
425904095522801	12-06-84	<0.1	<0.08	<0.01	<0.08	<0.1	<0.05
425749096104201	12-11-84	--	--	--	--	--	--
425820096184601	12-11-84	--	--	--	--	--	--
430108096093801	12-05-84	--	--	--	--	--	--
431133096075902	12-03-84	--	--	--	--	--	--
415403093181001	07-25-85	--	--	--	--	--	--
415307093234701	07-25-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420141093365701	08-28-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420141093363601	08-28-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413535091013001	04-26-85	--	--	--	--	--	--
415502092240105	07-29-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
415935092351801	06-26-85	--	--	--	--	--	--
415749092345301	06-26-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
415852092424901	06-26-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
420533092403802	07-29-85	--	--	--	--	--	--
421122092431102	06-27-85	0.59	0.2	0.36	0.53	0.31	<0.05

STATION NUMBER	DATE	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DYFO-NATE (UG/L) (81294)	TERBU-FOS (UG/L) (82088)	PHORATE OTAL (UG/L) (39023)
411644091110701	04-10-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
411652091213801	05-01-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
411539091221501	04-25-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
431844096263501	12-03-84	--	--	--	--	--	--
411213092531501	09-26-85	--	--	--	--	--	--
412310093160601	04-30-85	--	--	--	--	--	--
415534093111501	09-24-85	--	--	--	--	--	--
410114095300001	08-08-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
410116095464101	08-08-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
431337092461901	08-06-85	--	--	--	--	--	--
405559094591501	08-07-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
410216095113401	08-07-85	--	--	--	--	--	--
412321091034801	04-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
412329091041301	04-26-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
412213091063601	04-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413428091094601	04-26-85	--	--	--	--	--	--
425859095403201	12-05-84	--	--	--	--	--	--
431045095413801	12-05-84	--	--	--	--	--	--
431703095272401	12-04-84	--	--	--	--	--	--
432314095320001	12-04-84	--	--	--	--	--	--
432646095260201	12-04-84	--	--	--	--	--	--
404517095245301	08-21-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
425735094270201	08-19-85	--	--	--	--	--	--
423536095583501	09-18-85	--	--	--	--	--	--
424306096145701	09-16-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424916095581201	09-17-85	--	--	--	--	--	--
424838096161001	09-17-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424528096362001	09-04-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
424948096332901	09-04-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
413418093432403	09-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414051093190902	09-11-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
414409093241001	09-11-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
411201095252801	08-06-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
411356095360801	08-06-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
411838095252801	08-07-85	--	--	--	--	--	--
412327095215401	08-06-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
412654095371201	08-06-85	--	--	--	--	--	--
413449092223901	07-29-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413429092420401	07-29-85	--	--	--	--	--	--
413933090351301	01-08-85	--	--	--	--	--	--
413437095034401	06-11-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413048095260701	06-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413842095184201	06-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413810095185401	06-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414340095160301	06-19-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414622095250101	06-13-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414407095284101	06-19-85	--	--	--	--	--	--
414729095124001	06-19-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
414932095201902	06-12-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
425904095522801	12-06-84	<0.07	<0.07	<0.05	<0.1	--	<0.1
425749096104201	12-11-84	--	--	--	--	--	--
425820096184601	12-11-84	--	--	--	--	--	--
430108096093801	12-05-84	--	--	--	--	--	--
431133096075902	12-03-84	--	--	--	--	--	--
415403093181001	07-25-85	--	--	--	--	--	--
415307093234701	07-25-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
420141093365701	08-28-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420141093363601	08-28-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
413535091013001	04-26-85	--	--	--	--	--	--
415502092240105	07-29-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
415935092351801	06-26-85	--	--	--	--	--	--
415749092345301	06-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
415852092424901	06-26-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
420533092403802	07-29-85	--	--	--	--	--	--
421122092431102	06-27-85	2.3	<0.07	<0.05	<0.1	<0.1	<0.1

STATION NUMBER		STATION NAME	COUNTY	DATE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)
403659094285301		1960BLOCKTON NO 1	TAYLOR	08-20-85	13:15	112PLSC	271.00
412736093241301	24769	1978HARTFORD NO 4	WARREN	09-11-85	15:15	367PRDC	2120.00
413037093290301		1971CARLISLE NO 4	WARREN	09-11-85	14:00	111ALVM	50.00
421552094103702	07307	1955HARCOURT TOWN NO 2	WEBSTER	08-06-85	12:45	340DVNN	1249.00
422521094090902		1978OTHO NO 3	WEBSTER	09-06-85	10:15	340DVNN	1050.00
423019094214301	14551	1964BARNUM TOWN WELL 1	WEBSTER	08-22-85	11:15	341LMCK	850.00
431616093383501		1973FOREST CITY NO 3	WINNEBAGO	06-17-85	12:35	360ODVC	305.00
431556093375401	00304	1934FOREST CITY #2	WINNEBAGO	06-17-85	12:00	344CDVL	142.00
432323093571601	16406	1964BUFFALO CENTER 2	WINNEBAGO	06-17-85	10:30	364GLEN	465.00
421406096134501		1980SLOAN NO 3 -NEW WELL	WOODBURY	09-05-85	09:00	111ALVM	104.00
422833095463301	08854	1957CORRECTIONVILLE NO 2	WOODBURY	09-18-85	11:45	111ALVM	50.00
422924096041801		1934MOVILLE NO 2	WOODBURY	09-17-85	16:00	111ALVM	49.00
422848096210701		1956SIOUX CITY 1-SP PARK	WOODBURY	09-04-85	08:00	217DKOT	390.00
431713093121402		1920MANLY NO 2 EAST	WORTH	06-17-85	13:55	344CDVL	439.00
432109093124501	19172	1966KENSETT NO 2	WORTH	06-17-85	14:05	344CDVL	303.00
424135093362801		1945GALT 1	WRIGHT	06-11-85	12:00	330MSSP	155.00
423923093300701	03121	1948DOWS IOWA #1	WRIGHT	06-07-85	13:30	344CDVL	752.00
423954093535801		1952EAGLE GROVE	WRIGHT	06-07-85	09:35	112PLSC	70.00
424422093324001	02929	1947ROWAN TWN 1	WRIGHT	06-07-85	12:00	339KDRK	225.00

STATION NUMBER	DATE	FLOW RATE (GPM) (00058)	PUMP OR FLOW PERIOD PRIOR TO SAMPLING (MIN) (72004)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
403659094285301	08-20-85	50	60	1750	7.8	130	36	9.8
412736093241301	09-11-85	300	20	861	7.4	240	58	23
413037093290301	09-11-85	375	120	548	7.3	280	77	22
421552094103702	08-06-85	60	20	1290	7.5	600	130	66
422521094090902	09-06-85	197	20	1040	7.3	490	100	58
423019094214301	08-22-85	45	20	1120	7.2	580	140	56
431616093383501	06-17-85	1100	20	760	6.9	370	93	33
431556093375401	06-17-85	1450	20	740	6.9	360	92	31
432323093571601	06-17-85	250	30	830	7.1	320	91	23
421406096134501	09-05-85	300		1180	7.3	490	120	45
422833095463301	09-18-85	170	240	820	7.3	430	120	31
422924096041801	09-17-85	120	180	670	7.5	320	89	24
422848096210701	09-04-85	1000	30	650	7.2	310	89	22
431713093121402	06-17-85	170	30	720	7.1	350	97	27
432109093124501	06-17-85	350	20		7.2	230	62	18
424135093362801	06-11-85	65	20	680	7.1	350	98	25
423923093300701	06-07-85	140		650	7.2	320	68	36
423954093535801	06-07-85	350	20	710	7.1	350	93	28
424422093324001	06-07-85	90	20	680	7.2	350	95	27

STATION NUMBER	DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
403659094285301	08-20-85	330	2.8	422	110	240	0.8	12
412736093241301	09-11-85	79	15	256	27	150	1.7	10
413037093290301	09-11-85	8.2	1.7	199	13	94	0.15	24
421552094103702	08-06-85	54	17	305	8.5	380	2.4	8.0
422521094090902	09-06-85	41	12	337	6.5	230	2.3	8.0
423019094214301	08-22-85	65	5.9	393	3.0	320	0.7	9.8
431616093383501	06-17-85	19	2.9	369	<0.5	48	0.3	22
431556093375401	06-17-85	17	28	371	0.5	32	0.3	20
432323093571601	06-17-85	67	3.7	406	0.5	52	0.3	24
421406096134501	09-05-85	48	9.3	457	77	50	0.4	34
422833095463301	09-18-85	17	2.2	281	26	110	0.2	21
422924096041801	09-17-85	15	3.3	269	13	38	0.25	24
422848096210701	09-04-85	10	5.7	323	1.5	20	0.4	14
431713093121402	06-17-85	12	2.6	324	11	55	0.3	12
432109093124501	06-17-85	5.2	0.4	237	3.0	20	0.2	19
424135093362801	06-11-85	7.7	3.8	358	1.5	14	0.3	26
423923093300701	06-07-85	18	13	319	4.5	41	2.3	9.0
423954093535801	06-07-85	13	3.1	371	0.5	24	0.35	21
424422093324001	06-07-85	16	1.6	365	3.0	7.0	0.4	13

STATION NUMBER	DATE	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L) (00515)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
403659094285301	08-20-85	1080	<0.02	--	--	650	40	<10
412736093241301	09-11-85	519	<0.02	--	--	1900	40	<10
413037093290301	09-11-85	339	0.53	--	--	750	430	<10
421552094103702	08-06-85	868	0.07	--	--	1400	<10	<10
422521094090902	09-06-85	651	0.30	--	--	320	<10	<10
423019094214301	08-22-85	866	<0.02	--	--	1300	20	<10
431616093383501	06-17-85	438	0.07	--	--	1600	40	<10
431556093375401	06-17-85	427	0.07	0.72	0.14	1500	50	<10
432323093571601	06-17-85	490	0.07	1.10	0.13	1200	40	<10
421406096134501	09-05-85	656	<0.02	--	--	6900	340	<10
422833095463301	09-18-85	531	0.02	--	--	1700	250	<10
422924096041801	09-17-85	400	6.22	--	--	<10	<10	<10
422848096210701	09-04-85	337	<0.02	0.16	<0.01	730	210	<10
431713093121402	06-17-85	408	0.09	0.44	0.10	880	120	<10
432109093124501	06-17-85	272	0.07	0.27	0.12	1200	60	<10
424135093362801	06-11-85	397	0.44	0.35	0.27	840	170	<10
423923093300701	06-07-85	370	0.04	0.80	0.26	140	<10	<10
423954093535801	06-07-85	402	0.02	0.71	0.30	3400	220	<10
424422093324001	06-07-85	385	0.04	0.78	0.07	60	50	<10

STATION NUMBER	DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
403659094285301	08-20-85	200	<1	<10	<10	<10	<1.0	<10
412736093241301	09-11-85	100	<1	<10	10	<10	<1.0	<10
413037093290301	09-11-85	100	<1	<10	<10	<10	<1.0	<10
421552094103702	08-06-85	<100	<1	<10	<10	<10	<1.0	<10
422521094090902	09-06-85	<100	<1	<10	<10	<10	<1.0	<10
423019094214301	08-22-85	<100	<1	<10	20	<10	--	<10
431616093383501	06-17-85	300	<1	<10	<10	<10	<1.0	<10
431556093375401	06-17-85	100	<1	<10	<10	<10	<1.0	<10
432323093571601	06-17-85	100	<1	<10	10	<10	<1.0	<10
421406096134501	09-05-85	200	<1	<10	50	<10	<1.0	<10
422833095463301	09-18-85	200	<1	<10	<10	<10	<1.0	<10
422924096041801	09-17-85	200	<1	<10	<10	<10	<1.0	<10
422848096210701	09-04-85	200	<1	<10	<10	<10	<1.0	<10
431713093121402	06-17-85	200	<1	<10	10	<10	<1.0	<10
432109093124501	06-17-85	100	<1	<10	<10	<10	<1.0	<10
424135093362801	06-11-85	300	<1	<10	10	<10	<1.0	<10
423923093300701	06-07-85	200	<1	<10	20	<10	<1.0	<10
423954093535801	06-07-85	200	<1	<10	10	<10	<1.0	<10
424422093324001	06-07-85	300	<1	<10	30	<10	<1.0	<10

STATION NUMBER	DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	RADIUM 226, DIS-SOLVED (PCI/L) (09503)	RADIUM 228 DIS-SOLVED (PCI/L AS RA-228) (81366)
403659094285301	08-20-85	<10	10	<0.2	2.0	--	--
412736093241301	09-11-85	<10	<10	11	18	7.0	<0.7
413037093290301	09-11-85	<10	<10	1.0	<0.2	--	--
421552094103702	08-06-85	<10	<10	12	25	5.6	6.3
422521094090902	09-06-85	<10	<10	4.9	12	4.3	3.0
423019094214301	08-22-85	<10	<10	8.7	5.0	1.8	1.1
431616093383501	06-17-85	<10	<10	6.4	<0.6	7.9	<0.6
431556093375401	06-17-85	<10	<10	6.3	4.0	6.7	<0.6
432323093571601	06-17-85	<10	<10	1.7	3.0	--	--
421406096134501	09-05-85	<10	<10	3.2	9.0	1.5	2.0
422833095463301	09-18-85	<10	<10	1.8	<0.7	--	--
422924096041801	09-17-85	<10	20	3.2	3.0	0.4	0.8
422848096210701	09-04-85	<10	<10	3.0	12	2.4	2.1
431713093121402	06-17-85	<10	20	1.7	6.0	--	--
432109093124501	06-17-85	<10	<10	0.4	1.0	--	--
424135093362801	06-11-85	<10	30	16	4.0	12	1.4
423923093300701	06-07-85	<10	<10	8.1	12	1.4	<0.6
423954093535801	06-07-85	<10	<10	0.8	4.0	--	--
424422093324001	06-07-85	<10	<10	1.7	<0.5	--	--

STATION NUMBER	DATE	ATRA-ZINE, TOTAL (UG/L) (39630)	CYAN-AZINE TOTAL (UG/L) (81757)	METRI-BUZIN IN WHOLE WATER (UG/L) (81408)	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	METOLA-CHLOR IN WHOLE WATER (UG/L) (39356)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)
403659094285301	08-20-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
412736093241301	09-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
413037093290301	09-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
421552094103702	08-06-85	--	--	--	--	--	--
422521094090902	09-06-85	--	--	--	--	--	--
423019094214301	08-22-85	--	--	--	--	--	--
431616093383501	06-17-85	--	--	--	--	--	--
431556093375401	06-17-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
432323093571601	06-17-85	--	--	--	--	--	--
421406096134501	09-05-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
422833095463301	09-18-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
422924096041801	09-17-85	--	--	--	--	--	--
422848096210701	09-04-85	--	--	--	--	--	--
431713093121402	06-17-85	--	--	--	--	--	--
432109093124501	06-17-85	--	--	--	--	--	--
424135093362801	06-11-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
423923093300701	06-07-85	--	--	--	--	--	--
423954093535801	06-07-85	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05
424422093324001	06-07-85	--	--	--	--	--	--

STATION NUMBER	DATE	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DYFO-NATE (UG/L) (81294)	TERBU-FOS (UG/L) (82088)	PHORATE OTAL (UG/L) (39023)
403659094285301	08-20-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
412736093241301	09-11-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
413037093290301	09-11-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
421552094103702	08-06-85	--	--	--	--	--	--
422521094090902	09-06-85	--	--	--	--	--	--
423019094214301	08-22-85	--	--	--	--	--	--
431616093383501	06-17-85	--	--	--	--	--	--
431556093375401	06-17-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
432323093571601	06-17-85	--	--	--	--	--	--
421406096134501	09-05-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
422833095463301	09-18-85	<0.07	<0.07	<0.05	<0.1	--	<0.1
422924096041801	09-17-85	--	--	--	--	--	--
422848096210701	09-04-85	--	--	--	--	--	--
431713093121402	06-17-85	--	--	--	--	--	--
432109093124501	06-17-85	--	--	--	--	--	--
424135093362801	06-11-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
423923093300701	06-07-85	--	--	--	--	--	--
423954093535801	06-07-85	<0.07	<0.07	<0.05	<0.1	<0.1	<0.1
424422093324001	06-07-85	--	--	--	--	--	--

BIG SPRING FISH HATCHERY NEAR ELKADER, IOWA

LOCATION.--Lat 42°54'35", long 91°28'11", in SE1/4 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, weighing-bucket type recording rain gage with alter wind shield and event recorder and National Weather Service standard 8-inch rain and snow gage (back-up only).

EXTREMES FOR PERIOD OF RECORD.--Maximum field pH, 6.66, June 25 to July 2, 1985; minimum field pH, 3.83, July 30 to August 6, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum field pH, 6.66, June 25 to July 2, 1985; minimum field pH, 3.83, July 30 to August 6, 1985.

WET DEPOSITION DATA

DATE	PH (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)
OCT 1984 02-09	5.2	17	0.4	0.12	0.04	0.05	0.895	0.404	0.09	3.0	<0.001
OCT 09-16	4.2	30	0.34	0.15	0.15	0.06	0.529	0.511	0.23	4.4	0.003
OCT 16-23	4.4	15	0.14	0.03	0.03	0.05	0.124	0.171	0.1	2.0	<0.001
OCT 23-30	4.5	23	1.4	0.62	0.87	0.06	0.062	0.009	1.2	2.7	0.202
OCT 30-NOV 06	4.6	15	0.05	0.01	0.01	0.04	0.288	0.191	0.15	1.4	<0.001
NOV 06-13	5.0	23	0.79	0.13	0.05	0.2	0.941	0.619	0.29	3.5	0.002
NOV 13-20	--	--	--	--	--	--	--	--	--	--	--
NOV 20-27	5.8	8	0.26	0.05	0.01	0.04	0.42	0.20	0.04	1.0	0.002
NOV 27-DEC 04	5.2	30	1.7	0.3	0.11	0.24	2.16	1.83	0.32	4.9	<0.001
DEC 04-11	--	--	--	--	--	--	--	--	--	--	--
DEC 11-18	--	--	0.45	0.1	0.14	0.25	0.832	0.375	0.43	3.9	0.003
DEC 18-26	--	--	0.06	0.02	0.01	0.03	0.124	0.118	<0.02	1.9	<0.001
DEC 26-JAN 02	--	--	0.35	0.06	0.12	0.27	1.71	0.986	0.46	5.5	<0.001
JAN 1985 02-08	--	--	0.55	0.2	0.13	0.64	<0.28	0.446	0.55	7.8	0.018
JAN 08-15	4.9	10	0.58	0.17	0.07	0.24	<0.016	0.291	0.25	0.5	0.003
JAN 22-29	--	--	0.52	0.1	0.15	0.12	<0.016	0.01	0.21	0.6	<0.001
JAN 29-FEB 05	5.5	12	0.64	0.15	0.02	0.1	0.405	0.67	0.16	0.9	<0.001
FEB 05-12	--	--	--	--	--	--	--	--	--	--	--
FEB 12-19	--	--	0.82	0.15	0.07	0.54	0.397	0.686	0.77	2.7	0.008
FEB 19-26	--	--	0.08	0.01	0.03	0.07	0.397	0.269	0.12	1.9	<0.001
FEB 26-MAR 05	4.5	13	0.32	0.05	0.02	0.04	0.218	0.258	0.14	1.7	<0.001
MAR 05-12	4.6	20	0.31	0.06	0.04	0.07	1.01	0.38	0.14	3.1	0.003
MAR 12-19	5.4	7	0.2	0.04	0.02	0.04	0.296	0.215	0.08	0.8	<0.001
MAR 19-26	4.0	47	0.32	0.05	0.03	0.04	0.864	1.09	0.16	3.6	<0.001

BIG SPRINGS FISH HATCHERY NEAR ELKADER, IOWA

WET DEPOSITION DATA

DATE	PH (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)
MAR 26-APR 02	--	--	0.22	0.03	0.04	0.03	0.14	0.147	0.07	0.9	<0.001
APR 02-09	--	--	0.57	0.07	0.06	0.08	0.871	0.511	0.13	2.6	0.002
APR 09-16	--	--	0.3	0.04	0.03	0.08	<0.016	0.031	0.15	0.2	0.002
APR 16-23	5.9	13	0.45	0.09	0.03	0.07	0.724	0.213	0.12	2.0	<0.001
APR 23-30	6.0	11	0.55	0.07	0.13	0.04	0.257	0.249	0.1	2.1	0.001
APR 30-MAY 07	6.6	15	1.3	0.25	0.11	0.12	0.327	0.271	0.14	1.1	<0.001
MAY 07-14	--	--	0.58	0.1	0.16	0.07	0.459	0.455	0.17	2.9	<0.001
MAY 14-21	6.6	18	1.8	0.23	0.1	0.03	0.918	0.562	0.09	1.3	0.003
MAY 21-28	--	--	--	--	--	--	--	--	--	--	--
MAY 28-JUN 04	--	--	0.5	0.08	0.05	0.04	0.342	0.273	0.06	1.5	0.007
JUN 04-11	5.4	7	0.46	0.08	0.02	0.01	0.258	0.17	0.04	0.8	0.002
JUN 1985 11-18	4.2	12	0.37	0.08	0.05	0.04	0.661	0.355	0.09	1.5	0.005
JUN 18-25	6.3	13	0.76	0.11	0.06	0.06	0.412	0.206	0.1	1.4	0.005
JUN 25-JUL 02	6.7	24	2.5	0.39	0.05	0.05	0.762	0.415	0.14	3.3	<0.001
JUL 02-09	3.9	37	0.76	0.3	0.06	0.82	0.016	0.051	0.54	2.3	<0.001
JUL 09-16	--	--	2.4	0.42	0.29	0.08	0.692	0.482	0.17	2.1	<0.001
JUL 16-23	--	--	1.3	0.13	0.09	0.04	0.226	0.42	0.12	1.4	<0.001
JUL 23-30	5.0	7	0.14	0.03	0.01	0.02	0.047	0.067	0.12	0.7	0.002
JUL 30-AUG 06	3.8	47	0.33	0.1	0.04	0.04	0.794	0.608	0.15	6.2	<0.001
AUG 06-13	--	--	0.6	0.09	0.06	0.07	<0.016	0.049	0.11	1.8	0.003
AUG 13-20	--	--	2.2	0.47	0.16	0.3	0.373	1.01	0.59	5.9	0.005
AUG 20-27	--	--	0.69	0.12	0.04	0.03	0.591	0.486	0.16	2.5	<0.001
AUG 27-SEP 03	--	--	0.35	0.06	0.02	0.02	0.21	0.289	0.07	1.5	<0.001
SEP 03-10	5.4	10	0.56	0.18	0.16	0.05	<0.016	0.044	0.06	1.8	0.003
SEP 10-17	--	--	--	--	--	--	--	--	--	--	--
SEP 17-24	4.9	8	0.08	0.02	0.01	0.02	0.07	0.115	0.04	0.7	<0.001
SEP 24-OCT 01	4.2	19	0.08	0.02	0.01	0.03	<0.016	0.229	0.08	1.9	<0.001

MCNAY RESEARCH STATION NEAR CHARITON, IOWA

LOCATION.--Lat 40°57'47", long 93°23'32", 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).

EXTREMES FOR PERIOD OF RECORD.--Maximum field pH, 5.78, May 21 to May 28, 1985; minimum field pH, 3.84, February 12 to February 19, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum field pH, 5.78, May 21 to May 28, 1985; minimum field pH, 3.84, February 12 to February 19, 1985.

WET DEPOSITION DATA

DATE	PH (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1984 02-09	5.0	22	0.92	0.12	0.08	0.21	0.677	0.535	0.18	3.6	<0.001
OCT 09-16	4.5	11	0.04	0.01	0.01	0.02	0.109	0.113	0.07	1.3	0.002
OCT 16-23	--	--	0.12	0.02	0.01	0.06	0.132	0.182	0.11	1.0	<0.001
OCT 23-30	4.5	15	0.52	0.05	0.04	0.08	0.148	0.229	0.11	1.2	<0.001
OCT 30-NOV 06	4.4	22	1.8	0.14	0.07	0.13	0.156	0.384	0.21	3.4	<0.001
NOV 06-13	4.6	21	1.1	0.13	0.28	0.68	0.646	0.746	0.87	2.9	0.002
NOV 13-20	--	--	3.6	0.69	2.2	1.8	0.054	0.333	2.9	3.4	0.002
NOV 20-27	4.1	13	0.42	0.1	0.1	0.26	0.381	0.346	0.18	1.5	<0.001
NOV 27-DEC 04	--	--	--	--	--	--	--	--	--	--	--
DEC 04-11	--	--	2.0	0.59	0.45	1.9	0.366	0.422	1.4	2.4	0.023
DEC 11-18	3.9	13	0.1	0.02	0.02	0.07	0.14	0.202	0.11	1.0	<0.001
DEC 18-26	4.0	13	0.15	0.03	0.04	0.11	0.163	0.135	0.13	1.4	<0.001
DEC 26-JAN 01	--	--	0.99	0.24	0.34	1.1	1.12	0.708	1.4	4.7	<0.001
JAN 1985 01-08	--	--	--	--	--	--	--	--	--	--	--
JAN 08-15	4.4	9	0.37	0.12	0.24	0.37	0.124	0.404	0.42	0.9	<0.001
JAN 15-22	--	--	1.5	0.48	0.46	1.6	0.054	<0.016	1.2	2.6	0.004
JAN 22-29	--	--	--	--	--	--	--	--	--	--	--
JAN 29-FEB 06	--	--	1.8	0.17	0.17	0.22	0.117	1.24	0.58	2.2	0.004
FEB 06-12	--	--	--	--	--	--	--	--	--	--	--
FEB 12-19	3.8	29	0.18	0.05	0.02	0.09	<0.016	<0.004	0.09	0.3	<0.001
FEB 19-26	4.4	22	0.11	0.01	0.02	0.07	0.443	0.322	0.13	2.0	<0.001
FEB 26-MAR 05	4.3	13	0.21	0.02	0.02	0.08	0.148	0.16	0.13	1.5	<0.001
MAR 05-12	4.1	17	0.13	0.02	0.06	0.1	0.397	0.251	0.19	1.7	<0.001
MAR 12-19	--	--	0.72	0.08	0.51	0.73	0.552	0.366	1.2	2.8	<0.001
MAR 19-26	5.4	31	2.3	0.21	0.07	0.14	1.10	1.27	0.28	4.5	0.002

PRECIPITATION WATER-QUALITY DATA.--Continued.

MCNAY RESEARCH STATION NEAR CHARITON, IOWA

WET DEPOSITION DATA

DATE	PH (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
MAR 26-APR 02	4.8	17	0.51	0.04	0.15	0.25	0.303	0.253	0.38	1.8	0.002
APR 02-09	4.9	20	0.7	0.07	0.09	0.12	0.887	0.677	0.23	2.6	<0.001
APR 09-16	--	--	--	--	--	--	--	--	--	--	--
APR 16-23	5.4	25	1.3	0.1	0.12	0.17	1.15	0.724	0.33	3.8	<0.001
APR 23-30	4.6	26	1.1	0.11	0.14	0.05	0.288	0.599	0.17	4.1	<0.001
APR 30-MAY 07	5.2	46	1.8	0.22	0.51	0.14	3.83	1.61	0.39	12	<0.001
MAY 07-14	5.1	9	0.54	0.05	0.08	0.05	<0.016	0.087	0.18	1.4	0.006
MAY 14-21	5.0	10	0.51	0.04	0.05	0.02	0.241	0.26	0.04	1.1	<0.001
MAY 21-28	5.8	55	4.1	0.3	0.14	0.07	2.18	2.33	0.33	7.6	<0.001
MAY 28-JUN 04	--	--	4.9	0.41	0.85	0.18	0.83	1.98	0.66	8.8	0.017
JUN 1985 04-11	4.7	51	2.6	0.37	0.31	0.14	0.324	1.45	0.41	7.6	0.014
JUN 11-18	5.1	13	0.8	0.07	0.09	0.03	0.513	0.519	0.11	1.9	<0.001
JUN 18-25	5.1	8	0.42	0.04	0.04	0.07	<0.016	0.131	0.12	1.0	<0.001
JUN 25-JUL 02	4.8	11	0.62	0.04	0.03	0.11	0.086	0.284	0.17	1.2	<0.001
JUL 02-09	--	--	--	--	--	--	--	--	--	--	--
JUL 09-16	5.4	12	0.76	0.06	0.08	0.06	0.545	0.475	0.11	1.4	<0.001
JUL 16-23	4.8	8	0.31	0.03	0.02	0.04	0.179	0.275	0.07	0.8	<0.001
JUL 23-30	4.3	25	0.35	0.04	0.02	0.05	0.109	0.311	0.21	2.8	<0.001
JUL 30-AUG 06	4.8	16	0.33	0.03	0.02	0.08	<0.016	0.222	0.17	2.1	<0.001
AUG 06-13	4.8	15	0.65	0.04	0.02	0.07	0.163	0.284	0.11	2.2	<0.001
AUG 13-20	4.6	16	0.27	0.03	0.04	0.04	0.257	0.389	0.1	1.3	<0.001
AUG 20-27	4.4	24	0.21	0.03	0.02	0.06	0.272	0.317	0.14	2.9	<0.001
AUG 27-SEP 03	4.4	19	0.24	0.11	0.04	0.23	<0.016	0.675	0.18	0.3	<0.001
SEP 03-10	--	--	--	--	--	--	--	--	--	--	--
SEP 10-17	4.7	21	1.3	0.22	0.11	0.07	0.42	0.684	0.21	3.6	<0.001
SEP 17-24	4.6	12	0.08	0.02	0.01	0.06	0.14	0.162	0.1	1.0	<0.001
SEP 24-OCT 01	4.8	11	0.1	0.01	0.02	0.03	0.124	0.149	0.06	1	<0.001

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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