

TECHNICAL INFORMATION SERIES

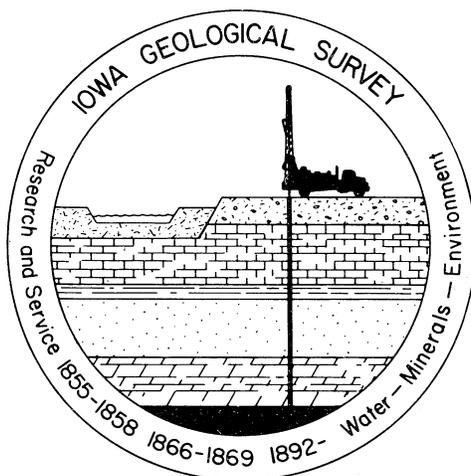
May 1977 Number 6

FLUVIAL SEDIMENT DATA FOR IOWA: SUSPENDED-SEDIMENT CONCENTRATIONS, LOADS AND SIZES; BED-MATERIAL SIZES; AND RESERVOIR SILTATION

by

JOEL R. SCHUETZ and WILBUR J. MATTHES, JR.

U.S. GEOLOGICAL SURVEY



Prepared Cooperatively
by the United States Geological Survey
and Iowa Geological Survey

IOWA GEOLOGICAL SURVEY

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**Published by the
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FOREWORD

Fluvial Sediment for Iowa is a compilation of several published sources of information that includes data on daily extremes, monthly summaries, particle-size analyses, and suspended-sediment concentrations and loads of streams.

There presently is a growing awareness and concern about the rapid rate of loss of Iowa's soil by erosion. In addition to providing readily available data for studies on Iowa's sediment problems, this report will be useful to planners, engineers and scientists in the design and operation of treatment facilities for surface-water supplies, and storage reservoirs and diversion works.

Iowa City, Iowa
June, 1977

Stanley C. Grant
Director and State Geologist
Iowa Geological Survey

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FLUVIAL SEDIMENT DATA FOR IOWA

A data compilation

by Joel R. Schuetz and Wilbur J. Matthes, Jr.

Abstract

This report is a compilation of the fluvial sediment data collected and published by the U.S. Geological Survey and other federal agencies for the State of Iowa. The compilation includes daily extremes, monthly summaries, particle-size analyses of suspended-sediment, particle-size analyses of bed materials at some daily suspended-sediment stations, suspended-sediment concentrations and loads for samples collected at periodic and miscellaneous sites, and reservoir sedimentation studies on streams.

INTRODUCTION

Purpose and Scope

The collection of suspended-sediment data by the U.S. Geological Survey in cooperation with the state and other federal agencies, began on a systematic basis in Iowa in 1943. Some data collected by other agencies are available prior to 1943. The purpose of this report is to present a compilation of these data on fluvial sediment in Iowa published by the U.S. Geological Survey and other federal agencies.

Uses of Data

The data in this report should be of value in the planning, design, and operation of storage reservoirs and diversion works, treatment facilities for water supplies, and in the evaluation of conservation projects. The compilation of these data in one report also makes this information more readily available for further studies of the sediment problems of Iowa.

Acknowledgements

This report has been prepared in cooperation with the Iowa Geological Survey, Samuel J. Tuthill, Director and State Geologist, succeeded by Stanley C. Grant. Financial cooperation in the data-collection activities of the U.S. Geological Survey was provided by the Iowa Geological Survey, the Corps of Engineers, the Soil Conservation Service, and Iowa State University.

GEOLOGY

The surficial deposits that mantle the bedrock in Iowa consist of glacial drift, alluvium, and loess. The glacial drift, consisting of unsorted sandy, bouldery clay tills and sorted sandy, gravelly outwash and ice-contact deposits, covers most of the state to a depth that ranges from a few feet in northeastern Iowa to about 600 feet in northwestern Iowa. The alluvium, consisting of sorted water-laid deposits of clay, silt, sand and gravel, underlies the floodplains and terraces of the streams in the state. Loess, which is a wind-blown material consisting predominantly of silt, veneers the glacial drift in all of the state except the Cary drift in north-central Iowa and parts of the Iowan Erosion Surface in northeastern Iowa (fig. 1). The thickness of the loess varies considerably; the thickest deposits are in western Iowa and in much of the area peripheral to the Iowan Erosion Surface in northeastern Iowa (fig. 1).

The type of surficial material, the degree of dissection, and the stage of the drainage system development probably all have some effect on the sediment yields from different areas of the state. Most of the streams in the loess-covered parts of the state dissect the loess to some depth and the drainage systems are well developed. However, drainage systems in the loess-free Des Moines lobe (Cary drift) are not as well developed as those in the rest of the state.

IOWA SEDIMENT DATA

The cooperative program between the U.S. Geological Survey and the State of Iowa for the collection of fluvial sediment data

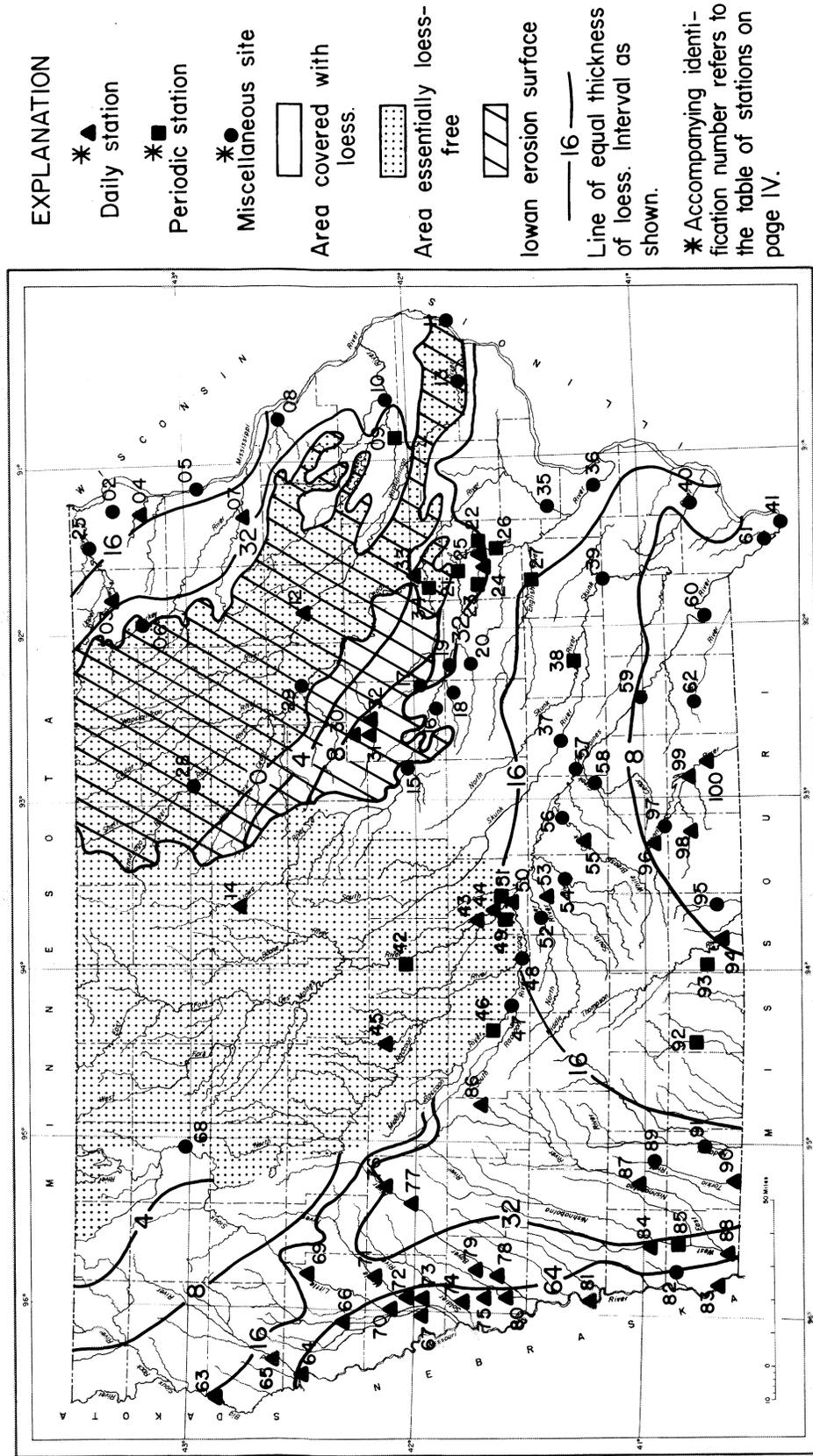


Figure 1. Map showing location of sediment stations and thickness of loess deposits in Iowa. (Loess thickness and geologic features reproduced by permission from QUATERNARY LANDSCAPES OF IOWA by R.V.Ruhe (c) 1969 by the Iowa State University Press, Ames, Iowa.)

on a continuing basis was begun in 1943. Daily sediment data have been collected for one or more years at 48 stations. At many of these stations, but outside the period of daily sediment record, additional sediment samples have been collected. Ten of these stations were operated by the Corps of Engineers as daily stations in a different time period. Periodic data have also been collected at 14 sites in the state. Miscellaneous samples have been collected at 38 sites (fig. 1). Most of these sites at which periodic and miscellaneous data were collected are, or were at one time, regular daily gaging stations. Sediment data have also been published for 18 stations by the Corps of Engineers, and reservoir sediment-deposition surveys have been made at 55 reservoirs in Iowa by the U.S. Soil Conservation Service. Published data of the U.S. Geological Survey, Corps of Engineers, and Soil Conservation Service are summarized in this report.

The fluvial sediment data collected in Iowa by the U.S. Geological Survey and Corps of Engineers fall into four sampling categories which are: (1) daily suspended-sediment samples; (2) periodic suspended-sediment samples at selected sites; (3) miscellaneous samples, which were random samples collected at selected surface-water gaging sites; and (4) periodic bed samples normally collected at sites which were daily sediment stations. The following is a brief discussion of the general methods used in the collection and analysis of the data contained in this report.

Suspended-sediment samples were collected with integrating samplers which are designed to collect a representative sample of

the water and sediment mixture in the vertical being sampled. These samplers and their use are described by Guy and Norman (1970) and by the U.S. Inter-Agency Committee on Water Resources, Sub-committee on Sedimentation (1963).

At most of the daily sampling sites a sampler is permanently installed over one vertical in the cross section. This point is selected to give a representative sample of the water-sediment mixture in the stream cross section. The sediment concentration is not always distributed evenly in the stream cross section and samples were collected from three to ten verticals in using the equal-discharge-increment (EDI) method or from 20 to 25 verticals in using the equal-transit-rate (ETR) method. A mean concentration is then determined and compared with the concentration at the fixed sampling vertical. If the ETR or EDI samples indicated that the concentration of the sample at the fixed sampling vertical was not representative of the cross section, then a correction was applied to the concentrations obtained from the fixed sampling vertical.

Sediment concentration not only varies across the stream but also changes considerably with time, river stage, and discharge. When the streamflow is steady or changing slowly the concentration usually is steady or changing very slowly. The largest change in sediment concentration usually occurs at the beginning of a rise in streamflow or shortly afterwards. The sampling frequency is adjusted so that the variations in sediment concentration can be adequately defined. Once-daily samples are sufficient when the stage and streamflow are steady but more

frequent sampling is required when the flow is changing rapidly so that peak concentrations and daily mean concentrations can be accurately defined. Sediment concentrations are usually quite low and steady during the winter months if streamflow is relatively constant. Samples collected once or twice a week are usually sufficient to produce a good record under such circumstances.

At some sites suspended-sediment samples were collected only on an intermittent basis. At these locations there was not a permanently installed sampler. A one-bottle sample was usually collected at midstream but during periods of high flow, samples may have been collected across the stream by either the EDI or ETR method.

Bed-material samples were collected periodically at most daily suspended-sediment sampling stations. At some locations it was impractical to collect bed-material samples because the streambed was of rock or very large boulders. Bed-material samples after 1953 were collected with approved U.S. samplers described by Guy and Norman (1970) and by the U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation (1963).

Sediment concentrations were determined by the filtration-evaporation method. At many stations the daily mean concentration for some days was obtained by plotting the velocity-weighted instantaneous concentrations on the gage-height chart. The plotted concentrations, adjusted if necessary, for cross-sectional distribution, were connected or averaged by

continuous curves to obtain a concentration graph. This graph represented the estimated velocity-weighted concentration at any time and, for most periods daily mean concentrations were determined from the graph. The days were divided into shorter intervals when the concentration and water discharge were changing rapidly. During some periods of minor variation in concentration, the average concentration of the samples was used as the daily mean concentration.

For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of stream discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. The estimates were further guided by precipitation records and sediment discharge at other stations in the same or nearby basins.

In many instances where there were no samples for several days, the suspended-sediment loads for individual days were not estimated. However, unless noted otherwise monthly and annual totals were adjusted to present a complete record. For some streams, samples were collected weekly, monthly, or less frequently, and only rates of sediment discharge at the time of sampling are shown.

In addition to the records of concentrations and quantities of suspended sediment transported, records of particle-size analyses are included. The particle sizes of suspended sediment for many of the stations, and the particle sizes of the bed material for some of the stations were determined intermittently.

The size of particles carried in suspension by streams commonly ranges from colloids (finer than about 0.00024 millimeters) to coarse sand (2.0 millimeters). Most samples are separated by sieve into two parts - the part coarser, and the part finer than 0.062 millimeters. The coarse fraction is classified by sieve separation or visual-accumulation tube and the fine fractions were classified by the pipet method or the bottom-withdrawal tube method.

PRESENTATION AND ARRANGEMENT OF DATA

The fluvial sediment data compiled in this report are arranged so that the data for daily and periodic stations are given first, followed by the data for miscellaneous sampling sites, and finally by the data for sediment deposition surveys made at selected reservoirs and impoundments.

The sediment data collected at the daily and periodic sediment stations are tabulated in the following sequence: (1) a tabular listing of daily value extremes; (2) monthly and yearly summaries; (3) particle-size analyses of suspended sediment, with periodic or miscellaneous analysis data on suspended-sediment concentrations obtained outside the period of daily records; and (4) particle-size analyses of bed material if available. The reader will find definitions for most column headings in the section on "Definition of Terms".

Data on miscellaneous samples taken at selected locations are tabulated as "Miscellaneous Records". The column headings in this table include a parameter code number. The use and

definition of these codes may be found under "Definition of Terms".

Data for the table on sediment-deposition surveys were selected from Miscellaneous Publication No. 1266, U.S. Department of Agriculture (1973). The following is an explanation of these data as it appears in Publication No. 1266.

"Total drainage area" includes the reservoir area and the area lying above all upstream dams but generally excludes noncontributing drainage areas lying within the watershed boundary. Where available, the drainage area figure published by the U.S. Geological Survey in Water-Supply Papers is usually used. The net drainage area is the sediment-contributing area and generally excludes the reservoir area and the drainage area above upstream reservoirs, or other structures which are effective sediment traps.

The first date shown usually corresponds to the beginning of storage when sediment deposition began. However, for some reservoirs the first date represents the date of the contour or range survey made after the reservoir had been in operation for some time.

For most reservoirs, the storage capacity given is the total storage below the level of the crest of an ungated spillway or the top of gates (less gate-height freeboard, if any) of gated spillways. Where capacity values below the spillway crest elevation are given, footnotes are used to explain.

The capacity-average annual inflow ratio (C/I ratio) was derived from the reservoir storage capacity and the average

annual inflow. Normally the average annual inflow for the entire period of record was used to compute the C/I ratio. This time period may or may not correspond to the period for which sediment accumulation was given. Generally, the C/I ratio was not given if upstream structures controlled 25 percent or more of the drainage area.

The specific weight of deposited sediment is an average or weighted value for the reservoir, determined generally from samples of deposits. In view of the variations with depth and location within the reservoir, specific weight is generally an approximation for the reservoir. The entry is marked by an asterisk where the specific weight is assumed or is calculated from field data or the size-frequency grading of deposits.

The average annual rate of sediment accumulation (acre-foot and tons per square mile of net drainage area), pertains to sediment deposited in the reservoir below the full pool elevation. Sediment deposited in deltas above full pool level or sediment discharged from the reservoir is not included unless explained by footnote. For reservoirs with more than one survey and where the latest survey indicated an increase in specific weight of deposited sediment, the annual sediment accumulation rate in tons per square mile was not always computed in the same manner. For some reservoirs, compaction of earlier sediment was considered and in others it was not. All of the deposited sediment was assumed to have been transported into the reservoir by water.

The agency supplying data is shown in the last column of the table. This agency either has the basic data available or has access to it through cooperative arrangements. The symbols used in this column apply to the following agencies:

CE - Corps of Engineers
SCS - Soil Conservation Service"

DOWNSTREAM ORDER AND STATION NUMBER

A station number has been assigned to each stream location where measurements of streamflow or water quality have been obtained. The numbers have been assigned to conform with the standard listing of gaging stations in downstream order used by the U.S. Geological Survey in its data reports and Water-Supply Papers (page iv). The assigned numbers are in numerical order but are not consecutive. Gaps are left in the numbers to allow for new stations that may be established.

EXPLANATION OF DATA COMPILED

Several descriptive paragraphs precede the presentation of data. For the daily stations these include location, drainage area, average annual suspended-sediment discharge, extremes and remarks. The location of the station and the drainage area are obtained from the most accurate maps available. River mileage, given for some stations, is that determined and used by the Corps of Engineers or other agencies. The average annual suspended-sediment discharge for a station is the average of all complete water years of record and is published only if there are five or more complete water years of record. The years used to determine

the average are not necessarily consecutive. The average suspended-sediment discharge is not published for some stations because of extensive changes in diversion, storage, or other water developments, that have occurred upstream. The maximum and minimum daily suspended-sediment concentration and suspended-sediment discharge for the period of record are given under "EXTREMES". Information pertaining to the accuracy of the records is given in the "REMARKS" paragraph.

The station description is followed by several tables of data. The first contains a summary of the annual maximum and minimum concentrations and loads. The second contains monthly and yearly summaries of water discharge, suspended-sediment loads and yields per square mile of drainage area. This table also includes the mean and the extremes of daily loads, and the maximum daily and weighted daily mean concentration of suspended-sediment by months. The third table contains the results of particle-size analyses. If periodic or miscellaneous samples were obtained at a given station, the results are appended to this third table. A fourth table contains the results of size analyses of bed material, if these data are available for a station.

Prior to October 1967, data for concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). These have been converted to the presently used units of milligrams per liter (mg/l) and degrees Celsius (°C), respectively.

DEFINITION OF TERMS

Acre-feet (sediment) is the volume the suspended sediment would occupy in a reservoir. Monthly and yearly loads in ton were converted to acre-feet using specific weight of 55 pound per cubic foot.

Bed material is the sediment mixture of which the streambed is composed.

Cfs-day is the volume of water represented by a flow of one 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 2,447 cubic meters.

Concentration (see Suspended-sediment concentration).

Cubic foot per second (cfs, FT^3/s , ft^3/s) is the rate of discharge representing a volume of one cubic foot passing a given point during one second and is equivalent to approximately 7.4 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Depth-integrated sample is a sample that is accumulated continuously in a sampler that moves vertically at an approximately constant transit rate between the surface and a point a few inches above the bed of a stream, and that admits the sediment-water mixture at a velocity about equal to the instantaneous stream velocity at each point in the vertical.

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

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Mean discharge is the arithmetic average of individual daily mean discharges during a specific period.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide, from which direct surface run-off 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 noted.

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

Loads (see suspended-sediment discharge).

Milligrams per liter (suspended sediment) (mg/l, MG/L) is a unit for expressing the concentration of suspended sediment, and is based on the dry weight of sediment per liter of water-sediment mixture. Sediment concentrations may be converted to parts per million using the factors in the following table:

Table 1.--Factors for conversion of sediment concentration in milligrams per liter to parts per million.* All values are calculated to three significant figures.

Range of concentration in 1000 mg/l			Divide by	Range of concentration in 1000 mg/l			Divide by
0	-	8	1.00	411	-	424	1.26
8.05	-	24	1.01	427	-	440	1.27
24.2	-	40	1.02	443	-	457	1.28
40.5	-	56	1.03	460	-	473	1.29
56.5	-	72	1.04	476	-	489	1.30
72.5	-	88	1.05	492	-	506	1.31
88.5	-	104	1.06	508	-	522	1.32
105	-	120	1.07	524	-	538	1.33
121	-	136	1.08	540	-	554	1.34
137	-	152	1.09	556	-	570	1.35
153	-	169	1.10	572	-	585	1.36
170	-	185	1.11	587	-	602	1.37
186	-	200	1.12	604	-	617	1.38
201	-	217	1.13	619	-	634	1.39
218	-	232	1.14	636	-	650	1.40
234	-	248	1.15	652	-	666	1.41
250	-	264	1.16	668	-	682	1.42
266	-	280	1.17	684	-	698	1.43
282	-	297	1.18	700	-	715	1.44
299	-	313	1.19	717	-	730	1.45
315	-	329	1.20	732	-	747	1.46
331	-	345	1.21	749	-	762	1.47
347	-	361	1.22	765	-	780	1.48
363	-	378	1.23	782	-	796	1.49
380	-	393	1.24	798	-	810	1.50
395	-	409	1.25				

* Based on water density of 1.000 mg/l and a specific gravity of sediment of 2.65.

Miscellaneous samples are samples which have been collected infrequently at surface water gaging stations.

Parameter codes are five-unit identifying numbers used for the entry and retrieval of data from Water Resources Division data files.

Particle-size is the diameter, in millimeters (mm), of the particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-

accumulation tube) determine fall diameter of particles in either distilled water or in native water (the river water at the time and point of sampling).

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

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of Analysis</u>
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 distribution given in this report is not necessarily representative of all particles in transport in the stream. Most of the organic material 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.

Periodic station is a particular site where limited sediment data is collected systematically over a period of years.

Sediment (fluvial sediment) is the fragmentary material that originates from weathering rocks and is transported by, suspended in, or deposited from water.

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

Sediment yield is the total sediment outflow from a watershed or a drainage area at a point of reference and in

a specified period of time. This is equal to the sediment discharge from the contributing drainage area, expressed usually in terms of tons per square mile per year.

Suspended sediment is the sediment that is supported by the upward components of turbulent currents and that stays in suspension for appreciable lengths of time.

Suspended-sediment concentration is the quantity of sediment relative to the quantity of transporting or suspending fluid, or fluid-sediment mixture. Usually expressed as milligrams per liter.

Suspended-sediment discharge is the quantity of suspended sediment passing through a stream cross section in a unit of time. Usually expressed as tons per day.

Total sediment discharge is the total sediment discharge of a stream and it is the sum of the suspended-sediment discharge and the bedload discharge.

t as found in the tables of monthly and yearly summaries is a trace amount normally of a numerical value of .05 ton or less.

Water Year is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends. Thus, the year ended September 30, 1959, is called the "1959" water year.

Weighted mean concentration is the approximate sediment concentration of a water mass if all the water passing a point on the stream during a given time were mixed.

WSP is used as an abbreviation for Water-Supply Paper of the U.S. Geological Survey in reference to previously published reports.

The following table may be used to convert the English units published herein to metric units.

Table 2.--Factors for conversion of English units published herein to metric units.

<u>Multiply English Units</u>	<u>By</u>	<u>To obtain metric units</u>
	<u>Length</u>	
inches (in)	25.4	millimeters (mm)
feet (ft)	.3048	meters (m)
miles (mi)	1.609	kilometers (km)
	<u>Area</u>	
acres	4,047	square meters (m ²)
square miles (mi ²)	2.590	square kilometers (km ²)
	<u>Volume</u>	
cubic feet (ft ³)	0.02832	cubic meters (m ³)
cfs-day (ft ³ /s-day)	2,447	cubic meters (m ³)
acre-feet (acre-ft)	1,233	cubic meters (m ³)
	<u>Flow</u>	
cubic feet per second (ft ³ /s)	0.02832	cubic meters per second (m ³ /s)
	28.32	cubic decimeters per second (dm ³ /s)
	<u>Mass</u>	
ton (short)	0.9072	tonne (t)

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SEDIMENT-STATION RECORDS

UPPER ICWA RIVER BASIN
 05387500 UPPER IOWA RIVER AT DECORAH, IOWA

LOCATION.--Lat 43°18'19", long 91°04'48", in NE1/4 SW1/4 Sec.16, T.98 N., R.8 W., Winneshiek County, and 1.5 mi (2.4 km) upstream from Trout Run and 1.5 mi (2.4 km) downstream from gaging station.

DRAINAGE AREA.--511 mi² (1,323 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--5 years (1962-67), 150,700 tons (173,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 8,790 mg/l May 26, 1965; minimum daily, 1 mg/l Oct. 21, 1965.

Sediment discharge: Maximum daily, 62,300 tons (56,500 tonnes) June 10, 1967; minimum daily, 0.1 ton (0.09 tonne) Oct. 21, 1964.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water Year	W.S.P. No.	Concentrations (mg/l)				Loads (tons)			
		Max.	Date	Min.	Date	Max.	Date	Min.	Date
1963		940	Mar. 17	2	Feb. 21, Mar. 12	7,100	Mar. 17	0.4	Feb. 21, Mar. 12
1964		3,700	June 23	2	Dec. 27, Feb. 8, 9, 14	25,000	Apr. 2	.3	Dec. 27, Feb. 14
1965		8,790	May 26	1	Oct. 21	57,000	May 26	.1	Oct. 21
1966		5,220	Mar. 4	4	Feb. 24	38,000	Mar. 4	1.9	Feb. 24
1967		3,410	June 9	2	Nov. 21, Feb. 16	62,300	June 10	.4	Nov. 21

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
October...1962	19,022	6,817	2,200	10	13	5.7	440	133
November.....	6,384	314	16	3.0	.61	.26	34	18
December.....	3,573	247	17	2.0	.48	.21	44	26
January.....1963	2,711	101.8	7.0	.80	.20	.08	30	14
February.....	1,897	45.1	4.0	.40	.09	.04	21	9
March.....	22,893	33,694.1	7,100	40	66	28	940	545

UPPER IOWA RIVER AT DECORAH, IOWA--Continued

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-foot	Concentration (mg/L)	
			Maximum	Mean		Maximum daily			Weighted mean	
				Minimum	Minimum					Maximum
April.....	8,049	1,926	430	9.0	64	3.8	1.6	280	89	
May.....	12,755	8,352	3,000	14	269	16	7.0	900	243	
June.....	4,949	1,132	160	13	38	2.2	.94	220	85	
July.....	4,445	1,749	310	17	56	3.4	1.5	490	146	
August.....	3,332	1,267	110	18	41	2.5	1.1	290	141	
September.....	2,549	441	40	5.0	15	.86	.37	150	64	
Water Year 1963	92,559	56,086	7,100	.40	154	110	47	940	224	
October.....	2,358	338	32	5.0	11	.66	.28	130	53	
November.....	2,337	223	25	3.0	7.4	.44	.19	90	35	
December.....	1,791	105.2	13	.30	3.4	.21	.09	67	22	
Cal. Year 1963	70,066	49,374.2	7,100	.30	135	97	41	940	261	
January.....1964	1,959	50.7	7.0	.50	1.6	.10	.04	36	10	
February.....	2,115	67.9	10	.30	2.3	.13	.06	47	12	
March.....	3,027	447	260	1.0	14	.87	.37	322	55	
April.....	9,008	43,099	25,000	14	1,440	84	36	3,500	1,770	
May.....	6,908	8,921	1,200	33	288	17	7.4	1,300	478	
June.....	4,542	19,148	12,000	16	638	37	16	3,700	1,560	
July.....	2,171	461	29	6.0	15	.90	.38	120	79	
August.....	1,458	217	19	3.0	7.0	.42	.18	120	55	
September.....	1,788	167	20	1.0	5.6	.33	.14	80	35	
Water Year 1964	39,462	73,244.80	25,000	.30	200	143	61	3,700	687	
October.....	1,432	67.9	19	.10	2.2	.13	.06	150	18	
November.....	1,297	79.5	14	1.1	2.6	.16	.07	120	23	
December.....	1,558	74.5	9.5	.70	2.4	.15	.06	93	18	
Cal. Year 1964	37,263	72,800.50	25,000	.10	199	142	61	3,700	724	
January.....1965	2,179	58.6	7.7	.50	1.9	.11	.05	42	10	
February.....	7,483	2,786.8	1,200	.60	100	5.5	2.3	430	138	
March.....	21,506	23,243.2	14,000	1.1	750	45	19	1,100	400	
April.....	62,006	170,596.0	32,000	22	5,690	334	142	2,900	1,020	
May.....	9,382	72,755.7	57,000	7.7	2,350	142	61	8,790	2,870	
June.....	4,720	2,422	800	16	81	4.7	2.0	740	190	
July.....	3,853	4,566	2,500	13	147	8.9	3.8	2,200	439	
August.....	2,049	377.2	18	3.8	12	.74	.31	91	68	
September.....	39,144	107,229.6	24,000	6.6	3,570	210	90	1,900	1,010	
Water Year 1965	156,609	384,257.00	57,000	.10	1,050	752	321	8,790	909	
October.....	19,358	3,611	730	12	116	7.1	3.0	270	69	

UPPER IOWA RIVER AT DECORAH, IOWA--Continued

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
November.....	7,748	282.1	36	4.3	9.4	.55	.24	40	14		
December.....	10,787	3,741	1,200	4.1	121	7.3	3.1	370	128		
a1. Year 1965	190,215	391,669.20	57,000	.50	1,070	766	327	8,790	763		
January....1966	5,159	425.7	40	3.0	14	.83	.36	78	31		
February.....	22,089	67,198.1	31,000	1.9	2,400	132	56	1,350	1,130		
March.....	22,228	87,978	38,000	11	2,840	172	73	5,220	1,470		
April.....	13,393	8,486.1	5,100	9.3	283	17	7.1	1,020	235		
May.....	6,915	1,687.6	600	3.9	54	3.3	1.4	480	90		
June.....	8,687	9,445	2,800	10	315	18	7.9	1,240	403		
July.....	6,050	3,885	1,400	13	125	7.6	3.2	780	238		
August.....	3,265	507.9	65	6.0	16	.99	.42	260	58		
September.....	2,195	474.1	42	4.5	16	.93	.40	220	80		
Water Year 1966	127,874	187,721.60	38,000	1.9	514	367	157	5,220	544		
October.....	3,617	3,380.6	2,570	2.5	109	6.6	2.8	980	346		
November.....	2,313	88.8	5.7	.40	3.0	.17	.07	27	14		
December.....	2,290	119.8	18	.90	3.9	.23	.10	96	19		
Cal. Year 1966	98,201	183,676.70	38,000	.40	503	359	153	5,220	693		
January....1967	4,990	1,312.8	760	1.1	42	2.6	1.1	270	97		
February.....	2,634	55.2	5.7	.50	2.0	.11	.05	15	8		
March.....	27,941	64,293	21,900	.80	2,070	126	54	1,710	852		
April.....	8,522	1,817.7	330	4.4	61	3.6	1.5	210	79		
May.....	5,033	2,104.7	730	1.6	68	4.1	1.8	590	155		
June.....	33,095	177,726.4	62,300	3.4	5,920	348	148	3,410	1,990		
July.....	4,370	773	54	10	25	1.5	.65	110	66		
August.....	2,801	363.2	42	4.1	12	.71	.30	130	48		
September.....	1,930	123.8	13	.80	4.1	.24	.10	61	24		
Water Year 1967	99,536	252,159.00	62,300	.40	691	493	210	3,410	938		
October.....	1,897	143.7	12	.40	4.6	.28	.12	75	28		
November.....	1,672	105.5	7.8	1.4	3.5	.21	.09	50	23		
December.....	1,530	41.6	4.3	.40	1.3	.08	.03	27	10		
Cal. Year 1967	96,415	248,860.60	62,300	.40	682	487	208	3,410	956		

05387500 UPPER IOWA RIVER AT DECORAH, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	
June 9,.....	181	21.0	50	24		
Aug. 11,.....	265	22.0	28	20		
Sept. 8,.....	174	19.0	70	33		
Oct. 16, 1969	182	6.5	19	9.3		
Nov. 12,.....	127	6.0	15	5.1		
Dec. 8,.....	134	.5	73	26		
Jan. 13, 1970	81	.0	7	1.5		
Feb. 11,.....	85	.0	22	5.0		
Mar. 10,.....	479	3.0	41	53		
Apr. 13,.....	307	4.5	19	16		
May 11,.....	175	19.5	11	5.2		
June 9,.....	210	23.0	68	39		
July 20,.....	136	21.0	69	25		
Aug. 31,.....	105	20.5	43	12		
Oct. 7, 1970	132	15.0	25	8.9		
Nov. 17,.....	429	3.5	45	52		
Feb. 8, 1971	134	.0	34	12		
Apr. 26,.....	478	14.0	20	26		
June 9,.....	518	16.0	105	147		
July 19,.....	170	24.0	46	21		
Oct. 12, 1971	80	9.0	10	2.2		
June 13, 1972	111	26.0	54	16		

Periodic samples

05387500 UPPER IOWA RIVER AT DECORAH, IOWA--CONTINUED
 PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters		
Mar. 18, 1963	2660		380	2730	15 28 29 37 53 79 86 93	SPWC	
Apr. 2, 1964	2320		4600	28800	24	44 55 78 94 99 100	VPWC VPN
Apr. 2,	2320		4600	28800	15	48	VPWC
Apr. 3,	2260	.0	2000	12200	32	70 99 100	SPWC
May 10,	349	15.5	1400	1320	77	91 95	SPWC
May 17,	322	18.0	1300	1130	66	82 93	VPWC
May 24,	491	21.0	780	1030	46	57 71 100	VPWC
June 23,	238	22.0	2100	1350	61	77 89 100	SPWC
Mar. 1, 1965	8840	.0	1300	31000	36	41 58 80 95 96 99 100	VPWC SPWC
Apr. 8,	1730	3.5	3000	14000	28	49 72 95 99	SPWC
May 26,	1480	18.0	6800	27200	72	73 94 98	SPWC SPN
May 26,	1480	18.0	6800	27200	26	45 62 76	SPN
June 9, 1967	5480	20.0	7280	108000	44	61 78 91 98 99 100	VPWC VPN
June 9,	5480	20.0	7280	108000	22	38 56 83 96	VPWC VPN
Periodic samples							
Jan. 16, 1968	41	.0	21	2.3			
Feb. 14,	45	.0	5	.6			
Mar. 11,	127	2.0	5	1.7			
Apr. 8,	59	9.0	19	3.0			
May 13,	70	20.0	41	7.7			
June 3,	180	23.0	34	17			
July 8,	218	24.0	36	21			
Aug. 3,	143	19.0	68	26			
Sept. 9,	114	16.0	19	5.8			
Oct. 14, 1968	257	16.0	36	25			
Nov. 12,	125	4.0	5	1.7			
Dec. 10,	94	2.0	18	4.6			
Jan. 14, 1969	69	.0	3	.56			
Feb. 12,	89	1.0	7	1.7			
Mar. 10,	117	1.0	8	2.5			
Apr. 7,	1180	9.0	175	558			
May 13,	283	12.0	11	8.4			

PAINT CREEK BASIN

05388500 PAINT CREEK AT WATERVILLE, IOWA

LOCATION.--Lat 43°12'37", long 91°18'21", in NW1/4 NW1/4 sec.22, T.97 N., R.4 W., Alamakee County, at gaging station on downstream side of bridge on county highway X32, 0.5 mi (0.8 km) northwest of Waterville and 10 mi (16.1 km) upstream from mouth.

DRAINAGE AREA.--42.8 mi² (111 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 10,300 mg/l July 4, 1955; minimum daily, not determined. Sediment discharge: Maximum daily, 23,000 tons (20,900 tonnes) July 26, 1953; minimum daily, not determined.

REMARKS.--Some short periods of ice effect during winter months most years.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Date	Min.	Date	Max.	Date	Min.	Date
1953a	1291	6,700	July 26	*	23,000	July 26	<1.0	many days	
1954	1351	9,380	Apr. 15	*	7,470	Apr. 15	<1.0	many days	
1955	1401	10,300	July 4	*	10,700	July 4	<.05	Jan. 24-31	
1956	1451	8,990	May 6	*	13,000	May 6	*		
1957	1521	10,000	June 16	*	13,000	June 17	*		

* Not determined
a November 1952 to September 1953

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tcns)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
November...1952	170.2	19.8	.....	.....	.46	.02	.....	43
December.....	299.8	25.9	.....	.....	.61	.02	.....	32
January....1953	260.5	18.3	.....	.....	.43	.02	.....	26
February.....	299.2	54.6	.....	.....	1.3	.05	.....	68
March.....	1,237.6	2,983	39	947	70	2.5	1,010	893
April.....	661	162.1	30	.....	3.8	.14	297	91
May.....	660	1,223.8	878	39	29	1.0	3,280	687

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
June.....	549	1,276.5	988	4.2	43	1.1	3,770	861	
July.....	1,374	23,303.7	23,000		752	19	6,700	6,280	
August.....	1,057	1,739.6	1,100		56	1.5	1,900	610	
September.....	416	30.1			1.0	.03		27	
October.....	425	39			1.3	.03		34	
November.....	568	63.5			2.1	.05		41	
December.....	383	50.1			1.6	.04		48	
Cal. Year 1953	7,890.30	30,944.30	23,000	4.2	85	26	6,700	1,450	
January.....1954	230.2	13.7			.44	.01		22	
February.....	462.6	154.2	29		5.5	.13	275	123	
March.....	311	251.4	205		8.1	.21	1,140	299	
April.....	625.5	11,146	7,470		372	9.3	9,380	6,600	
May.....	815.8	4,968.2	4,280		160	4.1	3,640	2,260	
June.....	777	5,748.2	3,500		192	4.8	4,580	2,740	
July.....	463	872.9	644		28	.73	2,220	698	
August.....	315	158.4	61		5.1	.13	600	186	
September.....	269.6	43.5			1.4	.04		60	
Water Year 1954	5,645.70	23,509.10	7,470		64	20	9,380	1,540	
October.....	458.6	2,843.5	2,750		92	2.4	2,580	2,300	
November.....	259.2	38			1.3	.03		54	
December.....	215	11			.35	.01		19	
Cal. Year 1954	5,202.50	26,249.00	7,470		72	22	9,380	1,870	
January.....1955	178.7	7.9			.25	.01		16	
February.....	310.8	396.9	384	t	14	.33	540	473	
March.....	893.7	3,445.4	1,860		111	2.9	1,190	1,430	
April.....	389.8	279.8	163		9.3	.23	1,160	266	
May.....	371.4	834	337		27	.70	2,490	832	
June.....	596.4	8,322.5	2,740		277	6.9	5,070	5,170	
July.....	705.4	16,407.4	10,700		529	14	10,300	8,610	
August.....	225.7	163.8	113		5.3	.14	790	269	
September.....	185	28.5			.95	.02		57	
Water Year 1955	4,789.70	32,778.70	10,700	t	90	27	10,300	2,530	
October.....	187.4	27.1	2.1		.87	.02	95	54	
November.....	174	29.3			.98	.02		62	
December.....	166.2	15.7			.51	.01		35	
Cal. Year 1955	4,384.50	29,958.30	10,700	t	82	25	10,300	2,530	

05388500 PAINT CREEK AT WATERVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Minimum	Maximum						
January... 1956	144.3	6.9			.22	.16	0		18	
February.....	122.7	3.2			.11	.07	9.4	3,040	30	
March.....	1,912	11,239.1	3,260		363	263	1.2	2,730	2,180	
April.....	374.9	1,400.4	944		47	33	14	8,990	1,380	
May.....	627.4	16,595.4	13,000		535	388	.03	157	9,800	
June.....	152.3	31.3	4.2		1.0	.73	2.3	4,800	76	
July.....	231.9	2,724.4	2,700		88	64	1.3	2,800	4,350	
August.....	281.8	1,570.7	1,200		51	37	.02	190	2,060	
September.....	124.8	24.4	5.0		.81	.57			72	
Water Year 1956	4,499.70	33,667.90	13,000		92	787	28	8,990	2,770	
October.....	110.6	12.6	1.5	.20	.41	.29	.01	120	42	
November.....	110.1	12.3	3.6		.41	.29	.01	120	41	
December.....	93.2	5.3			.17	.12	0	29	21	
Cal. Year 1956	4,286.00	33,626.00	13,000	.20	92	786	28	8,990	2,910	
January... 1957	196.9	617.6	597		20	14	.52	962	1,160	
February.....	143.2	34.3	9.5		1.2	.80	.03	105	89	
March.....	294.7	4,444	4,120		143	104	3.7	5,530	5,590	
April.....	182.5	5,779.8	5,100		193	135	4.8	6,200	11,700	
May.....	146.1	276	130		8.9	6.4	.23	2,000	700	
June.....	1,043	34,906	13,000	.50	1,160	816	29	10,000	12,400	
July.....	593.5	10,287.3	4,330		332	240	8.6	4,490	6,420	
August.....	225.1	1,026.7	950		33	24	.86	2,400	1,690	
September.....	163.3	18.1	2.8		.60	.42	.02	120	41	
Water Year 1957	3,302.20	57,420.00	13,000	.20	157	1,340	48	10,000	6,440	

05338500 PAINT CREEK AT WATERVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Percent finer than indicated size, in millimeters	Methods of analysis							
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Settling rate (mm per hour)									
Mar. 25, 1954	74	4.0	2560	511	55	93	100	SPWC						
May 24, 1955	116	16.0	4430	1390	52	92	100	SPWC						
June 5, 1955	49		4800	635	56	92	100	SPWC						
Mar. 2, 1956	830	3.0	5710	12800	25	47	96	100						
May 29, 1956	24	19.5	1750	113	67	84	99	100						
May 29, 1956	260	19.5	27400	19200	28	61	94	98	100					
Mar. 23, 1957	464	6.0	12400	15500	25	49	94	97	100					
Apr. 19, 1957	341	15.5	34900	32100	32	65	97	99	100					
Apr. 19, 1957	830	21.0	35700	80000	26	63			SPN					
June 10, 1957	2050	24.5	13800	76400	29	58	92	97	100					
June 17, 1957	905	21.0	23500	57400	25	34	46	63	77	92	94	99	100	SPWC
July 12, 1957	294	19.0	7300	5790	21	26	36	52	81	93	96	98	100	SPWC
Aug. 30, 1957					25	57	98	99	100	SPWC				

Miscellaneous samples collected at site but outside period of record.

June 8, 1966 5.4 20.0 14 .20

TURKEY RIVER BASIN

05411600 TURKEY RIVER AT SPILLVILLE, IOWA

LOCATION.--Lat 43°12'28", Long 91°56'56", in SW1/4 sec.19, T.97N., E.9W., Winneshiek County, on right bank 60 ft (18 m) downstream from bridge on county highway W14 at north edge of Spillville, 150 ft (46 m) downstream from old mill dam, 0.6 mi (1.0 km) upstream from Wonder Creek and at mile 98.5 (158.5 km).

DRAINAGE AREA.--177 mi² (458 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Apr. 2, 1965	*1700	3.0	100	
June 7,.....	*170	22.0	180	
July 12,.....	43	20.5	64	7.4
Aug. 12,.....	22	28.0	26	1.5
Sept.13,.....	67	19.5	81	15
Cct. 11, 1965	117	11.0	13	4.1
Nov. 8,.....	70	10.0	7	1.3
Dec. 14,.....	224	1.0	450	272
Jan. 10, 1966	206	.0	22	12
Feb. 11,.....	328	.5	110	97
Mar. 14,.....	136	8.5	180	66
Apr. 15,.....	94	6.5	14	3.6
May 10,.....	67	12.0	32	5.8
June 7,.....	232	18.5	240	150
July 6,.....	62	28.0	32	5.4
Aug. 8,.....	42	22.0	20	2.3
Sept. 9,.....	24	16.5	32	2.1
Cct. 11, 1966	19	10.5	7	.36
Nov. 4,.....	*35	2.0	7	
Dec. 13,.....	*28	.0	9	
Mar. 7, 1967	140	.0	14	5.3
Apr. 12,.....	69	8.5	9	1.7
May 8,.....	41	13.5	6	.66
June 9,.....	160	21.0	220	95
June 12,.....	150	24.5	110	45
July 10,.....	48	28.0	32	4.1
Aug. 7,.....	36	26.0	50	4.9
Sept.11,.....	14	21.0	6	.23
Nov. 13, 1967	15	3.0	7	.28
Dec. 13,.....	15	.0	28	1.1

05411600 TURKEY RIVER AT SPILLVILLE, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Jan. 16, 1968	6.9	.0	370	6.9
Feb. 13,.....	16	.0	8	.35
Mar. 11,.....	28	.0	15	1.1
May 13,.....	23	18.0	20	1.2
May 21,.....	55	18.0	95	14
June 3,.....	35	25.0	26	2.5
July 8,.....	57	23.0	26	4.0
Aug. 12,.....	70	23.0	24	4.5
Sept. 9,.....	45	17.0	11	1.3
Oct. 14, 1968	112	19.0	43	13
Nov. 12,.....	45	3.0	23	2.8
Dec. 9,.....	29	.0	8	.63
Jan. 13, 1969	25	.0	10	.68
Feb. 11,.....	28	.0	4	.30
Apr. 7,.....	341	6.0	69	64
May 12,.....	110	17.0	19	5.6
June 9,.....	79	20.0	32	6.8
July 14,.....	204	26.0	28	15
Aug. 11,.....	84	25.0	32	7.3
Sept. 8,.....	60	19.0	45	7.3
Oct. 17, 1969	71	3.0	24	4.6
Nov. 12,.....	46	6.5	24	3.0
Dec. 8,.....	34		150	14
Jan. 13, 1970	19	.0	10	.51
Feb. 10,.....	26	.0	15	1.1
Mar. 9,.....	265	.0	62	44
Apr. 13,.....	112	4.5	30	9.1
May 11,.....	58	20.0	10	1.6
June 9,.....	69	24.0	25	4.7
July 20,.....	43	25.5	26	3.0
Aug. 31,.....	48	19.0	24	3.1
Cct. 7, 1970	60	15.0	78	13
Nov. 16,.....	179	4.0	39	19
Feb. 8, 1971	47	.0	28	3.6
Mar. 16,.....	801		540	1170
Apr. 26,.....	153	14.5	27	11
June 7,.....	224		770	466
July 19,.....	73	25.5	37	7.3
Aug. 30,.....	37	21.0	8	.80
Oct. 12, 1971	26		8	.56
Nov. 15,.....	31	9.0	18	1.5

05411600 TURKEY RIVER AT SPILLVILLE, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Feb. 7, 1972	17	.0	41	1.9
Mar. 20,.....	177	1.5	55	26
May 1,.....	192	14.0	46	24
June 13,.....	44	27.0	62	7.4
July 13,.....	1660	23.0	6020	27000
July 24,.....	123	29.0	22	7.3
Sept. 5,.....	65	22.0	17	3.0
Oct. 10, 1972	262	12.0	30	21
Jan. 2, 1973	246	.5	49	33
Feb. 6,.....	216	1.0	33	19
Mar. 12,.....	597	6.5	195	314
Apr. 26,.....	261	11.0	53	37
June 11,.....	135	27.0	26	9.5
July 20,.....	70	20.5	32	6.0
Aug. 27,.....	51	30.0	32	4.4

* Daily mean discharge

TURKEY RIVER BASIN
 05412500 TURKEY RIVER AT GARBET, ICWA

LOCATION.--Lat 42°44'24", Long 91°15'42", in SE1/4 NW1/4 sec. 36, T. 52 N., R. 4 W., Claytco County, 10 ft (3 m) upstream from gaging station on bridge on county highway C43, 800 ft (244 m) upstream from Wayman Creek, 1,000 ft (305 m) southeast of Garber, 2,000 ft (610 m) downstream from Elk Creek, 1 mile (1.6 km) downstream from Volga River, and 19.3 miles (31.9 km) upstream from mouth.

DRAINAGE AREA.--1,545 mi² (4,002 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--5 years (1957-62), 1,861,000 tons (1,688,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 13,500 mg/l May 20, 1959; minimum daily, not determined. Sediment discharge: Maximum daily, 294,000 tons (267,000 tonnes) June 26, 1959; minimum daily, not determined.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Max.	Date
1958	1572	12,400	May 31	279,000	May 31
1959	1643	19,500	May 20	294,000	June 26
1960	1743	11,500	June 2	168,000	June 2
1961	1883	7,730	July 5	174,000	Mar. 25
1962	1943	9,420	May 6	222,000	May 6

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
October.....1957	4,915	273	62	8.8	.18	.23	90	21
November.....	6,033	521	100	17	.34	.43	110	32
December.....	5,595	658	184	21	.43	.55	340	44
January.....1958	3,872	160	8.0	5.2	.10	.13	29	15

05412500 TURKEY RIVER AT GARBER, IOWA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tcns)	Daily loads (tcns)			Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum					Maximum daily	Weighted mean
February.....	10,905	34,288	11,100		1,220	22	29	2,060	1,160	
March.....	10,824	2,269	857		73	1.5	1.9	334	78	
April.....	11,207	4,174	1,170	7.0	139	2.7	3.5	700	138	
May.....	8,377	279,590	279,000		9,020	181	233	12,400	12,400	
June.....	9,433	114,708	53,500	39	3,820	74	96	12,300	4,500	
July.....	9,153	31,237	18,300	35	1,010	20	26	5,910	1,260	
August.....	7,531	27,675	9,520	9.0	893	18	23	2,600	1,360	
September.....	3,254	290			9.7	.19	.24		33	
Water Year 1958	91,099	495,843	279,000		1,360	321	414	12,400	2,020	
October.....	3,147	4,128	3,100		133	2.7	3.4	2,100	486	
November.....	5,244	9,341	5,400		311	6.0	7.8	2,700	660	
December.....	2,432	149			4.8	.10	.12	42	23	
Cal. Year 1958	85,379	508,009	279,000		1,390	329	424	12,400	2,200	
January.....1959	2,132	62			2.0	.04	.05	21	11	
February.....	1,704	56			2.0	.04	.05	19	12	
March.....	106,640	660,381	90,300		21,300	427	551	3,410	2,290	
April.....	71,258	242,813	77,600	60	8,090	157	203	2,050	1,260	
May.....	30,752	663,663	204,000	30	21,400	430	554	19,500	7,990	
June.....	47,456	790,751	294,000	49	26,400	512	660	15,200	6,170	
July.....	33,186	85,134	46,900	55	2,750	55	71	2,870	950	
August.....	21,770	134,442	70,000	54	4,340	87	112	6,800	2,290	
September.....	18,190	70,412	42,000		2,350	46	59	3,800	1,430	
Water Year 1959	343,911	2,661,332	294,000		7,290	1,720	2,220	19,500	2,870	
October.....	16,151	2,822	501	19	91	1.8	2.4	205	65	
November.....	37,354	65,543	23,300	10	2,180	42	55	2,300	650	
December.....	25,208	30,039	10,000	18	969	19	25	1,400	441	
Cal. Year 1959	411,801	2,746,118	294,000		7,520	1,780	2,290	19,500	2,470	
January.....1960	36,740	71,015	38,000	21	2,290	46	59	2,350	716	
February.....	13,070	1,974	246	18	68	1.3	1.6	190	56	
March.....	57,715	427,616	149,000	12	13,800	277	357	3,800	2,740	
April.....	67,782	234,946	67,200	135	7,830	152	196	4,860	1,280	
May.....	114,780	602,866	153,000	491	19,400	390	503	5,200	1,950	
June.....	51,970	477,901	168,000	303	15,900	309	399	11,500	3,410	
July.....	23,620	48,559	18,900	135	1,570	31	41	5,290	761	
August.....	15,227	20,432	5,120	88	659	13	17	2,720	497	
September.....	13,772	11,988	2,800	38	400	7.8	10	1,420	322	
Water Year 1960	473,389	1,995,701	168,000	10	5,450	1,290	1,670	11,500	1,560	
October.....	11,886	4,583	2,660	13	148	3.0	3.8	810	143	

05412500 TURKEY RIVER AT GARBER, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration(mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
November.....	20,291	19,556	23	652	13	16	1,830	357		
December.....	8,440	709	12	23	.46	.59	45	31		
Cal. Year 1960	435,293	1,922,145	12	5,250	1,240	1,600	11,500	1,640		
January...1961	6,880	508	7.0	16	.33	.42	47	27		
February.....	33,507	237,190	3.0	8,470	154	198	5,100	2,620		
March.....	135,800	902,236	105	29,100	584	753	5,740	2,460		
April.....	51,610	102,519	300	3,420	66	86	6,100	736		
May.....	26,749	13,315	88	430	8.6	11	2,130	184		
June.....	15,428	20,419	63	681	13	17	3,340	490		
July.....	12,511	62,871	64	2,030	41	52	7,730	1,860		
August.....	48,833	155,281	43	5,010	101	130	3,370	1,180		
September.....	29,886	203,054	43	6,770	131	169	4,770	2,520		
Water Year 1961	401,821	1,722,241	3.0	4,720	1,110	1,440	7,730	1,590		
October.....	61,492	288,888	139	9,320	187	241	5,200	1,740		
November.....	85,020	285,077	341	9,500	185	238	5,260	1,240		
December.....	29,790	4,239	55	137	2.7	3.5	88	53		
Cal. Year 1961	537,506	2,275,597	3.0	6,230	1,470	1,900	7,730	1,570		
January...1962	18,020	1,237	12	40	.80	1.0	42	25		
February.....	12,640	534	6.0	19	.35	.45	26	16		
March.....	129,800	644,718	8.0	20,800	417	538	3,280	1,840		
April.....	101,110	153,578	544	5,120	99	128	1,320	563		
May.....	74,660	513,644	252	16,600	332	429	9,420	2,550		
June.....	39,207	61,415	279	2,050	40	51	2,750	580		
July.....	60,715	388,862	237	12,500	252	325	7,690	2,370		
August.....	23,393	9,095	45	293	5.9	7.6	460	144		
September.....	41,937	75,958	32	2,530	49	63	1,840	671		
Water Year 1962	677,784	2,427,245	6.0	6,650	1,570	2,030	9,420	1,330		

05412500 TURKEY RIVER AT GARBER, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis							
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters										
Feb. 24, 1958	1200	.0	4240	13700	17	22	30	44	69	96	98	99	100	SPWC	
May 31,	9420	16.5	3620	92100		26		77		99	99	100		SPWC	
May 31,	9420	16.5	3620	92100		38		77						SPN	
May 31,	9840	16.5	53800	1430000		34		57		99	100			SPWC	
May 31,	9840	16.5	53800	1430000		25		55						SPN	
May 31,	11400	16.5	51900	1600000		29		54		99	100			SPWC	
May 31,	11400	16.5	51900	1600000		20		48		100				SPN	
June 1,	1250	16.0	16400	55400		39		75						SPWC	
June 1,	1250	16.0	16400	55400		34	63	80	92	99	99	100		SPN	
June 1,	1040	15.5	11300	31700		27	58	76	92					SPWC	
June 1,	1040	15.5	11300	31700				76		99	100			SPN	
June 8,	500	19.0	8160	11000		44		62		100				SPWC	
June 8,	1070	21.0	16500	47700		34		50		99	100			SPWC	
June 8,	2820	21.0	32600	248000		28		68		98	99	100		SPWC	
July 15,	1280	21.0	9170	31700		43		58		94	98	100		SPWC	
July 16,	1370	20.0	2510	9280		40		58		94	98	100		SPWC	
Aug. 11,	1220	25.0	19600	64600		33		62		97	98	99	100	SPWC	
Aug. 21,	1400	23.0	3700	14000		40		59		97	99	100		SPWC	
Oct. 9, 1958	645	15.5	2910	5070		51		81		99	99	100		SPWC	
Oct. 9,	645	15.5	2910	5070		40		77		99	99	100		SPN	
Nov. 18,	850	8.0	3880	8900		54		80		99	99	100		SPWC	
Mar. 20, 1959	5600	.5	3370	51000		36		39		88	93	96	100	SPWC	
Mar. 20,	5600	.5	3370	51000		16		34		90	94	98	100	SPN	
Mar. 24,	6460	1.0	2230	38900		25		41		96	98	99	100	SPWC	
Mar. 24,	11800	1.0	4500	143000		22		39		92	95	99	100	SPWC	
Mar. 25,	12600	1.5	3020	103000		23		45		92	96	99	100	SPWC	
Mar. 25,	9580	1.0	2160	55900		22		42		92	96	99	100	SPWC	
Mar. 25,	9580	1.0	2160	55900		16		35		90	93	98	100	SPN	
Mar. 29,	10900	.5	2480	73000		36		40		88	92	96	100	SPWC	
Apr. 1,	14900	3.0	2180	87700		25		42		100	100			SPWC	
May 11,	1290	15.5	7340	25600		52		78		99	100			SPWC	
May 19,	3980	15.5	24900	268000		43		63		94	96	98	100	SPWC	
June 1,	4070	19.0	5620	61800		34		55		98	99	100		SPN	
June 1,	4070	19.0	5620	61800		26		53		98	99	100		SPN	
June 25,	2260	20.0	15400	94000		44		73		90	92	96	100	SPWC	
Aug. 3,	3800	21.5	4520	46400		27		64		88	91	96	100	SPWC	
Aug. 22,	4430	23.5	7760	92800		21		44		90	91	96	100	SPWC	
Sept. 27,	4250	15.5	5400	62000		30		70		90	91	96	99	100	SPWC

05412500 TURKEY RIVER AT GARBER, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Percent finer than indicated size, in millimeters	Methods of analysis		
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	0.002	0.004				
Cct. 13,.....	9450	14.5	7070	180000	42	68	97	99	100	SPWC
Nov. 16,.....	6680	4.5	4570	82400	17	42	65	85	90	SPWC
Nov. 16,.....	6350	4.5	2740	47000	23	38	49	75	84	SPWC
Mar. 26, 1962	9320	3.5	2220	55900	19	33	40	79	85	SPWC
Mar. 26,.....	9320	3.5	2220	55900	14	18	30	53	94	SPN
Mar. 27,.....	10900	2.0	2670	78600	24	40	64	89	94	SPWC
Mar. 28,.....	17000	3.0	4840	222000	20	29	46	72	93	SPWC
Mar. 28,.....	17000	3.0	4840	222000	17	21	25	44	70	SPN
May 8,.....	3210	14.5	1460	12700	24	47	68	88	93	SPWC
May 8,.....	3210	14.5	1460	12700	13	20	31	46	64	SPN
May 12,.....	6900	14.5	5040	93900	38	58	80	96	98	SPWC
July 2,.....	6240	19.0	18400	310000	28	53	77	96	99	SPWC
July 20,.....	9200	19.0	9270	230000	35	58	82	94	96	SPWC
July 21,.....	7720	20.0	2840	59200	32	48	64	87	93	SPWC
July 13, 1965	358	26.0	230	222						
June 9, 1966	1020	19.5	230	634						
July 6,.....	468	24.5	120	152						
July 16, 1969	1770	26.0	269	1290						

Miscellaneous samples collected at site but outside period of record.

* Daily mean discharge

05412500 TURKEY RIVER AT GARBER, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis
				Percent finer than indicated size, in millimeters										
				0	4	55	81	93	98	99	100	SV		
July 6, 1966	468		4	.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0

MAQUOKETA RIVER BASIN

05417700 BEAR CREEK NEAR MONMOUTH, IOWA

LOCATION.--Lat 42°02'18", Long 90°52'59", in NE1/4 SE1/4 sec.31, T.84N., R.1E., Jackson County, on right bank 15 ft (5 m) downstream from bridge on county highway, 1.6 mi (2.6 km) upstream from Rat Run, 2.8 mi (4.5 km) south of Monmouth, and 8.2 mi (13.2 km) upstream from mouth.

DRAINAGE AREA.--61.3 mi² (159 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 10, 1966	82	14.5	2320	514
Nov. 18, 1971	19	10.5	77	4.0
Feb. 10, 1972	11	.0	42	1.2
Mar. 23,.....	28	3.0	1140	86
May 4,.....	101	15.0	249	68
June 13,.....	30	24.0	124	10
July 27,.....	122	26.5	771	254
Oct. 17, 1972	20	6.0	41	2.2
Jan. 4, 1973	54	.0	129	19
Feb. 7,.....	29	.0	50	3.9
Mar. 15,.....	205	13.0	46	25
Apr. 23,.....	256	14.0	1360	940
June 15,.....	52	23.0	58	8.1
July 17,.....	24	18.5	53	3.4
Aug. 30,.....	13	22.0	113	4.1

WAPSIPINICON RIVER BASIN
05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IOWA

LOCATION.--Lat 42°27'49", long 91°53'42", in SW1/4 sec.4, T.88 N., R.9 W., Buchanan County, on downstream side of Main Street bridge at Independence, 100 ft (30 m) downstream from dam at abandoned hydroelectric plant, 4.5 mi (7.2 km) downstream from Otter Creek, 10.1 mi (16.3 km) upstream from Pine Creek, 0.4 mi (0.6 km) above gaging station and at mile 142.9 (229.9 km).

DRAINAGE AREA.--1,048 mi² (2,714 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 840 mg/l July 17, 1968; minimum daily, 1 mg/l on many days during 1969, 1970.
Sediment discharge: Maximum daily, 31,100 tons (28,200 tonnes) July 17, 1968; minimum daily, 0.36 ton (0.33 tonne) Jan. 26, 1968.

REMARKS.--Flow affected by ice during winter months each year.

Annual Extremes

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date
1968a	2094	840	July 17	3	Dec. 25; Jan. 6
1969	2144	490	May 7	1	Many days
1970	2154	240	May 19	1	July 18, 19

a For period Dec. 1, 1967, to Sept. 30, 1968

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
			Maximum	Minimum					Mean
December...1967	2,959	62.6	4.8	.73	2.0	.06	.05	18
January...1968	1,588	97.5	41	.36	3.1	.09	.08	23
February.....	2,021	107.1	27	.60	3.8	.10	.09	71
March.....	4,763	223.8	20	1.1	7.2	.21	.19	50
April.....	13,734	2,179	460	14	73	2.1	1.8	120
May.....	10,389	1,789	140	25	58	1.7	1.5	110
June.....	11,035	2,157.6	360	6.3	72	2.1	1.8	210

05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment										Concentration (mg/l)				
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean							
			Maximum	Minimum							Mean						
July.....	105,537	64,962	31,100	23	2,100	62	54	840	228								
August.....	42,308	8,326	1,850	22	269	7.9	6.9	150	73								
September.....	9,870	1,487	100	20	50	1.4	1.2	78	56								
October.....	31,816	4,991	693	33	161	4.8	4.2	101	58								
November.....	11,602	708.8	101	7.1	24	.68	.59	85	23								
December.....	7,128	127.07	13	.97	4.1	.12	.11	20	7								
Cal. Year 1968	251,791	87,155.87	31,100	.36	239	83	73	840	128								
January.....	6,618	53.66	5.6	.43	1.7	.05	.04	9	3								
February.....	6,230	61.99	12	.44	2.1	.06	.05	8	4								
March.....	61,652	4,676.1	630	8.3	151	4.5	3.9	50	28								
April.....	68,840	12,364	762	62	412	12	10	105	67								
May.....	38,146	7,644	1,600	85	247	7.3	6.4	490	74								
June.....	46,655	16,616	7,950	30	554	16	14	230	132								
July.....	124,292	32,163	6,200	116	1,040	31	27	198	96								
August.....	8,543	952.5	102	6.8	31	.91	.80	62	41								
September.....	4,146	524	31	10	17	.50	.44	75	47								
Water Year 1969	415,668	80,882.12	7,950	.43	221	77	68	490	72								
October.....	5,103	649.6	33	8.0	21	.62	.54	112	47								
November.....	5,427	369.9	31	2.7	12	.35	.31	54	25								
December.....	3,986	102.73	15	.63	3.3	.10	.09	43	10								
Cal. Year 1969	379,638	76,177.48	7,950	.43	208	73	64	490	74								
January.....	3,120	43.76	2.3	.75	1.4	.04	.04	9	5								
February.....	3,004	34.56	4.1	.65	1.2	.03	.03	13	4								
March.....	28,984	1,068.5	218	1.5	34	1.0	.89	116	4								
April.....	13,317	1,124	80	12	37	1.1	.94	66	31								
May.....	35,599	15,478.8	2,400	9.8	499	15	13	240	161								
June.....	26,276	5,819	835	32	194	5.6	4.9	111	82								
July.....	5,191	481.26	88	.42	16	.46	.40	69	34								
August.....	12,442	2,007.3	203	6.9	65	1.9	1.7	81	60								
September.....	8,273	980	76	11	33	.94	.82	52	44								
Water Year 1970	150,722	28,159.41	2,400	.42	77	27	24	240	69								

05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (oc)	Suspended sediment										Methods of analysis	
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters									
July 17, 1968	24100	24.0	540	35100	38	57	77	84	85	92	94	99	100	VPWC
July 18,.....	26800	24.0	520	37600	43	55	76	80	85	92	100		SPWC	
June 30, 1969	13500	21.0	205	7470	78	82	85	89	96	99	100		SPWC	
June 14, 1947	19300		536	27900										
Oct. 11, 1965	771	13.0	22	46										
Dec. 14,.....	1770	1.0	36	172										
Jan. 10, 1966	382	.0	3	3.1										
Feb. 11,.....	2740	.5	62	459										
Mar. 14,.....	540	8.0	170	248										
Apr. 15,.....	609	6.5	42	69										
May 10,.....	339	12.0	35	32										
June 7,.....	353		43	41										
July 6,.....	451	26.5	63	77										
Aug. 8,.....	215	25.5	21	12										
Sept. 9,.....	129	20.0	12	4.2										
Oct. 11, 1966	56	11.0	49	7.4										
Nov. 4,.....	89	3.5	33	7.9										
Nov. 8,.....	93	10.5	23	5.8										
Dec. 13,.....	86	1.0	7	1.6										
May 8, 1967	260	14.5	51	36										
June 12,.....	1460	21.0	95	374										
July 10,.....	294	25.0	61	48										
Aug. 7,.....	367	22.0	69	68										
Sept. 11,.....	48	20.0	29	3.8										
Nov. 13, 1967	99	5.0	28	7.5										
Nov. 30,.....	86	4.0	18	4.2										
Nov. 16, 1970	1080	3.0	18	52										
Feb. 11, 1971	141	.5	2	.80										

PERIODIC SAMPLES

05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	
Mar. 15,.....	5610		108	1640		
Apr. 26,.....	568	14.0	40	61		
June 7,.....	648	15.5	82	143		
July 19,.....	272	24.0	86	63		
Aug. 30,.....	63	22.0	152	26		
Oct. 12, 1971	48		20	2.6		
Nov. 15,.....	109	10.0	25	7.4		
Dec. 20,.....	222	1.5	382	229		
Feb. 7, 1972	53	.0	4	.57		
Mar. 20,.....	2790	.0	44	331		
May 1,.....	805	14.0	49	107		
June 13,.....	212	21.5	31	18		
July 24,.....	738	29.5	82	163		
Sept. 5,.....	198	21.5	64	34		
Oct. 10, 1972	1520	11.5	33	135		
Nov. 13,.....	2100	4.5	49	278		
Jan. 2, 1973	1970	.0	15	80		
Feb. 5,.....	2470	1.0	29	193		
Mar. 12,.....	5490	5.0	67	993		
Apr. 26,.....	1550	13.0	29	121		
June 11,.....	907	23.0	89	218		
July 13,.....	379	26.5	50	51		
Aug. 27,.....	171	27.0	23	11		

IOWA RIVER BASIN

05449500 IOWA RIVER NEAR ROWAN, IOWA

LOCATION.--Lat 42°45'36", long 93°37'23", in NW1/4 sec.25, T.92 N., R.24 W., Wright County, 10 ft (3 m) upstream from bridge on county highway C38, 0.9 mi (1.4 km) downstream from Drainage ditch 123, 3.8 mi (6.1 km) northwest of Rowan, 10.7 mi (17.2 km) downstream from confluence of East and West Branches, and at mile 316.4 (509.1 km).

DRAINAGE AREA.--429 mi² (1,111 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--5 years (1957-62), 11,060 tons (10,030 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 760 mg/l July 2, 1962; minimum daily, not determined. Sediment discharge: Maximum daily, 2,020 tons (1,830 tonnes) Mar. 26, 1961; minimum daily, not determined.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Date	Min.	Date	Max.	Date	Min.	Date
1958	1572	750	May 27	*	May 27	850	May 27	*	
1959	1643	600	May 22	*	May 31	1,100	May 31	*	
1960	1743	170	Mar. 30	3	Mar. 19	1,060	Mar. 30	0.2	Mar. 19
1961	1883	230	Mar. 26	4	Jan. 5, 14	2,020	Mar. 26	.1	Feb. 6, 10
1962	1943	760	July 2	4	Mar. 16-18	1,000	July 2	.2	Mar. 14-18

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Concentration (mg/l)		
			Maximum	Minimum	Mean		Maximum daily	Weighted mean	Maximum daily
October.....1957	514	68.1	6.2	.50	2.2	.16	.06	104	49
November.....	616	37.6	5.0	.....	1.3	.09	.03	84	23
December.....	769	27.9	3.7	.....	.90	.07	.02	39	13

05449500 IOWA RIVER NEAR ROWAN, IOWA--CONTINUED

Mcnth	Water discharge (CFS-days)	Lead (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
January...1958	472	12.4			.40	.03	.01	29	10	
February.....	965.8	45.7			1.6	.11	.04	25	18	
March.....	1,267	31.5	3.6		1.0	.07	.03		9	
April.....	1,509	135.7	10	.70	4.5	.32	.11	60	33	
May.....	1,578	2,001.9	850		65	4.7	1.7	750	375	
June.....	4,070	2,521	550	12	84	5.9	2.1	550	229	
July.....	1,514	588.5	100	4.8	19	1.4	.49	227	144	
August.....	452.5	117.9	18	1.5	3.8	.27	.10	300	97	
September.....	264.9	47.8	2.8		1.6	.11	.04	113	67	
Water Year 1958	14,392.20	5,636.00	850		15	13	4.7	750	145	
October.....	284.8	33.6	3.0		1.1	.08	.03		44	
November.....	359.9	15.5			.52	.04	.01	35	16	
December.....	195.2	6.2			.20	.01	.01	20	12	
Cal. Year 1958	43,333.10	5,557.70	850		15	13	4.6	750	154	
January.....1959	112.4	3.1			.10	.01	0	24	10	
February.....	99	2.8			.10	.01	0	14	11	
March.....	3,565	289.4	77		9.3	.67	.24	58	30	
April.....	2,550	83.7	16		2.8	.20	.07	33	12	
May.....	9,417	5,029.6	1,100		162	12	4.2	600	198	
June.....	8,093	1,684.4	734		56	3.9	1.4	200	77	
July.....	1,930	183.9	24		5.9	.43	.15	53	35	
August.....	1,013	141.2	16		4.6	.33	.12	91	52	
September.....	1,071	140.1	19	1.3	4.7	.33	.12	74	48	
Water Year 1959	28,690.30	7,613.50	1,100		21	18	6.4	600	98	
October.....	1,294	104.1	8.3	.50	3.4	.24	.09	60	30	
November.....	1,841	110.6	6.2	.60	3.7	.26	.09	33	22	
December.....	2,479	197.2	44	1.3	6.4	.46	.16	53	30	
Cal. Year 1959	33,464.40	7,970.10	1,100		22	19	6.7	600	88	
January.....1960	3,258	213.1	12	3.2	6.9	.50	.18	40	24	
February.....	1,453	51.7	3.8	.80	1.8	.12	.04	51	13	
March.....	7,138	2,301.2	1,060	.20	74	5.4	1.9	170	119	
April.....	7,777	1,400.2	249	8.9	47	3.3	1.2	165	67	
May.....	6,306	1,068	72	11	34	2.5	.89	100	63	
June.....	2,333	399.1	30	3.9	13	.93	.33	91	63	
July.....	768	82.8	5.2	1.6	2.7	.19	.07	63	40	
August.....	584	136.2	15	1.7	4.4	.32	.11	130	86	
September.....	538	86.4	6.3	1.4	2.9	.20	.07	92	60	

05449500 IOWA RIVER NEAR ROWAN, IOWA--CCONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tcns)			Maximum daily	Weighted mean
Water Year 1960	35,769	6,150.60	1,060	.20	17	14	5.1	170	64	
October.....	455	35.3	2.0	.60	1.1	.08	.03	58	29	
November.....	425	15.5	1.3	.20	.52	.04	.01	32	14	
December.....	571	44.1	2.2	.60	1.4	.10	.04	45	29	
Cal. Year 1960	31,606	5,833.60	1,060	.20	16	14	4.9	170	68	
January...1961	490.8	24.6	1.8	.20	.79	.06	.02	37	19	
February.....	305	17.2	2.1	.10	.61	.04	.01	40	21	
March.....	25,742	6,604.2	2,020	1.4	213	15	5.5	230	95	
April.....	11,808	1,266.4	238	4.1	42	3.0	1.1	69	40	
May.....	2,949	157.6	10	2.1	5.1	.37	.13	38	20	
June.....	1,933	242.4	23	1.7	8.1	.57	.20	75	46	
July.....	934	97.4	6.5	1.3	3.1	.23	.08	65	39	
August.....	1,960	353	68	2.0	11	.82	.29	95	67	
September.....	761	102.1	5.5	2.0	3.4	.24	.09	76	50	
Water Year 1961	48,333.80	8,959.80	2,020	.10	25	21	7.5	230	69	
October.....	3,024	352.8	30	2.2	11	.82	.29	64	43	
November.....	3,473	409.1	37	5.7	14	.95	.34	68	44	
December.....	1,958	161.6	10	1.7	5.2	.38	.13	60	31	
Cal. Year 1961	55,337.80	9,788.40	2,020	.10	27	23	8.2	230	66	
January...1962	1,250	57.1	3.8	.60	1.8	.13	.05	26	17	
February.....	608	39.3	2.3	.50	1.4	.09	.03	38	24	
March.....	11,412	2,479.7	869	.20	80	5.8	2.1	200	81	
April.....	35,072	4,068	340	22	136	9.5	3.4	70	43	
May.....	8,042	3,194.8	800	8.0	103	7.4	2.7	410	147	
June.....	5,658	1,368.7	249	5.1	46	3.2	1.1	145	90	
July.....	23,466	8,753.9	1,000	5.9	282	20	7.3	760	138	
August.....	5,916	2,611	776	19	84	6.1	2.2	250	163	
September.....	24,568	3,441	643	26	115	8.0	2.9	105	52	
Water Year 1962	124,447	26,937.00	1,000	.20	74	63	22	760	80	

05449500 IOWA RIVER NEAR ROWAN, IOWA--CONTINUED

PERIODIC SEDIMENT

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Apr. 25, 1966	282	5.0	130	99
May 23,	217	15.5	170	100
June 14,	1230	15.5	110	365
July 1,	492	14.5	160	213
Aug. 3,	55	17.0	19	2.8
Aug. 30,	33	19.0	78	6.9
Oct. 3, 1966	25	13.5	87	5.9
Oct. 31,	26	13.5	29	2.0
Nov. 28,	31	1.5	28	2.3
Apr. 4, 1967	138	3.5	43	16
May 5,	44	4.5	21	2.5
June 1,	41	19.0	61	6.8
June 16,	903	22.0	170	414
July 6,	129	21.0	110	38
Aug. 1,	34	21.0	150	14
Sept. 7,	192	15.5	61	32
Oct. 4, 1967	22	17.0	22	1.3
Nov. 1,	30	7.0	10	.81
Dec. 4,	23	1.0	63	3.9
Feb. 1, 1968	23	1.0	80	5.0
Mar. 18,	43	2.0	14	1.6
Apr. 3,	22	11.0	9	.53
Apr. 30,	91	14.0	25	6.1
June 4,	34	24.0	42	3.9
Aug. 9,	157	22.0	51	22
Sept. 4,	133	19.0	120	43
Oct. 2, 1968	86	16.0	157	36
Nov. 8,	116	4.0	87	27
Dec. 3,	91	1.0	90	22
Jan. 10, 1969	23	.0	8	.50
Jan. 31,	27	.0	8	.58
Mar. 7,	35	1.0	74	7.0
Mar. 25,	2110	1.0	79	450
Apr. 2,	1010	4.0	28	76
Apr. 29,	292	4.0	213	168
June 5,	180	13.0	119	58
July 1,	4030	21.0	134	1460
July 28,	711	17.0	156	299
Sept. 2,	94	16.0	32	8.1
Oct. 30, 1969	46		48	6.0

05449500 IOWA RIVER NEAR ROWAN, IOWA--CONTINUED

PERIODIC SEDIMENT

DATE	DISCHARGE (CFS) (00064)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Dec. 2,.....	49		6	.79
Jan. 12, 1970	28		6	.45
Feb. 5,.....	24		12	.78
Mar. 3,.....	231		963	601
Apr. 2,.....	183		47	23
May 6,.....	91		216	53
June 2,.....	521		211	297
June 30,.....	82		82	18
Aug. 10,.....	43		140	16
Sept.23,.....	24		65	4.2
Dec. 16, 1970	79	.0	141	30
Jan. 26, 1971	24	.5	45	2.9
Mar. 8,.....	144	.0	25	9.7
Mar. 31,.....	2060	4.0	83	462
Apr. 21,.....	254	13.0	365	250
June 4,.....	127	26.5	97	33
June 11,.....	928	20.0	69	173
July 13,.....	156	24.5	291	123
Aug. 24,.....	30	25.0	65	5.3
Oct. 5, 1971	36		192	19

IOWA RIVER BASIN

05453400 IOWA RIVER ABOVE CORALVILLE, IOWA

LOCATION. -- Lat 41°04'00", Long 91°34'00", in SE1/4 sec. 32, T. 81 N., R. 6 W., Johnson County, at Mahaffey Bridge on county road Y and 3 mi (4.8 km) northeast of North Liberty, and 6.5 mi (10.5 km) north of Coralville.

DRAINAGE AREA. -- 3,035 mi² (7,861 km²).

EXTREMES. -- Period of record: Sediment concentrations: Maximum daily, 5,450 mg/l Mar. 7, 1946; minimum daily, not determined. Sediment discharge: Maximum daily, 106,000 tons (96,200 tonnes) May 22, 1944; minimum daily, not determined.

REMARKS. -- Station not operated during winter months.

ANNUAL EXTREMES

Year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Min.	Date	Date
1944	+	2,950	*	Aug. 6	May 22
1945	+	3,200	*	Apr. 5	Apr. 5
1946	+	5,450	*	Mar. 7	Mar. 7
1947	+	2,270	*	Apr. 5	June 16

* Not determined

+ Iowa Geological Survey, 1955, Quality of Surface Waters of Iowa, 1886-1954

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						
			Daily loads (tons)		Tons per sq mi	Concentration (mg/l)			
			Maximum	Minimum			Mean	Maximum daily	
October....1943	18,719	3,253	254	49	105	1.1	2.7	132	64
November.....	21,830	8,006	1,570	22	267	2.6	6.7	555	136
December...1-12	8,779	2,160	564	30	180	.71	1.8	233	91
March.....1944	81,580	262,413	27,300	182	8,460	86	219	2,760	1,190

05453400 ICWA RIVER ABOVE CORAIVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean				Maximum daily	Weighted mean
April.....	105,870	268,600	26,600	2,150	8,950	89	224	2,230	940	
May.....	296,220	626,680	106,000	2,820	20,200	206	523	2,800	784	
June.....	252,100	298,080	48,700	2,050	9,940	98	249	860	438	
July.....	77,290	167,190	14,700	1,200	5,390	55	140	2,300	801	
August.....	36,455	67,117	20,700	174	2,170	22	56	2,950	682	
September.....	23,282	11,567	1,440	133	386	3.8	9.7	408	184	
October.....	16,763	4,928	666	61	159	1.6	4.1	348	109	
November.....	13,936	1,376	162	10	46	.45	1.1	118	37	
December...1-8	2,875	116	22	11	14	.04	.10	21	15	
March.....1945	140,900	235,110	16,700	1,050	7,580	77	196	1,360	618	
April.....	137,050	212,250	36,300	2,000	7,080	70	177	3,200	574	
May.....	120,670	137,744	17,000	873	4,440	45	115	1,340	423	
June.....	136,670	212,300	24,800	2,190	7,080	70	177	1,570	575	
July.....	41,340	54,096	9,910	360	1,750	18	45	1,510	485	
August.....	43,210	89,312	13,700	220	2,880	29	75	2,330	766	
September.....	18,424	9,306	1,630	54	310	3.1	7.8	610	187	
October.....	16,389	7,550	2,160	19	244	2.5	6.3	714	171	
March.....1946	145,580	394,490	61,200	1,140	12,700	130	329	5,450	1,000	
April.....	46,910	29,391	4,130	227	980	9.7	25	490	232	
May.....	65,065	139,827	27,200	196	4,510	46	117	2,490	796	
June.....	74,050	332,471	47,100	702	11,100	110	278	3,930	1,660	
July.....	43,835	150,184	37,100	413	4,840	49	125	3,680	1,270	
August.....	24,082	38,920	10,300	161	1,260	13	32	1,850	599	
September.....	45,645	122,586	26,900	120	4,090	40	102	2,550	995	
April.....1947	171,280	284,370	35,900	1,900	9,480	94	237	2,270	615	
May.....	81,260	130,364	24,700	969	4,210	43	109	2,070	594	
June.....	481,200	654,590	98,800	3,600	21,800	216	546	1,140	504	
July.....	162,610	141,611	24,800	933	4,570	47	118	642	323	
August.....	20,056	10,038	885	61	324	3.3	8.4	273	185	
September.....	9,223	1,616	82	27	54	.53	1.3	94	65	

IOWA RIVER BASIN

05454000 RAPID CREEK NEAR IOWA CITY, IOWA

LOCATION.--Lat 41°04'19", long 91°02'15", in NE1/4 NE1/4 sec.36, T.80 N., R.6 W., Johnson County, on left bank 80 ft (24 m) upstream from bridge on State Highway 1, 3.5 mi (5.6 km) northeast of Iowa City, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--25.3 mi² (65.5 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 29, 1948	13		2590	91
May 8, 1964	32		620	54
June 22,.....	158		13100	5590
Aug. 21,.....	1.7	20.0	430	2.0
NOV. 5, 1964	.30	10.0	13	.01
Jan. 4, 1965	3.6	.0	39	.38
Jan. 15,.....	.10	.0	79	.02
Jan. 22,.....	866	1.0	460	1080
Jan. 22,.....	815	1.0	540	1190
Feb. 4,.....	.10	.0	5	.00
Mar. 1,.....	19		120	6.2
Mar. 5,.....	17	2.0	14	.64
Apr. 5,.....	342		6500	6000
Apr. 8,.....	42		2900	329
Apr. 29,.....	23	15.5	42	2.6
May 27,.....	79		1400	299
June 10,.....	15	18.0	43	1.7
July 2,.....	3.5	20.5	41	.39
July 30,.....	.10	19.5	23	.01
Sept. 2,.....	.60	15.5	110	.18
Sept. 7,.....	106	19.0	3500	1000
Sept.10,.....	166	20.0	63	28
Sept.20,.....	447	19.5	3000	3620
Sept.21,.....	2030	19.5	930	5100
Sept.23,.....	49	14.5	89	12
Oct. 4, 1965	13	10.5	11	.39
Nov. 9,.....	3.8	9.5	6	.06
Dec. 3,.....	5.2	2.0	22	.31
Dec. 30,.....	49	1.5	48	6.4
Feb. 1, 1966	4.1	.0	36	.40
Feb. 8,.....	1400	.0	1090	4120
Feb. 9,.....	311	.5	1290	1080
Mar. 11,.....	6.7	5.0	13	.24
Apr. 12,.....	12	5.0	51	1.7

05454000 RAPID CREEK NEAR ICWA CITY, ICWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 9,.....	13		14	.49
May 16,.....	64	14.5	220	.38
May 17,.....	81	11.0	660	144
May 23,.....	1830		18400	90900
May 26,.....	51		270	.37
June 8,.....	15	20.0	9820	.398
July 19,.....	6.1	24.5	42	.69
Aug. 12,.....	1.4	20.0	22	.08
Dec. 9, 1966	1.0	.0	4	.01
Dec. 12,.....	1.1		30	.09
Jan. 25, 1967	5.2		200	2.8
Mar. 5,.....	1.2	.0	6	.02
Apr. 25,.....	11	7.0	11	.33
May 31,.....	1.3	15.5	150	.53
June 27,.....	5.5	20.0	47	.70
July 27,.....	.40		52	.06
Cct. 31, 1967	77	9.0	145	.30
Nov. 29,.....	13	2.0	46	1.6
Dec. 28,.....	8.8	.0	30	.71
Feb. 27, 1968	4.0	.0	12	.13
Mar. 26,.....	6.8	10.0	14	.26
May 1,.....	14	13.0	8	.30
May 27,.....	21	12.0	340	.19
June 26,.....	54	16.0	1790	.261
July 29,.....	3.6	24.0	78	.76
Aug. 28,.....	.17	19.0	37	.02
Oct. 1, 1968	3.4	21.0	25	.23
Cct. 28,.....	5.9	7.0	41	.65
Nov. 27,.....	4.0	3.0	29	.31
Dec. 23,.....	5.0	.0	35	.47
Jan. 29, 1969	.82	.0	1160	2.6
Feb. 24,.....	25	.0	57	3.8
Mar. 17,.....	35	2.0	513	.48
Apr. 21,.....	32	10.0	38	3.3
May 23,.....	17	18.0	9	.41
June 18,.....	21	17.0	86	4.9
July 22,.....	36	20.0	79	7.7
Aug. 26,.....	7.1	19.0	66	1.3
Sept. 18,.....	3.2	18.0	53	.46
Cct. 27, 1969	3.6	4.0	30	.29
Nov. 24,.....	2.8	5.0	13	.10

05454000 RAPID CREEK NEAR IOWA CITY, ICWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Dec. 15,.....	2.7	.5	33	.24
Jan. 27, 1970	2.6	.0	16	.11
Mar. 23,.....	16	2.0	18	.78
Apr. 28,.....	20	20.0	70	3.8
May 28,.....	27	16.5	124	9.0
June 22,.....	30	21.0	187	15
July 27,.....	3.3	25.5	80	.71
Aug. 27,.....	2.1		74	.42
Oct. 12, 1970	14	13.5	71	2.7
Dec. 21,.....	21		46	2.6
Jan. 26, 1971	6.0	.0	39	.60
Feb. 23,.....	16		222	9.6
Mar. 23,.....	8.1	3.5	52	1.1
Apr. 20,.....	7.5	23.5	68	1.4
June 21,.....	2.2	24.5	64	.40
July 20,.....	1.5	20.0	111	.40
Sept. 23,.....	.10	13.0	38	.01
Oct. 27, 1971	.21	16.0	47	.03
Nov. 23,.....	2.6	1.0	33	.23
Dec. 15,.....	490		1720	2280
Dec. 28,.....	12	.0	53	1.7
Feb. 23, 1972	5.3	.0	6	.09
Mar. 28,.....	11	4.0	20	.59
May 30,.....	20	16.5	56	3.0
June 20,.....	39	17.0	530	56
Aug. 23,.....	12	19.5	64	2.1
Sept. 26,.....	4.4	17.0	94	1.1
Oct. 24, 1972	11	7.5	30	.89
Dec. 28,.....	6.1	3.0	35	.58
Jan. 22, 1973	55	1.0	637	95
Feb. 20,.....	8.3		266	6.0
Mar. 29,.....	25	8.5	14	.94
Apr. 20,.....	1520	16.0	9750	40000
May 4,.....	77	5.0	35	7.3
June 14,.....	25	22.0	106	7.0
July 26,.....	6.4	22.5	43	.74
Sept. 10,.....	2.8	19.0	115	.87

IOWA RIVER BASIN

05454300 CLEAR CREEK NEAR CORALVILLE, IOWA

LOCATION.--Lat 41°40'36", long 91°35'55", in NE1/4 SE1/4 sec.1, T.79N., R.7W., Johnson County, on left bank about 50 ft (15 m) upstream from bridge on county highway, 1.1 mi (1.8 km) west of Post Office in Coralville, 1.5 mi (2.4 km) downstream from Deer Creek and 2.7 mi (4.3 km) upstream from mouth.

DRAINAGE AREA.--98.1 mi² (254 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Nov. 5, 1964	24	10.5	9	.58
Jan. 22, 1965	1480	.0	650	2600
Mar. 1,.....	850		3900	8950
Apr. 24,.....	1800	8.5	4500	21900
June 10,.....	54	18.0	210	31
July 9,.....	570		9800	15100
Aug. 27,.....	16	23.5	240	10
Sept. 7,.....	329	18.0	330	293
Sept. 9,.....	166	21.5	720	323
Sept.17,.....	47	19.0	77	9.8
Sept.20,.....	1590	19.5	650	2790
Sept.21,.....	3700	20.0	1100	11000
Sept.23,.....	188	21.0	590	299
Oct. 8, 1965	83	13.5	54	12
Nov. 19,.....	30	2.0	21	1.7
Dec. 30,.....	118	1.5	210	67
Mar. 11, 1966	34	5.0	150	14
May 16,.....	259	13.5	1400	979
May 18,.....	240	14.5	120	78
May 24,.....	2100	15.0	3620	20500
July 20,.....	42	26.5	69	7.8
Aug. 5,.....	32	21.0	140	12
Sept. 2,.....	6.5	25.5	33	.58
Dec. 14, 1966	4.2	.0	16	.18
Jan. 24, 1967	51	6.0	280	39
Jan. 25,.....	290	.0	3760	2940
Mar. 27,.....	67	9.0	1210	219
Apr. 14,.....	250	10.0	3060	2070
May 31,.....	16	12.0	22	.95
June 27,.....	16	20.0	35	1.5
July 27,.....	4.6	24.5	83	1.0
Aug. 28,.....	4.1	19.0	10	.11

05454300 CLEAR CREEK NEAR CORALVILLE, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Oct. 31, 1967	190	9.0	730	374
Dec. 27,.....	29	.0	18	1.4
Feb. 27, 1968	14	.0	6	.23
Mar. 26,.....	23	9.0	39	2.4
Apr. 29,.....	70	11.0	190	36
May 27,.....	43	12.0	360	42
June 27,.....	86	14.0	490	114
July 30,.....	5.2	24.0	3	.04
Aug. 28,.....	2.0	17.0	6	.03
Oct. 1, 1968	5.4	22.0	9	.13
Oct. 29,.....	4.5	8.0	28	.34
Nov. 25,.....	5.9	4.0	10	.16
Dec. 23,.....	6.6	.0	24	.43
Jan. 27, 1969	24	1.0	10	.65
Feb. 24,.....	160	.0	132	57
Mar. 17,.....	243	2.0	2380	1560
Apr. 30,.....	47	10.0	17	2.2
May 23,.....	70	17.0	127	24
June 17,.....	73	17.0	245	48
July 25,.....	118	23.0	326	104
Aug. 26,.....	41	19.0	86	9.5
Sept. 18,.....	32	18.0	73	6.3
Oct. 27, 1969	28	4.5	37	2.8
Nov. 25,.....	22	2.0	12	.71
Dec. 15,.....	14	.0	29	1.1
Jan. 28, 1970	13	.0	5	.18
Mar. 23,.....	72	1.5	145	28
Apr. 27,.....	62	15.0	193	32
May 27,.....	72	20.0	209	41
June 22,.....	96	20.0	599	155
July 27,.....	18	24.0	95	4.6
Aug. 25,.....	12	25.5	22	.71
Oct. 12, 1970	80	15.5	223	48
Dec. 21,.....	91		216	53
Jan. 28, 1971	20	.5	9	.50
Feb. 23,.....	30	3.5	200	16
Mar. 23,.....	34	20.0	75	6.9
Apr. 19,.....	39	13.0	229	24
May 25,.....	34	26.0	260	24
June 21,.....	16	22.0	683	30
July 21,.....	13		115	4.0

05454300 CLEAR CREEK NEAR CORALVILLE, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Sept.27,.....	3.6		9	.09
Oct. 26, 1971	2.8	15.5	22	.17
Nov. 23,.....	4.7	3.0	577	7.3
Dec. 29,.....	33	.0	60	5.3
Feb. 23, 1972	14	.0	14	.53
Mar. 28,.....	40	5.0	78	8.4
May 26,.....	79	21.5	260	55
June 20,.....	429	19.0	7730	8950
Aug. 25,.....	68	22.0	608	112
Sept.26,.....	19	17.0	38	1.9
Oct. 24, 1972	66	8.0	108	19
Nov. 24,.....	74	3.5	71	14
Dec. 26,.....	31	.0	27	2.3
Jan. 24, 1973	43	.5	55	6.4
Mar. 27,.....	119	8.0	176	57
June 15,.....	101	22.0	173	47
July 27,.....	29	25.0	25	2.0
Sept.10,.....	22	19.5	114	6.8

IOWA RIVER BASIN

05454500 IOWA RIVER AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'24", long 91°32'27", in SE 1/4 SE 1/4 sec. 9, T. 79 N., R. 6 W., Johnson County, at Benton Street Bridge in Iowa City, 0.5 mi (0.8 km) downstream from gaging station, 0.3 mi (0.5 km) upstream from Ralston Creek, 4.1 mi (6.6 km) downstream from Clear Creek, and at mile 73.7 (118.6 km).

DRAINAGE AREA.--3,271 mi² (8,472 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--30 years, 718,000 tons (651,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 7,800 mg/l June 13, 1953; minimum daily, not determined. Sediment discharge: Maximum daily, 177,000 tons (161,000 tonnes) May 23, 1944; minimum daily, not determined.

REMARKS.--Diurnal fluctuation at low stages caused by powerplant upstream. Flow regulated by Coralville Lake 9.6 mi (15.4 km) upstream since Sept. 17, 1958.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	
1944	1022	3,860	5	Nov. 22, 23	177,000	6	May 23	Jan. 25	
1945	1030	3,590	4	Feb. 10-12	51,700	3	June 10	Jan. 24, Feb. 9-12	
1946	1050	5,200	7	Jan. 26, 27	67,800	6	June 20	Dec. 30	
1947	1162	3,810	4	Apr. 5	152,000	6	June 16	Feb. 5	
1948	1162	3,110	17	Nov. 12	80,520	7	Mar. 19	Feb. 15	
1949	1162	3,330	10	Feb. 6	43,480	8	Mar. 8	Feb. 17	
1950	1187	5,700	11	Dec. 24	109,300	3	July 2	Dec. 24	
1951	1198	3,040	7	Feb. 5	46,600	2	Apr. 3	Jan. 28, Feb. 2-8, 10	
1952	1251	4,310	6	Jan. 6, 7	55,900	12	May 23	Jan. 6, 7	
1953	1291	7,800	*	June 13	83,000	*	June 28	*	
1954	1351	3,270	*	June 14	31,700	*	June 4	*	
1955	1401	4,320	*	Apr. 24	48,400	*	Apr. 24	*	
1956	1451	1,420	*	May 16	7,480	*	Aug. 31	*	
1957	1521	2,480	21	Jan. 2, 4, Feb. 7, 8	19,800	5	June 20	Nov. 23	

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water Year	W.S.P. no.	Daily suspended sediment					
		Concentrations (mg/l)			Loads (tons)		
		Max.	Min.	Date	Max.	Min.	Date
1958	1572	2,460	3	Jan. 29, 31, Feb. 6, 8	18,700	2	June 13
1959	1643	1,920	4	Feb. 12	19,000	3	Apr. 28
1960	1743	2,990	7	Nov. 29, 30	57,500	16	June 4
1961	1883	1,580	10	Jan. 12	25,600	6	Mar. 4
1962	1943	2,560	4	Jan. 6	60,000	7	July 14
1963	1949	640	5	Feb. 16, 18, 25, 26	13,000	6	Mar. 19
1964	1956	820	2	Dec. 16, 18, 20, 21, 27	4,000	0.9	June 23
1965	1963	2,200	3	Jan. 14, 15	25,000	2	Apr. 6
1966	1993	4,700	9	Jan. 12	35,000	6	May 24
1967	2013	3,070	3	Dec. 21, 27, 29	31,000	3	June 7
1968	2094	530	5	Jan. 1	2,730	4	Nov. 2
1969	2144	2,550	7	Feb. 11	58,700	11	Apr. 4
1970	2154	2,020	14	Dec. 2, 12	36,200	21	Mar. 3
1971	2164	741	16	Jan. 9	17,200	13	Mar. 8
1972	+	1,700	4	Nov. 24	21,100	4.2	June 20
1973	+	1,580	12	Oct. 10	20,300	18	Apr. 21

* Water Resources Data for Iowa, Part 2, Water Quality Records
* Not determined

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum	Maximum daily			Weighted mean	
			Maximum	Minimum								
October... 1943	19,885	3,272	178	45	106	1,220	1,220	1.0	2.7	101	61	
November.....	24,433	3,672	823	10	122	3,980	3,980	1.1	3.1	224	56	
December.....	17,946	1,315	139	11	42	9,100	9,100	.40	1.1	50	27	
January... 1944	17,032	37,748	12,200	6.0	1,220	3,980	3,980	12	32	1,860	821	
February.....	36,171	115,364	48,600	18	3,980	9,100	9,100	35	96	3,840	1,180	
March.....	87,331	282,070	34,300	95	34,300	10,900	10,900	86	235	2,860	1,200	
April.....	110,710	328,470	43,700	2,120	10,900	36,200	36,200	100	274	2,590	1,100	
May.....	305,540	1,121,320	177,000	3,680	36,200	18,700	18,700	343	936	3,860	1,360	
June.....	264,450	561,750	90,500	5,780	18,700	4,250	4,250	172	469	1,510	787	
July.....	78,300	131,706	13,100	435	4,250	8.0	8.0	40	110	1,350	623	
August.....	37,718	26,117	7,510	124	842	160	160	1.5	4.0	119	74	
September.....	23,894	4,786	443	99	160	7,150	7,150	800	2,180	3,860	947	
Water Year 1944	1,023,410	2,617,590	177,000	6.0	7,150	800	800	800	2,180	3,860	947	
October.....	17,090	3,714	216	81	120	1.1	1.1	1.1	3.1	112	81	
November.....	14,336	1,847	139	14	62	.56	.56	.56	1.5	91	48	
December.....	10,383	563	27	6.0	18	.17	.17	.17	.47	34	20	
Cal. Year 1944	1,002,955	2,615,455	177,000	6.0	7,150	800	800	800	2,180	3,860	966	
January... 1945	8,057	298	30	3.0	9.6	.09	.09	.09	.25	34	14	
February.....	33,533	17,463	2,260	3.0	623	5.3	5.3	5.3	15	372	193	
March.....	144,330	306,569	26,000	929	9,890	94	94	94	256	1,310	787	
April.....	140,730	195,610	25,400	2,380	6,520	60	60	60	163	2,160	515	
May.....	124,860	146,492	17,900	285	4,730	45	45	45	122	1,360	435	
June.....	142,970	261,420	51,700	2,270	8,710	80	80	80	218	3,590	677	
July.....	43,422	46,578	11,900	156	1,500	14	14	14	39	1,930	397	
August.....	43,478	41,311	5,630	157	1,330	13	13	13	34	850	352	
September.....	18,878	4,154	457	59	138	1.3	1.3	1.3	3.5	180	82	
Water Year 1945	742,067	1,026,019	51,700	3.0	2,810	314	314	314	856	3,590	512	
October.....	16,976	3,946	618	37	127	1.2	1.2	1.2	3.3	206	86	
November.....	15,293	3,041	524	15	101	.93	.93	.93	2.5	260	74	
December.....	15,650	4,905	1,480	6.0	158	1.5	1.5	1.5	4.1	460	116	
Cal. Year 1945	748,177	1,031,787	51,700	3.0	2,830	315	315	315	861	3,590	511	
January... 1946	122,018	187,216	41,200	9.0	6,040	57	57	57	156	2,140	568	
February.....	64,170	20,314	2,690	28	725	6.2	6.2	6.2	17	297	117	
March.....	150,430	400,620	46,700	602	12,900	122	122	122	334	3,980	986	
April.....	48,584	19,520	3,480	46	651	6.0	6.0	6.0	16	395	149	

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum daily	Weighted mean
Suspended sediment										
May.....	66,679	81,896	19,400	82	2,640	25	68	1,760	455	
June.....	77,050	331,237	67,800	229	11,000	101	276	5,200	1,590	
July.....	45,900	114,902	32,800	174	3,710	35	96	3,140	927	
August.....	25,954	12,883	3,830	77	416	3.9	11	716	184	
September.....	46,477	71,040	18,800	59	2,370	22	59	1,850	566	
Water Year 1946	695,181	1,251,520	67,800	6.0	3,430	383	1,040	5,200	667	
October.....	47,665	54,981	18,900	85	1,770	17	46	1,840	427	
November.....	58,530	35,207	6,820	207	1,170	11	29	804	223	
December.....	27,646	3,308	215	17	107	1.0	2.8	68	44	
Cal. Year 1946	781,103	1,333,124	67,800	9.0	3,650	408	1,110	5,200	632	
January.....	22,588	2,414	423	21	78	.74	2.0	116	40	
February.....	39,267	15,227	2,730	6.0	543	4.7	13	347	144	
March.....	76,165	170,620	28,600	40	5,500	52	142	2,720	830	
April.....	179,360	427,240	65,000	1,310	14,200	131	357	3,810	882	
May.....	83,730	111,984	21,700	564	3,610	34	93	1,680	495	
June.....	494,960	1,256,340	152,000	6,940	41,900	384	1,050	1,880	940	
July.....	180,380	282,604	39,400	396	9,120	86	236	1,540	580	
August.....	20,947	5,921	429	46	191	1.8	4.9	148	105	
September.....	9,538	1,278	71	27	43	.39	1.1	.....	50
Water Year 1947	1,240,776	2,367,124	152,000	6.0	6,490	724	1,980	3,810	707	
October.....	7,770	1,666	103	36	54	.51	1.4	113	79	
November.....	15,483	1,827	130	24	61	.56	1.5	70	44	
December.....	17,885	2,626	276	28	85	.80	2.2	115	54	
Cal. Year 1947	1,148,073	2,279,747	152,000	6.0	6,250	697	1,900	3,810	735	
January.....	8,961	925	64	15	30	.28	.77	55	38	
February.....	24,569	90,854	55,800	7.0	3,130	28	76	3,110	1,370	
March.....	222,740	696,065	80,500	217	22,500	213	581	2,450	1,160	
April.....	56,151	58,075	13,000	175	1,940	18	48	1,010	383	
May.....	57,614	63,887	16,200	93	2,060	20	53	1,720	411	
June.....	20,856	11,443	3,880	92	381	3.5	9.6	1,160	203	
July.....	28,602	47,008	13,200	147	1,520	14	39	1,900	609	
August.....	8,803	2,401	389	21	77	.73	2.0	215	101	
September.....	5,715	1,336	99	19	45	.41	1.1	150	87	
Water Year 1948	475,149	978,113	80,500	7.0	2,670	299	816	3,110	762	
October.....	5,553	1,972	599	15	64	.60	1.6	402	132	
November.....	7,686	1,972	248	14	66	.60	1.6	179	95	

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Lead (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
December.....	7,912	2,012	508	9.0	65	.62	1.7	272	94	
Cal. Year 1948	455,162	577,950	80,500	7.0	2,670	.299	816	3,110	796	
January.... 1949	44,481	24,875	3,890	17	802	7.6	21	577	207	
February.....	31,269	39,303	15,200	8.0	1,400	12	33	968	466	
March.....	182,820	431,063	43,500	670	13,900	132	360	3,330	873	
April.....	67,460	72,909	22,600	165	2,430	22	61	1,520	400	
May.....	22,247	4,530	234	89	146	1.4	3.8	100	75	
June.....	27,743	84,405	19,600	108	2,810	26	70	2,740	1,130	
July.....	19,769	10,036	843	96	324	3.1	8.4	343	188	
August.....	6,509	1,383	127	15	45	.42	1.2	159	79	
September.....	7,857	4,155	1,250	14	139	1.3	3.5	526	196	
Water Year 1949	431,306	678,615	43,500	8.0	1,860	.207	566	3,330	583	
October.....	7,402	2,887	849	12	93	.88	2.4	392	144	
November.....	4,993	586	39	9.0	20	.18	.49	94	44	
December.....	4,593	479	114	3.0	15	.15	.40	67	39	
Cal. Year 1949	427,143	676,611	43,500	3.0	1,850	.207	565	3,330	587	
January.... 1950	9,729	4,382	1,410	5.0	141	1.3	3.7	459	167	
February.....	20,491	9,683	2,700	6.0	345	3.0	8.1	420	175	
March.....	163,260	303,787	46,000	302	9,800	93	254	1,860	689	
April.....	46,958	22,331	2,370	152	744	6.8	19	345	176	
May.....	69,750	213,210	45,700	200	6,880	65	178	4,020	1,130	
June.....	113,300	493,103	68,400	246	16,400	151	412	5,700	1,610	
July.....	40,084	148,783	109,000	114	4,800	45	124	4,560	1,370	
August.....	10,637	4,729	836	37	153	1.4	3.9	365	165	
September.....	9,426	4,896	1,630	15	163	1.5	4.1	541	192	
Water Year 1950	500,623	1,208,856	109,000	3.0	3,310	.370	1,010	5,700	894	
October.....	9,993	2,491	202	32	80	.76	2.1	165	92	
November.....	4,820	718	63	7.0	24	.22	.60	97	55	
December.....	3,362	258	24	3.0	8.3	.08	.22	55	28	
Cal. Year 1950	501,810	1,208,371	109,000	3.0	3,310	.369	1,010	5,700	892	
January.... 1951	3,621	315	45	2.0	10	.10	.26	60	32	
February.....	37,512	45,666	10,600	2.0	1,630	14	38	981	451	
March.....	93,530	180,066	26,300	116	5,810	55	150	1,790	713	
April.....	245,540	279,680	46,600	2,590	9,320	86	233	1,140	422	
May.....	139,100	216,920	40,600	1,210	7,000	66	181	2,660	578	
June.....	151,250	388,551	37,600	891	13,000	119	324	3,040	951	

05454500 IOWA RIVER AT ICWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
July.....	142,470	158,333	36,900	943	6,400	61	166	1,800	516	
August.....	51,000	49,969	8,900	225	1,610	15	42	856	363	
September.....	46,055	17,880	3,680	93	596	5.5	15	446	144	
Water Year 1951	928,253	1,380,907	46,600	2.0	3,780	422	1,150	3,040	551	
October.....	50,934	33,911	4,360	89	1,090	10	28	548	247	
November.....	50,950	28,258	6,560	79	942	8.6	24	774	205	
December.....	30,710	2,617	275	17	84	.80	2.2	68	32	
Cal. Year 1951	1,042,672	1,442,226	46,600	2.0	3,950	441	1,200	3,040	512	
January.....	54,235	32,929	8,820	12	1,060	10	27	730	225	
February.....	65,790	23,145	3,870	267	798	7.1	19	556	130	
March.....	168,890	265,761	41,500	153	8,570	81	222	1,830	583	
April.....	118,380	87,590	6,650	1,020	2,920	27	73	526	274	
May.....	79,490	194,412	55,900	220	6,270	59	162	4,170	906	
June.....	72,280	209,949	38,500	916	7,000	64	175	4,310	1,080	
July.....	60,445	76,027	5,850	232	2,450	23	63	814	466	
August.....	18,243	5,602	446	86	181	1.7	4.7	150	114	
September.....	7,831	2,263	129	29	75	.69	1.9	133	107	
Water Year 1952	778,178	962,464	55,900	12	2,630	294	803	4,310	458	
October.....	5,115	1,126	.....	.....	36	.34	.94	.....	82
November.....	9,718	5,152	1,800	.....	172	1.6	4.3	482	196
December.....	9,475	1,022	220	.....	33	.31	.85	100	40
Cal. Year 1952	669,892	904,978	55,900	.....	2,470	277	755	4,310	500
January.....	11,566	1,951	390	.....	63	.60	1.6	180	63
February.....	76,338	188,876	70,400	.....	6,750	58	158	2,990	916
March.....	72,200	127,464	13,100	.....	4,110	39	106	1,570	654
April.....	64,390	58,851	9,770	.....	1,960	18	49	1,000	339
May.....	80,330	322,321	80,200	476	10,400	99	269	5,500	1,490	
June.....	67,290	525,109	83,000	496	17,500	161	438	7,800	2,890	
July.....	40,970	90,332	14,100	.....	2,910	28	75	2,120	817
August.....	17,695	6,359	.....	.....	205	1.9	5.3	.....	133
September.....	5,039	1,425	.....	.....	48	.44	1.2	.....	105
Water Year 1953	460,126	1,329,988	83,000	.....	3,640	407	1,110	7,800	1,070
October.....	3,707	848	52	.....	27	.26	.71	143	85
November.....	3,817	565	.....	.....	19	.17	.47	.....	55
December.....	3,775	269	.....	.....	8.7	.08	.22	.....	26

05454500 IOWA RIVER AT ICWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
Cal. Year 1953	447,117	1,324,370	83,000	3,630	405	1,110	7,800	1,100			
January... 1954	2,444	154		6.3	.06			.16		29	
February.....	4,755	220		7.0	.07			.18		17	
March.....	7,272	868		28	.27			.72		44	
April.....	13,966	10,502	1,620	350	3.2	8.8	1,070			279	
May.....	34,587	64,565	9,950	2,080	20	54	1,610			691	
June.....	112,220	503,620	31,700	16,800	154	420	3,270			1,660	
July.....	59,375	88,432	21,300	2,850	27	74	1,080			552	
August.....	32,926	84,542	22,900	2,730	26	71	2,170			951	
September.....	53,303	61,942	13,100	2,060	19	52	1,030			430	
Water Year 1954	332,147	816,567	31,700	2,240	250	682	3,270			911	
October.....	68,570	99,808	21,900	3,220	31	83	2,230			539	
November.....	29,409	5,402		180	1.7	4.5				68	
December.....	18,388	2,324		75	.71	1.9				47	
Cal. Year 1954	437,215	922,419	31,700	2,530	282	770	3,270			781	
January... 1955	16,356	1,120	408	36	.34		144			25	
February.....	34,326	30,765	5,870	1,100	9.4	26	659			332	
March.....	48,540	46,027	5,750	1,480	14	38	1,290			351	
April.....	45,900	146,746	48,400	4,890	45	122	4,320			1,180	
May.....	35,634	19,771	2,160	638	6.0	17	496			205	
June.....	17,147	5,190		173	1.6	4.3				112	
July.....	23,207	21,626	4,110	698	6.6	18	789			345	
August.....	7,518	1,967		63	.60	1.6				97	
September.....	4,136	740		25	.23	.62				66	
Water Year 1955	349,131	381,486	48,400	1,050	117	318	4,320			405	
October.....	5,864	1,064	940	34	.33	.89	130			67	
November.....	3,256	490		16	.15	.41				56	
December.....	2,001	352		11	.11	.29				65	
Cal. Year 1955	243,885	275,858	48,400	756	84	230	4,320			419	
January... 1956	1,855	288		9.3	.09	.24				58	
February.....	4,404	1,615	550	55	.49	1.3	240			136	
March.....	10,288	1,019	111	33	.31	.85	83			37	
April.....	12,062	7,133	1,330	238	2.2	6.0	700			219	
May.....	16,094	18,918	6,750	610	5.8	16	1,420			435	
June.....	6,488	2,200	231	73	.67	1.8	225			126	
July.....	7,581	9,759	3,300	315	3.0	8.1	753			477	
August.....	21,101	38,038	7,480	1,230	12	32	1,230			668	

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)		
			Maximum	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
				Minimum	Maximum					
September.....	9,784	5,831	1,240	13	194	1.8	4.9	505	221	
Water Year 1956	100,778	86,707	7,480	.....	237	27	72	1,420	319
October.....	3,599	681	47	9.0	22	.21	.57	100	70	
November.....	3,418	644	41	5.0	21	.20	.54	114	70	
December.....	3,518	361	24	.....	12	.11	.30	56	38
Cal. Year 1956	100,192	86,487	7,480	5.0	236	26	72	1,420	320	
January.....1957	7,137	2,863	558	6.0	92	.88	2.4	271	149	
February.....	15,183	4,088	469	10	146	1.2	3.4	255	100	
March.....	11,299	1,635	88	25	53	.50	1.4	91	54	
April.....	10,216	2,958	175	37	99	.90	2.5	158	107	
May.....	21,672	13,366	2,120	40	431	4.1	11	605	228	
June.....	72,280	140,078	19,800	649	4,670	43	117	2,120	718	
July.....	42,231	70,109	19,600	199	2,260	21	59	2,480	615	
August.....	19,379	12,918	2,500	36	417	3.9	11	545	247	
September.....	11,338	4,297	924	19	143	1.3	3.6	372	140	
Water Year 1957	221,270	253,998	19,800	5.0	696	78	212	2,480	425	
October.....	6,485	1,497	92	12	48	.46	1.2	147	86	
November.....	9,361	748	68	6.0	25	.23	.62	62	30	
December.....	12,505	956	126	5.0	31	.29	.80	80	28	
Cal. Year 1957	239,086	255,513	19,800	5.0	700	78	213	2,480	396	
January.....1958	9,557	286	16	2.0	9.2	.09	.24	27	11	
February.....	12,790	9,392	3,360	2.0	335	2.9	7.8	563	272	
March.....	27,753	11,745	3,830	.....	379	3.6	9.8	560	157
April.....	25,327	7,355	563	66	245	2.2	6.1	149	108	
May.....	13,222	4,154	250	37	134	1.3	3.5	248	116	
June.....	52,855	95,785	18,700	329	3,190	29	80	2,460	671	
July.....	73,485	93,984	20,800	438	3,030	29	78	1,450	474	
August.....	47,695	27,805	2,820	321	897	8.5	23	440	216	
September.....	64,347	52,749	10,100	96	1,760	16	44	890	304	
Water Year 1958	355,382	306,456	18,700	.....	840	94	256	2,460	319
October.....	21,873	12,665	5,200	.....	409	3.9	11	900	214
November.....	17,694	6,118	920	32	204	1.9	5.1	250	128	
December.....	9,702	787	76	.....	25	.24	.66	80	30
Cal. Year 1958	376,300	322,825	18,700	.....	884	99	269	2,460	318

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January...1959	8,059	362			12			.11		.30	17
February.....	26,851	13,076	4,580	3.0	467		4.0	11		375	180
March.....	134,750	151,396	13,000	931	4,880		46	126		700	416
April.....	182,680	176,070	19,000	404	5,870		54	147		1,920	357
May.....	112,200	134,175	17,300	782	4,330		41	112		1,520	443
June.....	67,002	31,351		184	1,050		9.6	26		400	173
July.....	47,857	53,502	14,400	44	1,730		16	45		1,300	414
August.....	5,174	1,128	123	12	36		.34	.94		165	81
September.....	5,019	1,038	133		35		.32	.87		110	77
Water Year 1959	638,901	581,668	19,000		1,590		178	486		1,920	337
October.....	20,092	3,604	561	18	116		1.1	3.0		155	66
November.....	41,313	9,485	3,460	19	316		2.9	7.9		370	85
December.....	33,675	6,990	1,760	19	225		2.1	5.8		360	77
Cal. Year 1959	684,712	582,177	19,000		1,600		178	486		1,920	315
January...1960	127,000	115,994	21,300	58	3,740		35	97		1,510	338
February.....	50,372	3,810	639	29	131		1.2	3.2		55	28
March.....	36,509	28,251	10,400	16	911		8.6	24		590	287
April.....	258,370	168,150	12,700	1,350	5,610		51	140		570	241
May.....	198,960	49,711	8,760	123	1,600		15	41		430	93
June.....	143,150	202,858	57,500	116	6,760		62	169		2,990	525
July.....	41,434	17,345	7,700	81	560		5.3	14		1,080	155
August.....	57,718	23,000	3,640	78	742		7.0	19		315	148
September.....	15,672	3,175	313	30	106		.97	2.7		110	75
Water Year 1960	1,024,265	632,373	57,500	16	1,730		193	528		2,990	229
October.....	20,720	5,128	1,930	29	165		1.6	4.3		400	92
November.....	32,886	7,894	2,760	25	263		2.4	6.6		470	89
December.....	12,530	958	55	16	31		.29	.80		49	28
Cal. Year 1960	995,321	626,274	57,500	16	1,710		191	523		2,990	233
January...1961	9,201	785	123	6.0	25		.24	.66		50	32
February.....	61,639	44,954	6,940	75	1,610		14	38		460	270
March.....	220,520	218,410	25,600	680	7,050		67	182		1,580	367
April.....	114,590	28,334	1,670	191	944		8.7	24		110	92
May.....	40,177	4,457	609	24	144		1.4	3.7		91	41
June.....	44,742	22,706	9,210	57	757		6.9	19		1,080	188
July.....	9,744	1,510	220	17	49		.46	1.3		115	57
August.....	36,310	13,390	1,380	26	432		4.1	11		675	137
September.....	30,882	7,725	1,520	54	258		2.4	6.4		300	93

05454500 IOWA RIVER AT ICWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
September	9,784	5,831	1,240	13	194	1.8	4.9	505	221		
Water Year 1956	100,778	86,707	7,480	237	237	27	72	1,420	319		
October	3,599	681	47	9.0	22	.21	.57	100	70		
November	3,418	644	41	5.0	21	.20	.54	114	70		
December	3,518	361	24		12	.11	.30	56	38		
Cal. Year 1956	100,192	86,487	7,480	5.0	236	26	72	1,420	320		
January	7,137	2,863	558	6.0	92	.88	2.4	271	149		
February	15,183	4,088	469	10	146	1.2	3.4	255	100		
March	11,299	1,635	88	25	53	.50	1.4	91	54		
April	10,216	2,958	175	37	99	.90	2.5	158	107		
May	21,672	13,366	2,120	40	431	4.1	11	605	228		
June	72,280	140,078	19,800	649	4,670	43	117	2,120	718		
July	42,231	70,109	19,600	199	2,260	21	59	2,480	615		
August	19,379	12,918	2,500	36	417	3.9	11	545	247		
September	11,338	4,297	924	19	143	1.3	3.6	372	140		
Water Year 1957	221,270	253,998	19,800	5.0	696	78	212	2,480	425		
October	6,485	1,497	92	12	48	.46	1.2	147	86		
November	9,361	748	68	6.0	25	.23	.62	62	30		
December	12,505	956	126	5.0	31	.29	.80	80	28		
Cal. Year 1957	239,086	255,513	19,800	5.0	700	78	213	2,480	396		
January	9,557	286	16	2.0	9.2	.09	.24	27	11		
February	12,790	9,392	3,360	2.0	335	2.9	7.8	563	272		
March	27,753	11,745	3,830		379	3.6	9.8	560	157		
April	25,327	7,355	563	66	245	2.2	6.1	149	108		
May	13,222	4,154	250	37	134	1.3	3.5	248	116		
June	52,855	95,785	18,700	329	3,190	29	80	2,460	671		
July	73,485	93,984	10,800	438	3,030	29	78	1,450	474		
August	47,695	27,805	2,820	321	897	8.5	23	440	216		
September	64,347	52,749	10,100	96	1,760	16	44	890	304		
Water Year 1958	355,382	306,456	18,700		840	94	256	2,460	319		
October	21,873	12,665	5,200		409	3.9	11	900	214		
November	17,694	6,118	920	32	204	1.9	5.1	250	128		
December	9,702	787	76		25	.24	.66	80	30		
Cal. Year 1958	376,300	322,825	18,700		884	99	269	2,460	318		

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January...1959	8,059	362	.....	.....	12	.....	.....	.....	.....	.....	17
February.....	26,851	13,076	4,580	.....	467	.....	.....	.....	.....	.....	180
March.....	134,750	151,396	13,000	3.0	4,880	.....	.....	.....	.....	.....	416
April.....	182,680	176,070	19,000	404	5,870	.....	.....	.....	.....	.....	357
May.....	112,200	134,175	17,300	782	4,330	.....	.....	.....	.....	.....	443
June.....	67,002	31,351	.....	184	1,050	.....	.....	.....	.....	.....	173
July.....	47,857	53,502	14,400	44	1,730	.....	.....	.....	.....	.....	414
August.....	5,174	1,128	123	12	36	.....	.....	.....	.....	.....	81
September.....	5,019	1,038	133	.....	35	.....	.....	.....	.....	.....	77
Water Year 1959	638,901	581,668	19,000	.....	1,590	.....	.....	.....	.....	.....	337
October.....	20,092	3,604	561	18	116	.....	.....	.....	.....	.....	66
November.....	41,313	9,485	3,460	19	316	.....	.....	.....	.....	.....	85
December.....	33,675	6,990	1,760	19	225	.....	.....	.....	.....	.....	77
Cal. Year 1959	684,712	582,177	19,000	.....	1,600	.....	.....	.....	.....	.....	315
January...1960	127,000	115,994	21,300	58	3,740	.....	.....	.....	.....	.....	338
February.....	50,372	3,810	639	29	131	.....	.....	.....	.....	.....	28
March.....	36,509	28,251	10,400	16	911	.....	.....	.....	.....	.....	287
April.....	258,370	168,150	12,700	1,350	5,610	.....	.....	.....	.....	.....	241
May.....	198,960	45,711	8,760	123	1,600	.....	.....	.....	.....	.....	93
June.....	143,150	202,858	57,500	116	6,760	.....	.....	.....	.....	.....	525
July.....	41,434	17,345	7,700	81	560	.....	.....	.....	.....	.....	155
August.....	57,718	23,000	3,640	78	742	.....	.....	.....	.....	.....	148
September.....	15,672	3,175	313	30	106	.....	.....	.....	.....	.....	75
Water Year 1960	1,024,265	632,373	57,500	16	1,730	.....	.....	.....	.....	.....	229
October.....	20,720	5,128	1,930	29	165	.....	.....	.....	.....	.....	92
November.....	32,886	7,894	2,760	25	263	.....	.....	.....	.....	.....	89
December.....	12,530	958	55	16	31	.....	.....	.....	.....	.....	28
Cal. Year 1960	995,321	626,274	57,500	16	1,710	.....	.....	.....	.....	.....	233
January...1961	9,201	785	123	6.0	25	.....	.....	.....	.....	.....	32
February.....	61,639	44,954	6,940	75	1,610	.....	.....	.....	.....	.....	270
March.....	220,520	218,410	25,600	680	7,050	.....	.....	.....	.....	.....	367
April.....	114,590	28,334	1,670	191	944	.....	.....	.....	.....	.....	92
May.....	40,177	4,457	609	24	144	.....	.....	.....	.....	.....	41
June.....	44,742	22,706	9,210	57	757	.....	.....	.....	.....	.....	188
July.....	9,744	1,510	220	17	49	.....	.....	.....	.....	.....	57
August.....	36,310	13,390	1,380	26	432	.....	.....	.....	.....	.....	137
September.....	30,882	7,725	1,520	54	258	.....	.....	.....	.....	.....	93

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
March.....	14,771	3,518	270	15	113	1.1	2.9	140	88	
April.....	24,091	7,007	590	21	234	2.1	5.8	150	108	
May.....	43,131	15,990	860	260	516	4.9	13	190	137	
June.....	31,213	19,680	4,000	120	656	6.0	16	820	234	
July.....	42,028	16,060	1,800	56	518	4.9	13	240	142	
August.....	14,019	2,979	270	26	96	.91	2.5	240	79	
September.....	19,127	3,863	310	15	129	1.2	3.2	110	75	
Water Year 1964	231,379	72,617.90	4,000	.90	198	22	61	820	116	
October.....	6,621	627	33	12	20	.19	.52	77	35	
November.....	8,835	1,100	.....	.....	37	.34	.92	.....	46
December.....	13,015	422	28	4.0	14	.13	.35	54	12	
Cal. Year 1964	241,683	73,741	4,000	3.0	201	23	62	820	113	
January.....	39,756	18,913	5,000	2.0	610	5.8	16	440	176	
February.....	57,099	15,082	1,800	26	538	4.6	13	270	98	
March.....	105,030	65,020	4,800	610	2,100	20	54	890	229	
April.....	187,715	186,604	25,000	49	6,220	57	156	2,200	368	
May.....	154,683	96,495	19,000	32	3,110	30	81	990	231	
June.....	169,000	21,950	2,000	100	732	6.7	18	120	48	
July.....	82,494	48,320	6,100	120	1,560	15	40	1,100	217	
August.....	15,919	3,429	250	61	111	1.0	2.9	180	80	
September.....	79,541	71,030	20,000	110	2,370	22	59	1,000	331	
Water Year 1965	919,708	528,992	25,000	2.0	1,450	162	442	2,200	213	
October.....	111,390	18,223	1,600	98	588	5.6	15	140	61	
November.....	120,750	13,650	950	260	455	4.2	11	87	42	
December.....	118,020	18,642	1,100	94	601	5.7	16	99	59	
Cal. Year 1965	1,241,397	577,358	25,000	2.0	1,580	177	482	2,200	172	
January.....	49,988	9,358	700	30	302	2.9	7.8	250	69	
February.....	63,600	101,567	16,000	67	3,630	31	85	990	591	
March.....	74,000	34,416	4,500	69	1,110	11	29	400	172	
April.....	71,110	32,870	1,800	700	1,100	10	27	250	171	
May.....	84,900	125,100	35,000	300	4,040	38	104	4,700	546	
June.....	112,340	72,780	18,000	530	2,430	22	61	1,610	240	
July.....	126,030	32,170	7,700	440	1,040	9.8	27	650	95	
August.....	28,216	3,807	580	33	123	1.2	3.2	300	50	
September.....	7,855	796	71	6.0	27	.24	.66	60	38	
Water Year 1966	968,199	463,379	35,000	6.0	1,270	142	387	4,700	177	

05454500 IOWA RIVER AT ICWA CITY, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcs)		Tons per sq mi	Acres-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
October.....	4,549	432	29	8.0	14	.13	.36	65	35	
November.....	3,644	214	15	4.0	7.1	.07	.18	36	22	
December.....	12,669	371	120	3.0	12	.11	.31	61	11	
Cal. Year 1966	638,901	413,881	35,000	3.0	1,130	127	345	4,700	240	
January...1967	11,047	1,909	590	3.0	62	.58	1.6	220	64	
February.....	24,409	4,921	830	20	175	1.5	4.1	170	75	
March.....	23,851	24,269	8,920	35	783	7.4	20	900	377	
April.....	25,821	8,150	120	120	272	2.5	6.8	250	117	
May.....	13,996	2,083	180	26	67	.64	1.7	88	55	
June.....	82,550	86,777	31,000	59	2,890	27	72	3,070	389	
July.....	37,028	8,465	710	95	273	2.6	7.1	170	85	
August.....	26,750	9,917	1,260	47	320	3.0	8.3	300	137	
September.....	11,880	3,983	1,680	26	133	1.2	3.3	420	124	
Water Year 1967	278,194	151,491	31,000	3.0	415	46	126	3,070	202	
October.....	20,040	3,626	480	21	117	1.1	3.0	250	67	
November.....	26,438	6,346	2,730	13	212	1.9	5.3	330	89	
December.....	19,975	781	86	7.0	25	.24	.65	26	15	
Cal. Year 1967	323,785	161,227	31,000	3.0	442	49	135	3,070	184	
January...1968	10,206	415	86	4.0	13	.13	.35	40	15	
February.....	25,098	1,778	250	6.0	61	.54	1.5	58	26	
March.....	16,529	2,275	230	8.0	73	.70	1.9	140	51	
April.....	37,231	16,062	1,870	59	535	4.9	13	310	160	
May.....	23,655	5,323	550	42	172	1.6	4.4	150	83	
June.....	8,739	1,990	210	17	66	.61	1.7	260	84	
July.....	37,185	18,200	1,970	90	587	5.6	15	530	181	
August.....	30,906	13,068	2,360	33	422	4.0	11	300	157	
September.....	10,061	1,396	100	13	47	.43	1.2	83	51	
Water Year 1968	266,063	71,260	2,730	4.0	195	22	59	530	99	
October.....	15,742	2,251	435	11	73	.69	1.9	174	53	
November.....	16,261	1,191	92	19	40	.36	.99	50	27	
December.....	20,874	2,412	394	21	78	.74	2.0	150	43	
Cal. Year 1968	252,487	66,361	2,360	4.0	181	20	55	530	97	
January...1969	35,005	31,116	18,600	15	1,000	9.5	26	2,030	329	
February.....	32,395	56,330	761	11	111	.95	2.6	90	36	
March.....	117,755	137,754	8,410	44	1,820	17	47	650	177	
April.....	176,510	137,754	58,700	27	4,590	42	115	2,550	289	

05454500 IOWA RIVER AT ICWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
May.....	117,980	14,005	769	64	452	4.3	12	117	44
June.....	118,830	124,073	28,100	265	4,140	38	104	1,570	387
July.....	288,190	197,870	30,600	365	6,380	60	165	2,190	254
August.....	187,730	30,767	3,350	538	992	9.4	26	164	61
September.....	106,949	12,089	677	69	403	3.7	10	51	42
Water Year 1969	1,234,221	612,568	58,700	11	1,680	187	512	2,550	184
October.....	21,784	2,398	138	35	77	.73	2.0	62	41
November.....	25,679	1,524	133	31	51	.47	1.3	61	22
December.....	22,273	1,815	186	21	59	.55	1.5	71	30
Cal. Year 1969	1,251,080	612,851	58,700	11	1,680	187	512	2,550	181
January.....	12,820	1,916	106	26	62	.59	1.6	96	55
February.....	32,063	7,221	1,370	63	257	2.2	6.0	286	83
March.....	115,880	120,119	36,200	213	3,870	37	100	2,020	384
April.....	59,560	14,947	815	323	498	4.6	12	133	93
May.....	79,265	53,595	7,240	167	1,730	16	45	776	250
June.....	108,699	61,986	10,900	359	2,070	19	52	843	211
July.....	23,299	5,533	374	115	178	1.7	4.6	186	88
August.....	41,363	8,192	659	56	264	2.5	6.8	95	73
September.....	38,905	36,388	19,500	37	1,210	11	30	1,530	347
Water Year 1970	581,590	315,634	36,200	21	865	97	263	2,020	201
October.....	74,980	15,831	1,090	157	511	4.8	13	158	78
November.....	55,050	8,096	732	114	270	2.5	6.8	154	55
December.....	50,255	9,921	918	111	320	3.0	8.3	218	73
Cal. Year 1970	692,139	343,745	36,200	26	942	105	287	2,020	184
January.....	21,869	1,994	152	30	64	.61	1.7	84	34
February.....	80,577	80,048	10,700	32	2,860	24	67	741	368
March.....	247,630	155,420	17,200	1,330	5,010	48	130	665	232
April.....	83,350	33,130	2,090	353	1,100	10	28	333	147
May.....	38,796	11,080	899	105	357	3.4	9.2	197	106
June.....	44,149	19,280	2,510	231	643	5.9	16	569	162
July.....	47,644	19,466	3,030	120	628	6.0	16	297	151
August.....	11,175	1,839	136	20	59	.56	1.5	93	61
September.....	5,370	608	30	13	20	.19	.51	55	42
Water Year 1971	760,845	356,713	17,200	13	577	109	298	741	174
October.....	4,882	567	48	11	18	.17	.47	78	43
November.....	9,529	1,341.5	428	4.2	45	.41	1.1	286	52

05454500 IOWA RIVER AT ICWA CITY, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Lead (tons)	Daily loads (tcns)			Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
December.....	32,099	22,021	18,200	11	710	6.7	18	1,700	254
Cal. Year 1971	627,070	346,794.5	18,200	4.2	950	106	289	1,700	205
January....1972	12,719	838.2	112	7.7	27	2.26	.70	65	24
February.....	20,247	7,231	5,300	12	249	17	6.0	662	132
March.....	90,820	56,794	5,560	120	1,830	33	47	658	232
April.....	62,684	108,394	13,700	123	3,610	33	90	1,320	640
May.....	85,290	39,887	7,940	285	1,290	12	33	1,010	173
June.....	107,180	80,899	21,100	277	2,700	25	68	1,650	280
July.....	130,050	123,571	14,900	393	3,990	38	103	1,150	352
August.....	119,700	74,679	9,880	691	2,410	23	62	882	231
September.....	67,490	11,682	943	133	389	3.6	9.8	186	64
Water Year 1972	742,690	527,904.7	21,100	4.2	1,440	161	441	1,700	263
October.....	79,490	9,989	1,050	68	322	3.1	8.3	113	47
November.....	119,690	24,377	1,250	398	813	7.5	20	119	75
December.....	77,800	14,021	1,740	94	452	4.3	12	167	67
Cal. Year 1972	973,160	552,362.2	21,100	7.7	1,510	169	461	1,650	210
January....1973	166,820	55,239	4,630	442	1,780	17	46	249	123
February.....	162,100	67,590	3,600	457	2,410	21	56	356	154
March.....	131,940	76,321	8,510	158	2,460	23	64	526	214
April.....	199,750	115,668	20,300	664	3,860	35	97	1,580	214
May.....	267,960	67,613	4,240	685	2,180	21	56	202	94
June.....	189,200	50,546	11,600	561	1,680	15	42	580	99
July.....	166,710	31,867	4,040	277	1,030	9.7	27	536	71
August.....	30,287	5,257	702	71	170	1.6	4.4	102	64
September.....	22,912	6,031	2,260	18	201	1.8	5.0	233	98
Water Year 1973	1,614,659	524,519	20,300	18	1,440	160	438	1,580	120

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis	
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters			
Apr. 9, 1954	585		1060	1670	95	100	SPWC	
June 2,	3280	16.5	3120	27600	44	58	100	SPWC
June 5,	4100		3120	34500	49	77	100	SPWC
June 15,	3820		1900	19600	48	73	99	SPWC
June 23,	4900		1230	16300	38	63	96	SPWC
July 1,	5990		879	14200	35	56	94	SPWC
July 2,	7180		1050	20400	35	60	98	100
Aug. 31,	4500		1280	15600	38	61	99	SPWC
Oct. 11, 1954	2290	18.0	726	4490	55	86	99	SPWC
Feb. 21, 1955	*3200	1.5	494		57	76	98	SPWC
Apr. 20,	1690	18.0	1080	4930	62	96	99	SPWC
Apr. 25,	4000	12.0	4840	52300	44	81	100	SPWC
May 13,	1650	16.5	327	1460	70	92	100	SPWC
July 12,	1130	23.5	626	1910	90	98	99	SPWC
May 11, 1956	485	19.5	351	460	91	97	100	SPWC
May 16,	1770	17.0	1600	7650	82	99	100	SPWC
May 16,	1770	17.0	1600	7650	66	97	100	SPN
July 20,	711	19.5	729	1400	93	95	96	SPWC
July 31,	2050	24.5	739	4090	60	89	99	SPWC
May 14, 1957	765	16.5	398	822	96	99	100	SPWC
May 24,	1340	19.0	700	2530	86	96	100	SPWC
May 24,	1340	19.0	700	2530	83	93	100	SPN
June 3,	1930	22.0	928	4840	81	90	100	SPWC
June 3,	1930	22.0	928	4840	80	92	100	SPN
June 19,	2130	24.5	1440	8280	68	94	100	SPWC
June 19,	2130	24.5	1440	8280	56	88	99	SPN
June 24,	4600	22.0	618	7680	49	72	99	SPWC
Feb. 26, 1958	1930	1.5	366	1910	61	69	99	SPWC
June 10,	1400	19.0	909	3440	75	84	96	SPWC
June 10,	1400	19.0	909	3440	40	82	98	SPN
June 13,	2930	18.0	3490	27600	67	92	100	SPWC
July 16,	3370	23.5	989	9000	76	86	100	SPWC
Mar. 20, 1959	7060	4.5	620	11800	44	65	92	SPWC
							95	100

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis		
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0		64.0	
				Percent finer than indicated size, in millimeters												
Jan. 18, 1960	5590		5	0	4	19	72	79	84	90	100					S
Jan. 25,	6590		5	0	1	11	69	77	81	86	100					S
Apr. 7,	9580		5	0	1	25	84	94	98	99	100					S
Cct. 1, 1965	4300		3	0	2	15	70	87	90	93	97	100				SV
Feb. 25, 1971	8580	1.0	4		1	9	68	96	99	99	100					S
Mar. 29, 1972	1950	1.5	3		15	62	62	77	79	81	86					SV
May 24,	1590	24.0	3		14	81	81	98	99							SV
Aug. 2,	4530	25.5	4	2	9	44	44	62	64	69	73					SV
Nov. 16, 1972	4140	3.0	3	1	6	26	26	45	47	54	83					SV
Mar. 28, 1973	3140	7.5	4	1	12	61	61	90	94	98	100					SV
May 14,	10200	15.0	3	11	11	79	79	95	98	99	100					SV
June 15,	6180	24.5	3	1	8	58	58	86	100							V
July 27,	5130	24.5	3	4	4	37	37	57	69	78	96					SV
Sept. 10,	673	23.0	3	1	6	44	44	83	91	100						SV

ICWA RIVER BASIN
05455000 RALSTON CREEK AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'50", long 91°30'48", in SE1/4 NW1/4 sec.11, T.79 N., R.6 W., Johnson County, at gaging station at bridge on Rochester Avenue, Iowa City, and 2.2 mi (3.5 km) upstream from mouth.

DRAINAGE AREA.--3.01 mi² (7.80 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--21 years (1952-73), 4,360 tons (3,960 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 8,790 mg/l May 23, 1966; minimum daily, no flow on many days in 1953-59, 1963-68, 1971, 1972.

Sediment discharge: Maximum daily, 3,800 tons (3,450 tonnes) May 23, 1966; minimum daily, 0 ton (0.00 tonne) on many days in 1953-59, 1963-68, 1971, 1972.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1952a	1251	4,850	*	June 14	June 14	1,430	<0.05	June 14	many days
1953	1291	4,970	no flow	many days	May 24	1,980	0	May 24	many days
1954	1351	2,490	no flow	many days	May 2	226	0	Apr. 30	many days
1955	1401	4,590	no flow	many days	Apr. 23	1,180	0	Apr. 23	many days
1956	1451	3,630	no flow	many days	July 6	2,300	0	July 18	many days
1957	1521	8,310	no flow	many days	May 21	186	0	May 21	many days
1958	1572	7,140	no flow	many days	July 14	1,380	0	July 14	many days
1959	1643	6,280	no flow	Oct. 1-6; Sept. 12-18	May 19	2,110	0	May 19	Cct. 1-6; Sept. 12-18
1960	1743	8,320	*	Jan. 12	Jan. 4	3,080	<.05	June 4	many days
1961	1883	6,020	14	Apr. 11	Mar. 4	1,420	<.05	Mar. 4	many days
1962	1943	4,930	8	Feb. 2, Aug. 8, 19	May 29	3,080	<.05	July 14	many days
1963	1949	2,200	no flow	many days	July 4	160	0	July 19	many days
1964	1956	3,800	no flow	many days	June 19	240	0	June 22	many days
1965	1963	7,900	no flow	many days	Apr. 24	3,100	0	Sept. 21	many days

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1966	1993	8,790	no flow	Sept. 2-30	3,800	0	May 23	0	Sept. 2-30
1967	2013	3,710	no flow	Oct. 1-11	3,070	0	June 7	0	Oct. 1-11
1968	2094	2,310	no flow	Aug. 25-30	220	0	May 26	0	Aug. 25-30
1969	2144	1,400	7	Dec. 30	689	0	July 8	0	Oct. 3
1970	2154	3,600	3	Mar. 14	550	.01	June 20	.01	Jan. 1-3, 21, 22, Mar. 14, Aug. 29, 30, Sept. 4
1971	2164	1,900	no flow	several days	212	0	July 10	0	many days
1972	+	2,340	3	Apr. 27	2,840	0	July 17	0	Oct. 1, 15, 18
1973	+	4,160	3	Feb. 8	1,500	.01	Apr. 20	.01	Oct. 10, 13-15, Feb. 7-11

a April to September 1952
+ Water Resources Data for Iowa, Part 2, Water Quality Records
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
April.....1952	69.8	24.4	8.8	.10	.81	8.1	.02	381	129
May.....	88.02	1,436.5	1,220	.10	46	477	1.2	3,040	6,040
June.....	72.26	1,990.1	1,430	.10	66	661	1.7	4,850	10,200
July.....	14.27	38	22	t	1.2	13	.03	1,020	986
August.....	11.03	71.9	55	t	2.3	24	.06	1,200	2,410
September.....	1.45	.2	.10	t	.01	.07	0	206	51
October.....	.95	.2	.....	t	.01	.07	0	.....	78
November.....	65.62	1,252.4	1,080	t	42	416	1.0	3,750	7,070
December.....	32.38	35.1	19	t	1.1	12	.03	350	401
January.....1953	18.85	11.4	6.4	t	.37	3.8	.01	300	224
February.....	234.78	3,523.2	1,560	t	126	1,170	2.9	2,900	5,560

05455000 RALSTON CREEK AT IOWA CITY, IOWA --CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment									
		Load (tons)		Daily loads (tons)		Tons per sq mi		Acre-feet		Concentration (mg/l)	
		Maximum	Minimum	Maximum	Mean	Maximum	Mean	Maximum daily	Weighted mean		
March.....	105.67	1,176.6	.....	38	391	.98	3,920	4,120		
April.....	71.04	281.5	.....	9.4	94	.23	3,800	1,470		
May.....	88.07	2,043.8	.....	66	679	1.7	4,970	8,600		
June.....	24.04	431.2	t	14	143	.36	2,120	6,640			
July.....	12.04	191.8	t	6.2	64	.16	2,480	5,900			
August.....	.79	.1	.....	0	.03	0	.....	47		
September.....	0	0	0	0	0	0	0	0			
Water Year 1953	654.23	8,947.30	0	25	2,970	7.5	4,970	5,070			
October.....	0	0	0	0	0	0	0	0			
November.....	.12	t	t	0	0	0	.....	0		
December.....	.62	t	t	0	0	0	.....	0		
Cal. Year 1953	556.02	7,659.60	0	21	2,540	6.4	4,970	5,100			
January.....1954	0	0	0	0	0	0	0	0			
February.....	3	.1	.....	0	.03	0	.....	12		
March.....	5.57	3.8	2.8	11	105	.26	630	253			
April.....	15.85	315.9	226	1.9	20	.05	2,210	7,380			
May.....	10.82	60	52	.67	6.7	.02	2,490	2,050			
June.....	5.79	20.1	11	.49	5.0	.01	862	1,290			
July.....	1.47	15.2	15	6.6	68	.17	1,090	3,830			
August.....	15.23	205.4	145	.63	6.3	.02	952	5,000			
September.....	2.4	19	19	.....	.....	.....	.....	2,930		
Water Year 1954	60.87	639.50	226	1.8	212	.53	2,490	3,890			
October.....	22.41	236.7	219	7.6	79	.20	2,460	3,910			
November.....	.42	.1	.....	0	.03	0	.....	88		
December.....	1.09	.9	.80	.03	.30	0	.....	306		
Cal. Year 1954	84.05	877.20	226	2.4	291	.73	2,490	3,870			
January.....1955	14.79	36.6	36	1.2	12	.03	746	917			
February.....	156.16	262.9	103	9.4	87	.22	760	624			
March.....	16.60	20.5	12	.66	6.8	.02	1,500	457			
April.....	59.84	1,744.1	1,180	58	579	1.5	4,590	10,800			
May.....	20.81	49.9	42	1.6	17	.04	838	888			
June.....	1.80	1	.80	.03	.33	0	307	206			
July.....	1.70	30	30	.97	10.0	.03	1,080	6,540			
August.....	1.48	9.2	8.8	.30	3.1	.01	577	2,300			
September.....	0	0	0	0	0	0	0	0			
Water Year 1955	297.10	2,391.90	1,180	6.6	795	2.0	4,590	2,980			

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment											
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)						
			Maximum	Minimum				Maximum daily	Weighted mean					
October.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
November.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cal. Year 1955	273.18	2,154.2	1,180	0	5.9	716	1.8	4,590	2,920					
January....1956	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February.....	17.52	25.5	22	0	.88	8.5	.02	550	539					
March.....	.18	.1	.10	0	0	.03	0	216	206					
April.....	.30	.1	.10	0	0	.03	0	148	123					
May.....	1.68	20.7	20	0	.67	6.9	.02	1,760	4,560					
June.....	0	0	0	0	0	0	0	0	0					
July.....	124.7	3,677.7	2,300	0	119	1,220	3.1	3,630	10,900					
August.....	114.39	2,637.9	1,320	0	85	876	2.2	2,510	8,540					
September.....	1.73	5.0	5.0	0	.20	2.0	0	.....	1,260					
Water Year 1956	260.50	6,367.90	2,300	0	17	2,120	5.3	3,630	9,050					
October.....	0	0	0	0	0	0	0	0	0					
November.....	.75	4.3	4.2	0	.14	1.4	0	320	2,120					
December.....	0	0	0	0	0	0	0	0	0					
Cal. Year 1956	261.25	6,372.20	2,300	0	17	2,120	5.3	3,630	9,030					
January....1957	8.21	40.1	40	0	1.3	13	.03	846	1,810					
February.....	5.74	19.1	17	0	.68	6.3	.02	420	1,230					
March.....	1.22	.3	.10	0	.01	.10	0	133	91					
April.....	3.59	11.9	11	0	.40	4.0	.01	2,700	1,230					
May.....	5	202.7	186	0	6.5	67	.17	8,310	15,000					
June.....	.46	.2	.10	0	.01	.07	0	180	161					
July.....	0	0	0	0	0	0	0	0	0					
August.....	3.91	48	48	0	1.5	16	.04	1,170	4,550					
September.....	.34	3.4	3.4	0	.11	1.1	0	950	3,700					
Water Year 1957	29.22	330.00	186	0	.90	110	.28	8,310	4,180					
October.....	1.02	7	6.5	0	.23	2.3	.01	750	2,540					
November.....	3.26	16.5	16	0	.55	5.5	.01	1,400	1,870					
December.....	6.29	34.8	34	0	1.1	12	.03	1,100	2,050					
Cal. Year 1957	39.04	384.00	186	0	1.1	128	.32	8,310	3,640					
January....1958	0	0	0	0	0	0	0	0	0					
February.....	43.48	268.9	234	0	9.6	89	.22	1,420	2,290					
March.....	3.89	.2	.10	0	.01	.07	0	58	19					
April.....	1.89	.2	.10	0	.01	.07	0	110	39					

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)		
			Maximum	Minimum	Daily loads (tons)	Mean	Tons per sq mi	Acre-foot	Maximum	Weighted
									daily	mean
May.....	6.12	303.3	190	0	0	9.8	101	.25	6,600	18,400
June.....	28.45	1,439.5	856	0	0	48	478	1.2	6,290	18,700
July.....	51.59	1,661.9	1,380	0	0	54	552	1.4	7,140	11,900
August.....	8.38	60.8	46	0	0	2.0	20	.05	1,500	2,690
September.....	23.58	248.7	219	0	0	8.3	83	.21	1,930	3,910
Water Year 1958	177.95	4,041.80	1,380	0	0	11	1,340	3.4	7,140	8,410
October.....	54.34	755.5	473	0	0	24	251	.63	825	5,150
November.....	6.83	22	20	t	t	.73	7.3	.02	420	1,190
December.....	.95	.2	t	t	t	.01	.07	0	77	78
Cal. Year 1958	229.50	4,761.20	1,380	0	0	13	1,580	4.0	7,140	7,680
January.....1959	1.05	.1	t	t	t	0	.03	0	120	35
February.....	293.18	173.4	65	t	t	6.2	58	.14	700	219
March.....	212.49	710.5	584	t	t	23	236	.59	2,300	1,240
April.....	120.05	1,931	1,190	t	t	64	642	1.6	4,710	5,960
May.....	139.79	3,961.7	2,110	.10	.10	128	1,320	3.3	6,280	10,500
June.....	24.79	87	40	t	t	2.9	29	.07	750	1,300
July.....	31.12	531.6	311	t	t	17	177	.44	2,100	6,330
August.....	30.58	456.2	220	t	t	15	152	.38	1,900	5,530
September.....	5.44	45.8	24	0	0	1.5	15	.04	280	3,120
Water Year 1959	920.61	8,675.00	2,110	0	0	24	2,880	7.2	6,280	3,490
October.....	66.76	342	198	t	t	11	114	.29	1,010	1,900
November.....	44.29	35.5	24	t	t	1.2	12	.03	.....	297
December.....	69.68	294.9	273	t	t	9.5	98	.25	2,570	1,570
Cal. Year 1959	1,039.22	8,569.70	2,110	0	0	23	2,850	7.2	6,280	3,050
January.....1960	165.04	2,167.9	1,980	.10	.10	70	720	1.8	8,320	4,870
February.....	35.24	5.8	1.8	t	t	.20	1.9	0	325	61
March.....	138.18	584.2	459	t	t	19	194	.49	3,400	1,570
April.....	166.9	1,171.9	840	.20	.20	39	389	.98	3,800	2,600
May.....	139.5	443.9	367	.10	.10	14	147	.37	1,710	1,180
June.....	177.1	4,166.1	3,080	.10	.10	139	1,380	3.5	7,200	8,710
July.....	101.55	1,389.9	887	.10	.10	45	462	1.2	2,590	5,070
August.....	7.81	.9	.10	t	t	.03	.30	0	70	43
September.....	8.84	14.9	14	t	t	.50	5.0	.01	700	624
Water Year 1960	1,120.89	10,617.90	3,080	t	t	29	3,530	8.9	8,320	3,510
October.....	49.8	561.4	553	t	t	18	187	.47	2,980	4,180
November.....	90.5	1,257.7	1,240	t	t	42	418	1.0	2,870	5,150

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acres	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
December.....	15.3	2.8	.50	t	.09	.93	0	125	68
Cal. Year 1960	1,095.76	11,767.40	3,080	t	32	3,910	9.8	8,320	3,980
January....1961	8	1.5	.10	t	.05	.50	0	110	69
February.....	59.2	428.2	349	t	15	142	.36	1,880	2,680
March.....	262.9	3,613.5	1,420	.10	117	1,200	3.0	6,020	5,090
April.....	51.4	6.5	.70	.10	.22	2.2	.01	120	47
May.....	26.5	29.9	24	t	.96	9.9	.02	1,320	418
June.....	25.8	154.8	148	t	5.2	51	.13	2,110	2,220
July.....	40.4	1,286.4	1,080	t	41	427	1.1	3,260	11,800
August.....	54.2	516.3	265	t	17	172	.43	2,180	3,530
September.....	122.1	678.3	440	t	23	225	.57	2,350	2,060
Water Year 1961	806.10	8,537.30	1,420	t	23	2,840	7.1	6,020	3,920
October.....	57.2	41.2	22	t	1.3	14	.03	535	267
November.....	337.8	1,416.1	612	.20	47	470	1.2	2,930	1,550
December.....	51.8	4.8	.40	t	.15	1.6	0	49	34
Cal. Year 1961	1,097.30	8,177.50	1,420	t	22	2,720	6.8	6,020	2,760
January....1962	41	3.8	.40	t	.12	1.3	0	64	34
February.....	59.5	14.9	4.6	t	.53	5.0	.01	220	93
March.....	442.2	2,426.1	1,300	t	78	806	2.0	3,490	2,030
April.....	104.9	157.2	141	.10	5.2	52	.13	2,270	555
May.....	119.9	2,340.5	1,160	t	76	778	2.0	4,930	7,230
June.....	53.9	43.8	35	t	1.5	15	.04	790	301
July.....	243.3	3,640.9	3,080	t	117	1,210	3.0	3,530	5,540
August.....	26.1	64.1	62	t	2.1	21	.05	2,940	910
September.....	9.7	1.4	.20	t	.05	.47	0	130	54
Water Year 1962	1,547.30	10,154.80	3,080	t	28	3,370	8.5	4,930	2,430
October.....	20.3	6.9	4.0	t	.22	2.3	.01	550	126
November.....	12.1	.7	.10	t	.02	.23	0	63	21
December.....	8	.6	t	t	.02	.20	0	71	28
Cal. Year 1962	1,140.90	8,700.90	3,080	t	24	2,890	7.3	4,930	2,820
January....1963	12.9	1.1	.10	t	.04	.37	0	79	32
February.....	24.3	2	.60	t	0	.66	0	85	31
March.....	128.1	133.3	100	t	4.3	44	.11	940	385
April.....	27.3	26.3	14	t	8.7	8.7	.02	790	357
May.....	46.7	75.5	60	t	2.4	25	.06	1,400	599
June.....	3	.5	t	0	.02	.17	0	87	62

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Minimum	Maximum			Maximum daily	Weighted mean
			Maximum	Minimum							
July.....	33	215.4	160	t	6.9	72	.18	2,200	2,420	0	
August.....	5.7	2.4	.50	0	.08	.80	0	720	156	0	
September.....	1.3	1.2	1.0	0	.04	.40	0	720	342	0	
Water Year 1963	322.70	465.90	160	0	1.3	155	.39	2,200	535	0	
October.....	0	0	0	0	0	0	0	0	0	0	
November.....	6.6	23.8	23	0	.79	7.9	.02	1,200	1,340	0	
December.....	1	.2	t	0	.01	.07	0	110	74	0	
Cal. Year 1963	289.90	481.70	160	0	1.3	160	.40	2,200	615	0	
January.....1964	2	.3	.10	0	.01	.10	0	0	56	0	
February.....	5.5	.6	.20	0	.02	.20	0	0	40	0	
March.....	19.4	2.6	.40	t	.08	.86	0	150	50	0	
April.....	46.4	42.7	16	t	1.4	14	.04	890	341	0	
May.....	38	17.4	6.0	t	.56	5.8	.01	520	170	0	
June.....	50.1	479.6	240	t	16	159	.40	3,800	3,550	0	
July.....	8.6	16.1	12	0	.52	5.3	.01	1,800	693	0	
August.....	3.1	6.9	4.0	0	.22	2.3	.01	810	824	0	
September.....	1.4	6.1	3.0	0	.20	2.0	.01	690	1,610	0	
Water Year 1964	182.10	596.30	240	0	1.6	198	.50	3,800	1,210	0	
October.....	0	0	0	0	0	0	0	0	0	0	
November.....	3.42	7.6	7.4	0	.25	2.5	.01	600	823	0	
December.....	1.52	.3	.10	0	.01	.10	0	100	73	0	
Cal. Year 1964	179.44	580.20	240	0	1.6	193	.48	3,800	1,200	0	
January.....1965	44.13	38.4	23	t	1.2	13	.03	720	322	0	
February.....	59.87	43.6	14	t	1.6	14	.04	800	270	0	
March.....	68.49	145	30	t	4.7	48	.12	1,600	784	0	
April.....	152.15	2,352.3	2,000	t	78	781	2.0	7,900	5,730	0	
May.....	98.77	1,363.2	550	t	44	453	1.1	4,200	5,110	0	
June.....	51.45	130.3	89	t	4.3	43	.11	2,400	938	0	
July.....	8.84	55.7	50	t	1.8	19	.05	2,400	2,330	0	
August.....	4.89	16.7	7.8	t	.54	5.5	.01	1,200	1,260	0	
September.....	254.17	4,099.4	3,100	t	137	1,360	3.4	4,000	5,970	0	
Water Year 1965	747.70	8,252.50	3,100	0	23	2,740	6.9	7,900	4,090	0	
October.....	27.46	22.1	17	t	.71	7.3	.02	680	298	0	
November.....	21.3	6.1	2.5	t	.20	2.0	.01	430	106	0	
December.....	59.62	23.4	8.6	t	.75	7.8	.02	440	145	0	

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment										
			Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)						
			Maximum	Minimum			Mean	Maximum daily	Weighted mean				
Cal. Year 1965	851.14	8,296.20	3,100	t	23	2,760	6.9	7,900	3,610				
January.....1966	41.71	10.7	4.5	.10	.35	3.6	.01	190	95				
February.....	88.72	90	70	t	3.0	30	.08	1,000	376				
March.....	64.83	55.7	15	t	1.8	19	.05	2,000	318				
April.....	70.24	17	5.5	t	.57	5.6	.01	520	90				
May.....	144.1	3,936	3,800	.10	127	1,310	3.3	8,790	10,100				
June.....	185.9	750.5	630	.10	25	249	.63	1,800	1,500				
July.....	50.75	69.4	15	.10	2.2	23	.06	1,600	506				
August.....	4.64	3.5	1.3	t	.11	1.2	0	670	279				
September.....	.01	0	0	0	0	0	0	89	0				
Water Year 1966	759.28	4,984.40	3,800	0	14	1,660	4.2	8,790	2,430				
October.....	4.9	8.7	3.9	0	.28	2.9	.01	560	658				
November.....	7.3	10.6	9.4	t	.35	3.5	.01	670	538				
December.....	4.5	.9	.10	t	.03	.30	0	510	74				
Cal. Year 1966	667.60	4,953.00	3,800	0	14	1,650	4.1	8,790	2,750				
January.....1967	16.9	23.9	12	t	.77	7.9	.02	1,100	524				
February.....	6	1.3	.40	t	.05	.43	0	300	80				
March.....	56.51	86.9	39	t	2.8	29	.07	2,110	570				
April.....	78.59	24.4	5.8	t	.81	8.1	.02	350	115				
May.....	19.06	5.3	.90	t	.17	1.8	0	260	103				
June.....	187.37	3,292.5	3,070	t	110	1,090	2.7	3,710	6,510				
July.....	9.83	22.8	11	t	.74	7.6	.02	1,310	859				
August.....	26.12	238.8	180	t	7.7	79	.20	2,210	3,390				
September.....	14.36	64.4	37	t	2.1	21	.05	2,010	1,660				
Water Year 1967	431.44	3,780.50	3,070	0	10	1,260	3.2	3,710	3,250				
October.....	75.94	184.3	62	t	5.9	61	.15	1,590	899				
November.....	96.19	81.9	63	.10	2.7	27	.07	1,160	315				
December.....	27.09	4.5	.30	t	.15	1.5	0	150	62				
Cal. Year 1967	613.96	4,031.00	3,070	t	11	1,340	3.4	3,710	2,430				
January.....1968	34.56	5.7	.80	t	.18	1.9	0	160	61				
February.....	22.84	1	.20	t	0	.33	0	65	16				
March.....	24.32	2.8	.40	t	.09	.93	0	77	43				
April.....	48.61	14.2	3.2	t	.47	4.7	.01	660	108				
May.....	40.88	246.8	220	t	8.0	82	.21	2,310	2,240				
June.....	34.13	66.3	21	.10	2.2	22	.06	1,320	670				
July.....	11.25	8.1	2.2	t	.26	2.7	.01	670	267				
August.....	4.81	6.3	3.0	0	.20	2.1	.01	720	485				

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment										
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)					
			Maximum	Minimum				Maximum daily	Weighted mean				
September.....	17.73	58.4	40	t	1.9	19	.05	1,500	1,220				
Water Year 1968	438.35	680.30	220	0	1.9	226	.57	2,310	575				
October.....	14.46	19.26	8.9	0	.62	6.4	.02	575	493				
November.....	10.66	2.32	.50	.01	.08	.77	0	257	81				
December.....	30.23	9.22	3.2	.02	.30	3.1	.01	419	113				
Cal. Year 1968	294.48	440.40	220	0	1.2	146	.37	2,310	554				
January.....1969	100	31.35	18	.02	1.0	10	.03	365	116				
February.....	47	34.38	11	.02	1.2	11	.03	750	271				
March.....	83.6	104.94	30	.05	3.4	35	.09	1,400	465				
April.....	111.4	25.41	6.0	.10	.85	8.4	.02	284	85				
May.....	70.55	27.22	8.9	.10	.88	9.0	.02	425	143				
June.....	144.02	345.07	83	.10	12	115	.29	1,180	887				
July.....	307.8	1,066.38	689	.11	34	354	.89	1,360	1,280				
August.....	41.44	38.9	20	.07	1.3	13	.03	549	348				
September.....	15.57	6.61	1.6	.03	.22	2.2	.01	611	157				
Water Year 1969	976.73	1,711.06	689	0	4.7	568	1.4	1,400	649				
October.....	23.06	3.93	.52	.02	.13	1.3	0	384	63				
November.....	15.17	1.46	.10	.02	.05	.49	0	66	36				
December.....	7.84	1.4	.15	.02	.05	.47	0	204	66				
Cal. Year 1969	967.45	1,687.05	689	.02	4.6	560	1.4	1,400	646				
January.....1970	5.89	1.34	.31	.01	.04	.45	0	230	84				
February.....	55.15	19.54	7.3	.02	.70	6.5	.02	315	131				
March.....	143.8	102.54	47	.01	3.3	34	.09	833	264				
April.....	124.7	36.46	13	.09	1.2	12	.03	190	108				
May.....	123.1	316.28	227	.04	10	105	.26	1,840	952				
June.....	120.9	1,126.52	550	.15	38	374	.94	3,600	3,450				
July.....	51.06	157.93	100	.07	5.1	52	.13	3,100	1,150				
August.....	24.02	15.72	11	.01	.51	5.2	.01	630	242				
September.....	225.88	352.72	318	.01	12	117	.29	780	578				
Water Year 1970	920.57	2,135.84	550	.01	5.9	710	1.8	3,600	859				
October.....	55.89	40.3	21	.11	1.3	13	.03	630	267				
November.....	49.85	6.39	1.1	.05	.21	2.1	.01	151	48				
December.....	29.86	4.6	.76	.04	.15	1.5	0	200	57				
Cal. Year 1970	1,010.10	2,180.34	550	.01	6.0	724	1.8	3,600	799				

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)				
			Maximum	Minimum				Maximum daily	Weighted mean			
January...1971	18.15	2.05	.18	.01	.07	.68	0	90	42			
February.....	242.51	274.93	90	.01	9.8	91	.23	845	420			
March.....	67.9	20.99	6.7	.09	.68	7.0	.02	246	114			
April.....	32.39	3.96	.72	.03	.13	1.3	0	96	45			
May.....	21.71	5.99	1.1	.05	.19	2.0	0	202	102			
June.....	19.23	5.99	1.4	.02	.20	2.0	0	207	115			
July.....	28.51	249.62	212	0	8.1	83	.21	1,900	3,240			
August.....	1.01	.27	.06	0	.01	.09	0	177	99			
September.....	7.09	5.24	2.8	0	.17	1.7	0	218	274			
Water Year 1971	574.10	620.33	212	0	1.7	206	.52	1,900	400			
October.....	10.16	9.3	6.1	0	.30	3.1	.01	850	339			
November.....	39.15	52.87	45	.01	1.8	18	.04	469	500			
December.....	107.28	372.1	330	.01	12	124	.31	1,530	1,280			
Cal. Year 1971	595.09	1,003.31	330	0	2.7	333	.84	1,900	624			
January.....1972	20.57	4	1.3	.01	.13	1.3	0	265	72			
February.....	142.21	294.76	229	.01	10	98	.25	1,060	768			
March.....	89.6	86.52	66	.05	2.8	29	.07	1,740	358			
April.....	169.77	225.89	113	.03	7.5	75	.19	970	493			
May.....	132.29	114.61	68	.01	3.7	38	.10	2,110	321			
June.....	59.93	78.65	48	.04	2.6	26	.07	1,490	486			
July.....	228.3	2,895.16	2,840	.06	93	962	2.4	2,340	4,700			
August.....	195.7	232.63	183	.20	7.5	77	.19	1,040	440			
September.....	36.88	5.87	.57	.04	.20	2.0	0	130	59			
Water Year 1972	1,231.84	4,372.36	2,840	0	12	1,450	3.6	2,340	1,310			
October.....	27.58	5.13	1.2	.01	.17	1.7	0	175	69			
November.....	52.3	12.27	1.7	.03	.41	4.1	.01	195	87			
December.....	87.18	93.5	69	.03	3.0	31	.08	735	397			
Cal. Year 1972	1,242.31	4,048.99	2,840	.01	11	1,350	3.4	2,340	1,210			
January.....1973	99.1	46.69	16	.02	1.5	16	.04	385	174			
February.....	71.68	12.3	1.9	.01	.44	4.1	.01	447	64			
March.....	156.9	218.82	53	.16	7.1	73	.18	1,280	517			
April.....	335.4	1,902.39	1,500	.08	63	632	1.6	4,160	2,100			
May.....	279.7	774.2	301	.06	25	257	.65	1,480	1,030			
June.....	125	109.81	63	.17	3.7	36	.09	548	325			
July.....	63.32	100.63	79	.07	3.2	33	.08	1,240	589			
August.....	27.36	9.83	3.4	.02	.32	3.3	.01	480	133			
September.....	76.14	26.57	10	.02	.89	8.8	.02	280	129			

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Water Year 1973	1,401.66	3,312.14	1,500	.01	9.1	1,100	2.8	4,160	875

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters						
Apr. 6, 1954	1.5	10.0	1040	4.2	92	98	100	SPWC			
Apr. 26,	22		11600	689	55	87	100	SPWC			
Apr. 30,	78		12700	2670	46	74	99	SPWC			
June 2,	7.7	13.0	1050	22	48	91	100	SPWC			
Aug. 25,	80	21.0	5120	1110	45	78	99	SPWC			
Cct. 10, 1954	67	18.0	6170	1120	45	74	99	100	SPWC		
Apr. 19, 1955	89	14.5	32000	7690	36	68	99	99	100	SPWC	
Apr. 19,	64	14.5	28500	4920	39	72	99	100	SPWC		
Apr. 23,	187	13.5	30200	15200	30	57	97	98	100	SPWC	
May 9, 1956	6.8	13.0	7280	134	72	94	98	100	SPWC		
July 6,	19	20.0	31600	1620	44	82	98	99	99	100	SPWC
July 18,	1630	19.5	37800	166000	34	69	99	99	100	SPWC	
Aug. 30,	770	21.0	6730	14000	28	63	99	99	100	SPWC	
May 21, 1957	2.3	14.5	42400	263	59	92	100	100	SPWC		
Aug. 28,	34	16.0	4360	400	56	89	100	100	SPWC		
Cct. 15, 1957	4.5	13.5	3620	44	72	93	94	97	100	SPWC	
Cct. 23, .....	.14	12.0	900	.34	91	93	100	100	SPWC	
Dec. 20,	5.5	1.0	2440	36	69	85	100	100	SPWC		
Dec. 20,	5.5	1.0	2440	36	67	83	100	100	SPN		
Feb. 24, 1958	136	.5	4200	1540	56	73	99	100	SPWC		
Feb. 24,	136	.5	4200	1540	17	52	100	100	SPN		
May 22,	25	12.0	27500	1860	53	95	100	100	SPWC		
May 31, .....	.36	19.0	3080	3.0	75	81	100	100	SPWC	
May 31,	40	19.0	12800	1380	49	85	100	100	SPWC		
May 31,	40	19.0	12800	1380	39	79	100	100	SPN		
June 8,	20	22.0	41700	2250	50	85	100	100	SPWC		
June 8,	74	21.0	40500	8090	44	82	100	100	SPWC		
June 13,	221	21.0	19000	11300	37	75	100	100	SPWC		
June 13,	221	21.0	19000	11300	26	68	100	100	SPN		
July 14,	170	21.0	11700	5370	38	71	100	100	SPWC		
Sept. 5,	1.5	19.5	7820	32	49	79	100	100	SPWC		

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis	
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters			
Cct. 8, 1958	1.8	15.5	8120	39	46	70	100	SPWC
Oct. 8,	1.8	15.5	8120	39	37	70		SPN
Cct. 8,	725	15.5	6670	13100	35	65	99	SPWC
Cct. 8,	725	15.5	6670	13100	26	59		SPN
Nov. 17,	4.0		1080	12	75	80	99	SPWC
Mar. 19, 1959	306		4410	3640	29	44	93	SPWC
Apr. 27,	1.1	7.0	15300	45	52	64	100	SPWC
Apr. 27,	60	6.5	13100	2120	37	66	100	SPWC
Apr. 27,	60	6.5	13100	2120	22	56		SPN
Apr. 27,	206	6.5	13900	7730	51	58	99	SPWC
Apr. 27,	101	12.0	10300	2810	41	64	97	SPWC
May 10,	328	15.0	34000	30100	41	72	99	SPWC
May 19,	241	20.5	19800	12900	41	65	99	SPWC
May 30,	5.8	22.0	23200	363	35	61	99	SPWC
July 17,	206	21.0	11500	6400	34	64	99	SPWC
July 18,	127	21.0	9920	3400	45	76	100	SPWC
Oct. 5, 1959	159	13.5	5670	2430	29	61	98	SPWC
Oct. 5,	159	13.5	5670	2430	21	59	88	SPN
June 1, 1960	196	15.5	21500	11400	39	69	95	SPWC
June 4,	150	18.5	22200	8990	42	70	98	SPWC
June 4,	150	18.5	22200	8990	27	64	99	SPN
July 9,	176	18.5	8820	4190	25	32	97	SPWC
Oct. 31, 1960	95	10.0	7320	1880	24	43	95	SPWC
Nov. 15,	246	12.0	17800	11800	28	51	95	SPWC
Feb. 22, 1961	83	2.0	1100	247	26	45	99	SPWC
Mar. 4,	28	3.5	28200	2130	32	54	95	SPWC
Mar. 4,	28	3.5	28200	2130	16	46	84	SPN
Mar. 13,	123	3.5	10200	3390	22	42	92	SPWC
May 14,	5.8	19.0	9020	141	44	83	96	SPWC
May 14,	5.8	19.0	9020	141	35	77	88	SPN
July 1,	18	24.5	16900	821	31	52	73	SPWC
July 1,	16	24.5	7080	306	42	94	100	SPWC
July 1,	16	24.5	7080	306	28	73	94	SPN

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters						
July 21,.....	.1	20.0	7370	2.0	61	74	86	100		PWC	
July 21,.....	.1	20.0	7370	2.0	33	47	67	86	100	PN	
July 31,.....	21	23.5	14900	845	65	73				SPWC	
Aug. 1,.....	42	22.0	2360	268	31	54	99	100		SPWC	
Aug. 4,.....	32	21.0	7480	646	31	53	99	100		SPWC	
Aug. 19,.....	9.8	20.0	6220	165	52	84	100	100		SPWC	
Sept. 12,.....	9.4	18.0	11100	282	50	78	100	100		SPWC	
Sept. 13,.....	66	20.0	2360	421	38	61	96	99	100	SPWC	
Mar. 18, 1962	55	3.5	5940	882	23	39	72	96	99	100	SPWC
Apr. 5,.....	36	3.5	10300	1000	28	45	77	97	99	100	SPWC
July 28,.....	140	18.0	13000	4910	40	66	89	97	99	100	SPWC
July 1, 1963	4.5	24.5	12100	147	46	55	70	87	99	100	SPWC
July 1,.....	4.5	24.5	12100	147	20	34	52	82	96	SPN	
Nov. 22, 1963	4.0	12.0	6900	75	53	60	74	90	100	SPWC	
Nov. 22,.....	4.0	12.0	6900	75	10	26	62	84	95	SPN	
Apr. 20, 1964	7.7	8.0	3300	69	55	71	90	100		SPWC	
June 19,.....	26	18.0	16200	1140	43	58	86	100		VPWC	
June 22,.....	12	20.0	7800	250	34	38	48	67	91	VPWC	
June 22,.....	12	20.0	7800	250	11	20	56			VPN	
Jan. 1, 1965	5.6	.0	2500	38	47	58	72	87	100	SPWC	
Mar. 15,.....	47	3.5	6800	863	24	29	38	57	89	99	SPWC
Apr. 24,.....	85		14100	3240	18	23	31	43	73	96	SPWC
May 26,.....	3.6		16200	158	31	38	48	63	86	100	VPWC
May 26,.....	3.6		16200	158	16	25	37	59		VPN	
May 26,.....	42	18.5	18200	2060	20	23	30	45	82	99	SPWC
Aug. 8,.....	4.2	21.0	4800	54	57	62	76	93	98	100	SPWC
Sept. 19,.....	12	22.0	16200	525	37	44	51	72	91	100	SPWC
May 23, 1966	335	16.5	25100	22700	23	27	37	54	83	97	VPWC
May 23,.....	335	16.5	25100	22700	8	16	25	43	79		VPN

05455000 RALSTON CREEK AT IOWA CITY, ICWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis					
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters							
Apr. 13, 1967	29	11.0	6200	490	33	40	50	67	95	99	100	VPWC
Apr. 13,	29	11.0	6200	490	15	24	37	57	88			VPWC
June 7,	602	18.5	10600	17200	24	31	43	64	91	99	100	SPWC
July 19,	3.8	26.0	5670	58	67	80		92	99	100		SPWC
July 7, 1969	43	21.0	2570	298	37	53	64	83	95	99	100	SPWC
June 20, 1970	51	26.5	20500	2820	42	55	68	80	92	98	100	SPWC
July 10, 1971	73	24.0	6620	1310	46	53	70	88	96	100		SPWC
Mar. 15, 1972	35	2.0	5230	494	24	29	34	50	79	100		SPWC
Apr. 14,	9.9	10.0	2160	58	25	28	36	50	70	80	83	VPWC
Apr. 21,	51	11.0	3480	479	22	27	33	44	73	98	100	VPWC
July 17,	1750	24.0	7720	36500	31	42	54	74	96	98	98	VPWC
Mar. 6, 1973	13	1.0	2700	95	36	43	53	75	95	99		SPWC
Mar. 31,	15	1.5	2440	99	38	48	64	77	95	99		SPWC
Apr. 20,	250	17.0	15500	10500	26	34	43	55	70	95	96	VPWC

IOWA RIVER BASIN

05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'05", long 92°30'27", in SW1/4 NE1/4 sec.14, T.79N., R.6W., Johnson County, on right bank 60 ft (18 m) downstream from bridge on Muscatine Avenue in Iowa City, and 1.2 mi (1.9 km) upstream from mouth.

DRAINAGE AREA.--2.94 mi² (7.61 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Apr. 27, 1967	1.7	7.0	30	.14
June 7,.....	236	16.5	7500	4780
June 27,.....	.60	23.0	62	.10
June 27,.....	21	23.0	33	1.9
July 27,.....	.20	27.0	59	.03
Oct. 31, 1967	6.0	11.0	52	.84
Nov. 29,.....	1.0	1.0	100	.27
Jan. 3, 1968	*.33	1.0	150	.13
Feb. 27,.....	1.1	.0	66	.20
May 1,.....	.66	21.0	9	.02
July 31,.....	.18	24.0	140	.07
Oct. 2, 1968	.03	19.0	19	.00
Oct. 28,.....	.14	7.0	70	.03
Oct. 29,.....	.15	4.0	72	.03
Dec. 27,.....	2.7	.0	355	2.6
Dec. 27,.....	2.8	.0	261	2.0
Feb. 26, 1969	4.3	1.0	104	1.2
Mar. 25,.....	3.1	2.0	108	.90
Apr. 21,.....	1.9	12.0	15	.08
June 17,.....	1.1	18.0	23	.07
Dec. 15, 1969	.13	.5	110	.04
Mar. 23, 1970	1.6	1.5	30	.13
Apr. 27,.....	1.3		712	2.5
May 28,.....	1.8		669	3.3
July 28,.....	.44	26.0	43	.05
Aug. 25,.....	.23	26.5	60	.04
Dec. 21, 1970	2.0		110	.60

05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Jan. 27, 1971	.27		193	.10
Mar. 23,.....	.95	3.5	67	.20
Apr. 21,.....	.70	15.5	31	.06
July 20,.....	.67	18.0	101	.20
Sept.23,.....	.06	11.0	55	.01
Oct. 27, 1971	.50	15.5	88	.12
Nov. 1,.....	13		1010	35
Nov. 23,.....	.33	1.0	150	.13
Dec. 15,.....	128		3160	1090
Dec. 30,.....	4.1	.0	262	2.9
Jan. 11, 1972	1.1		265	.79
Mar. 15,.....	45	2.0	8070	981
Mar. 28,.....	1.5	6.0	23	.09
Apr. 24,.....	4.4		611	7.3
May 23,.....	1.0	30.0	25	.07
June 20,.....	4.3	17.0	77	.89
Aug. 22,.....	87	24.5	249	58
Oct. 25, 1972	1.0	9.0	100	.27
Dec. 28,.....	.67	.0	134	.24
Jan. 22, 1973	8.9	1.0	475	11
Mar. 28,.....	3.1	8.0	66	.56
June 14,.....	2.0	19.5	25	.13
July 18,.....	.66	20.5	21	.04
July 26,.....	.80	24.0	50	.11
Sept.10,.....	.50	17.5	122	.16

*Daily mean discharge

IOWA RIVER BASIN
 05455500 ENGLISH RIVER AT KALONA, IOWA

LOCATION.--Lat 41°27'59", Long 91°02'56", in SW1/4 sec.13, T.77N., R.8W., Washington County, on right bank 30 ft (9 m) upstream from bridge on State Highway 1, 0.8 mi (1.3 km) south of Kalona, 1.1 mi (1.8 km) upstream from Camp Creek, 4.5 mi (7.2 km) downstream from Smith Creek, and 14.5 mi (23.3 km) upstream from mouth.

DRAINAGE AREA.--573 mi² (1,484 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 3, 1946	985		2530	6730
June 13,.....	1700		7620	35000
July 30, 1948	1550		5900	24700
June 4, 1965	398	20.0	800	860
Sept. 7,.....	2460	14.5	2200	14600
Sept.21,.....	19600	20.5	460	24300
Sept.23,.....	8920	18.0	200	4820
Oct. 7, 1965	470	15.5	110	140
Nov. 4,.....	181	11.0	22	11
Dec. 9,.....	155	3.0	58	24
Jan. 6, 1966	465	.5	170	213
Feb. 10,.....	5100	1.0	1180	16200
Mar. 10,.....	195	2.0	140	74
Apr. 7,.....	275	6.5	170	126
May 2,.....	380	14.0	200	205
May 24,.....	5860	16.0	3790	60000
June 7,.....	296	19.5	240	192
July 14,.....	137	28.0	110	41
Aug. 11,.....	77	20.0	12	2.5
Sept.15,.....	43	18.0	27	3.1
Oct. 7, 1966	186	10.0	15	7.5
Nov. 10,.....	63	5.5	330	56
Mar. 13, 1967	302	3.0	130	106
Apr. 6,.....	165	13.5	220	98
May 26,.....	59	24.0	32	5.1
June 27,.....	142	20.0	200	77
July 27,.....	25	24.0	110	7.4
Aug. 28,.....	17	16.5	49	2.2
Oct. 31, 1967	899	7.0	350	850
Dec. 28,.....	83	.0	20	4.5

054455500 ENGLISH RIVER AT KALONA, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Jan. 31, 1968	218	1.0	75	44
Feb. 29,.....	37	.0	6	.60
Mar. 28,.....	83	10.0	56	13
Apr. 29,.....	349	10.0	340	320
May 29,.....	107	18.0	250	72
June 28,.....	188	18.0	510	259
July 31,.....	17	24.0	57	2.6
Aug. 29,.....	8.3	20.0	65	1.5
Oct. 2, 1968	18	22.0	9	.44
Oct. 29,.....	18	5.0	37	1.8
Nov. 25,.....	28	3.0	15	1.1
Dec. 23,.....	34	.0	95	8.7
Feb. 26, 1969	1710	1.0	268	1240
Mar. 17,.....	1020	1.0	1110	3060
Apr. 23,.....	376	13.0	166	169
May 23,.....	1160	13.0	1230	3850
June 16,.....	601	24.0	496	805
Aug. 18,.....	244	23.0	118	78
Sept. 18,.....	72	19.0	93	18
Oct. 22, 1969	168	12.0	142	64
Nov. 20,.....	70	.5	14	2.6
Dec. 18,.....	49	.0	5	.66
Jan. 23, 1970	27	.0	13	.95
Feb. 18,.....	349	.0	120	113
Mar. 19,.....	185	3.0	52	26
Apr. 22,.....	448	12.0	242	293
May 28,.....	257	20.0	597	414
July 28,.....	97	24.5	66	17
Aug. 26,.....	141	18.5	45	17
Oct. 14, 1970	761	13.0	294	604
Dec. 21,.....	389		87	91
Jan. 28, 1971	118		14	4.5
Mar. 22,.....	257	4.5	158	110
Apr. 20,.....	167	20.0	113	51
May 26,.....	320		280	242
Sept. 23,.....	18	17.0	158	7.7
Oct. 26, 1971	16	15.0	62	2.7
Feb. 22, 1972	126	.0	18	6.1
Mar. 29,.....	277	6.0	162	121
Apr. 27,.....	691	17.5	382	713

05455500 ENGLISH RIVER AT KALONA, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 26,.....	382	21.5	351	362
June 21,.....	872	18.0	4600	10800
Aug. 24,.....	176	22.0	55	26
Sept. 27,.....	139	17.0	70	26
Oct. 26, 1972	310	6.0	80	67
NOV. 24,.....	400	1.5	80	86
Dec. 27,.....	215	.0	8	4.6
Jan. 23, 1973	736	.0	355	705
Feb. 22,.....	788	.0	373	794
Mar. 29,.....	739	8.0	226	451
May 9,.....	2520	10.5	862	5870
June 20,.....	492	23.0	159	211
Aug. 2,.....	75	21.5	145	29

IOWA RIVER BASIN
05464130 FOURMILE CREEK NEAR LINCOLN, IOWA

LOCATION.--Lat 42°43'32", long 92°36'39", in SW1/4 sec. 28, T.86 N., R.15 W., Tama County, 10 ft (3 m) upstream from gaging station on bridge on county highway, 1 mi (1.6 km) upstream from Half Mile Creek and 4.7 mi (7.6 km) southeast of Lincoln.

DRAINAGE AREA.--13.79 mi² (35.7 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 7,800 mg/l June 14, 1972; minimum daily, 15 mg/l July 5-7, 1970.
Sediment discharge: Maximum daily, 5,980 tons (5,430 tonnes) July 4, 1973; minimum daily, 0.03 ton (0.027 tonne) Aug. 30, 31, Sept. 1, 2, 1970.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water W.S.P. year	Daily suspended sediment			
	Concentrations (mg/l)		Loads (tons)	
	Max.	Date	Min.	Date
1970	2,310	May 14	15	July 5-7
1971	1,460	May 24	25	Jan. 16
1972	7,800	June 14	67	Apr. 15, July 11
1973	7,190	July 4	52	May 22-24
				1,900 Mar. 2 0.03 Aug. 30 to Sept. 2
				571 Mar. 13 .07 Jan. 4
				5,790 June 14 .07 Oct. 9, 10, 12, 13, 17, Jan. 16, 17
				5,980 July 4 .26 Sept. 7

Water Resources Data for Iowa, Part 2, Water Quality Records

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Concentration (mg/l)		
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
October.....1969	94.9	51.2	3.5	1.1	1.7	3.7	.04	228	200
November.....	82.8	36.54	2.8	.64	1.2	2.7	.03	241	163
December.....	45.4	14.11	.62	.37	.46	1.0	.01	147	115
January.....1970	31.99	13.28	.53	.31	.43	.96	.01	195	154
February.....	245.2	198.29	91	.39	7.1	14	.17	420	300

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum						
March.....	621.5	3,070.5	1,900	1.1	99	223	2.6	1,710	1,830	
April.....	162.6	22.13	1.8	.23	.74	1.6	.02	80	50	
May.....	453.4	1,483.52	674	.24	48	108	1.2	2,310	1,210	
June.....	135.1	29.79	8.9	.14	.99	2.2	.02	350	82	
July.....	35.6	4.67	1.0	.05	.15	.34	0	200	49	
August.....	68.68	123.7	112	.03	4.0	9.0	.10	1,520	667	
September.....	146.52	144.87	61	.03	4.8	11	.12	750	366	
Water Year 1970	2,123.69	5,192.60	1,900	.03	14	377	4.3	2,310	906	
October.....	461.7	375.9	191	1.2	12	27	.31	469	302	
November.....	260.2	114.1	9.5	1.7	3.8	8.3	.10	293	162	
December.....	170.7	38.66	2.3	.71	1.2	2.8	.03	113	84	
Cal. Year 1970	2,793.19	5,619.41	1,900	.03	15	408	4.7	2,310	745	
January.....1971	112.7	19.14	2.1	.07	.62	1.4	.02	183	63	
February.....	799.4	514.11	187	.20	18	37	.43	495	238	
March.....	1,371.4	1,087.4	571	2.5	35	79	.91	515	294	
April.....	156.2	52.99	3.0	.99	1.8	3.8	.04	168	126	
May.....	326.2	603.4	300	.34	19	44	.50	685	464	
June.....	287.2	359.5	143	1.1	12	26	.30	1,090	464	
July.....	403.8	692.05	379	.42	22	50	.58	830	635	
August.....	34.06	13.66	.86	.24	.44	.99	.01	262	149	
September.....	9.31	6.38	.78	.11	.21	.45	.01	340	254	
Water Year 1971	4,392.87	3,877.29	571	.07	11	281	3.2	1,460	327	
October.....	9.4	5.48	.99	.07	.18	.40	0	305	216	
November.....	26.4	17.72	3.4	.21	.59	1.3	.01	342	249	
December.....	38.67	16.83	1.8	.13	.54	1.2	.01	226	161	
Cal. Year 1971	3,574.74	3,388.66	571	.07	9.3	246	2.8	1,460	351	
January.....1972	27.95	10.97	1.6	.07	.35	.80	.01	205	145	
February.....	178.68	201.57	159	.21	7.0	15	.17	492	418	
March.....	416.1	531.09	183	.93	17	39	.44	688	473	
April.....	155.2	342.04	140	.33	11	25	.29	2,170	816	
May.....	196.7	114.02	22	.92	3.7	8.3	.10	455	215	
June.....	835.8	8,495.71	5,790	.72	283	617	7.1	7,800	3,760	
July.....	253.2	138.8	21	.80	4.5	10	.12	319	203	
August.....	740.4	520.1	135	1.1	17	38	.43	452	260	
September.....	195.2	87.41	14	.84	2.9	6.3	.07	369	166	
Water Year 1972	3,073.70	10,481.74	5,790	.07	29	761	8.7	7,800	1,260	

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Daily loads (tons)		Maximum	Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)			
			Minimum	Maximum					Maximum daily	Weighted mean		
October.....	297.2	280.7	2.7	63	9.1	20	.23	580	350			
November.....	497	329.5	3.2	47	11	24	.28	435	246			
December.....	658.4	733.5	1.2	548	24	53	.61	580	413			
Cal. Year 1972	4,451.83	11,785.41	.07	5,790	32	855	9.8	7,800	980			
January.....1973	682.4	554.6	1.2	351	18	40	.46	448	301			
February.....	714	768.3	1.2	470	27	56	.64	515	399			
March.....	794	532.3	2.7	113	17	39	.44	488	248			
April.....	1,908	1,219.8	4.8	236	41	89	1.0	325	237			
May.....	1,202	2,750	2.4	1,080	89	200	2.3	3,400	847			
June.....	653	1,362.7	3.4	779	45	99	1.1	3,270	773			
July.....	666	6,389.2	1.2	5,980	206	464	5.3	7,190	3,550			
August.....	126.9	35.7	.51	4.5	1.2	2.6	.03	242	104			
September.....	140.9	69.16	.26	17	2.3	5.0	.06	319	182			
Water Year 1973	8,339.80	15,025.46	.26	5,980	41	1,090	13	7,190	667			

IOWA RIVER BASIN
 05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA

LOCATION.--Lat 42°12'40", Long 92°36'39", in SW1/4 sec.33, T.86 N., R.15 W., Tama County, 10 ft (3 m) upstream from gaging station on bridge on county highway, 0.8 mi (1.3 km) upstream from mouth, and 5.3 mi (8.5 km) northeast of Gladbrook.
 DRAINAGE AREA.--1.33 mi² (3.44 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 3,250 mg/l Apr. 16, 1972; minimum daily, no flow for Sept. 29 to Oct. 20, Oct. 22-26, 1971.
 Sediment discharge: Maximum daily, 93 tons (84 tonnes) Mar. 2, 1970; minimum daily, 0 ton (0.00 tonne) on many days in 1970, 1971, and 1972.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)		Date
		Max.	Min.	Max.	Min.	
1970	2154	1,320	20	93	0	Mar. 2 Apr. 5-9, 11-18, May 1-4, June 16-18
1971	2164	1,270	no flow	51	0	Mar. 14 Sept. 29, 30
1972	+	3,250	no flow	32	0	Apr. 16 Oct. 1-20, 22-26
1973	+	1,670	19	78	.01	June 4 July 31 Sept. 6, 7

+ Water Resources Data for Iowa, Part 2, Water Quality Records

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Mean	Maximum daily	Weighted mean
October.....1969	9.2	.97	.08	.01	.73	0	74	39
November.....	6.15	.68	.06	.01	.51	0	60	41
December.....	4.61	.85	.04	.01	.64	0	135	68
January.....1970	3.63	.55	.03	.01	.41	0	100	56
February.....	64.09	16.54	3.2	.01	12	.01	271	96

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
				Minimum	Maximum						Minimum
March.....	50.88	106.77	93	.02	3.4	80	.09	1,150	777	
April.....	10.6	.78	.05	.02	.03	.59	0	58	27	
May.....	34.56	67.84	51	.01	2.2	51	.06	1,320	727	
June.....	10.53	1	.10	.02	.03	.75	0	70	35	
July.....	3.47	.56	.09	.01	.02	.42	0	114	60	
August.....	8.60	3.74	3.2	0	3.2	2.8	0	240	161	
September.....	5.84	1.69	.52	0	.06	1.3	0	215	107	
Water Year 1970	212.16	201.97	93	0	.55	152	.17	1,320	353	
October.....	22.49	7.82	3.2	.03	.25	5.9	.01	215	129	
November.....	17.51	9.45	2.1	.10	.31	7.1	.01	640	200	
December.....	11.9	5.73	.49	.06	.18	4.3	0	365	178	
Cal. Year 1970	244.10	222.47	93	0	.61	167	.19	1,320	338	
January....1971	5.9	.69	.07	.01	.02	.52	0	111	43	
February.....	81.83	43.75	18	.01	1.6	33	.04	310	198	
March.....	66.72	137.99	51	.07	4.5	104	.12	1,270	766	
April.....	22.29	11.16	2.7	.09	.37	8.4	.01	275	185	
May.....	30.19	14.52	4.5	.09	.47	11	.01	215	178	
June.....	25.18	8.8	1.4	.09	.29	6.6	.01	228	129	
July.....	18.14	12.91	8.4	.03	.42	9.7	.01	180	264	
August.....	1.68	.53	.04	0	.02	.40	0	169	117	
September.....	.44	.13	.03	0	0	.10	0	198	109	
Water Year 1971	304.27	253.48	51	0	.69	191	.21	1,270	309	
October.....	.26	.11	.06	0	0	.08	0	196	157	
November.....	3.32	1.4	.29	.01	.05	1.1	0	235	156	
December.....	4.24	1.05	.23	.01	.03	.79	0	146	92	
Cal. Year 1971	260.19	233.04	51	0	.64	175	.19	1,270	332	
January....1972	2.48	1.93	.41	0	.06	1.5	0	650	288	
February.....	23.63	22.48	20	0	.78	17	.02	375	352	
March.....	13.91	11.12	4.0	.01	.36	8.4	.01	449	296	
April.....	20.43	28.22	17	.01	.94	21	.02	3,250	733	
May.....	28.35	5.57	.95	.08	.18	4.2	0	185	101	
June.....	29.83	10.56	1.7	.12	.35	7.9	.01	253	138	
July.....	103.32	8.89	2.0	.03	.29	6.7	.01	157	110	
August.....	14.8	50.54	32	.14	1.6	38	.04	273	181	
September.....	258.82	146.16	32	0	.40	110	.12	3,250	209	

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
October.....	23.27	17.61	4.3	.14	.57	13	.01	492	280	
November.....	41.5	44.4	3.8	.53	1.5	33	.04	570	396	
December.....	60.91	130.26	78	.16	4.2	98	.11	1,200	792	
Cal. Year 1972	376.68	335.87	78	0	.92	253	.28	3,250	330	
January.....1973	56.94	19.55	8.4	.10	.63	15	.02	205	127	
February.....	33.04	7.49	1.6	.06	.27	5.6	.01	156	84	
March.....	70.9	20.2	4.1	.13	.65	15	.02	219	106	
April.....	136.7	45.23	11	.23	1.5	34	.04	300	123	
May.....	40.56	13.17	3.0	.03	.42	9.9	.01	441	120	
June.....	25.14	16.52	6.3	.06	.55	12	.01	1,670	243	
July.....	52.5	88.91	64	.03	2.9	67	.07	1,400	627	
August.....	7.09	2.52	.61	.03	.08	1.9	0	238	132	
September.....	13.19	3.71	.46	.01	.12	2.8	0	169	104	
Water Year 1973	561.74	409.57	78	.01	1.1	308	.34	1,670	270	

05464133 HALF MILE CREEK NEAR GLADBECK, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis					
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Particle size						
Mar. 2, 1970	30	1.0	2080	168	34	43	46	52	74	92	100	SPWC
May 14,	9.9	11.5	2440	65	54	60	76	80	91	99	100	SPWC
Aug. 5,	4.9	21.5	3260	43	56	73	78	87	92	99	100	SPWC
Nov. 9, 1970	1.9	10.0	1000	5.1	45	64	70	72	94	98	100	SPWC
Apr. 16, 1972	9.1	6.0	6500	160	39	41	47	66	90	99		SPWC

Miscellaneous samples collected at site but outside period of record.

Sept. 12, 1969	1.6	16.0	46	.28								
Sept. 15, .....	.27	20.0	61	.04								
Sept. 18, .....	.28	14.0	65	.05								
Sept. 25,	1.3	12.0	112	.39								

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
Mar. 25, 1970	.82	2.0	1	.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	SV
May 27, .....	.86	21.0	1												S
May 25, 1971	1.3	10.0	1	50	52	54	60	74	80	89	92	100			SV
Jan. 4, 1972	.06	.0	1	10	10	21	60	93	96	99	100				SV
Apr. 4, .....	.23	2.0	1	18	22	29	55	91	93	99	100				SV
May 3, 1973	2.6	7.0	1	29	37	57	84	98							V

IOWA RIVER BASIN
05464137 FOURMILE CREEK NEAR TRAEER, IOWA

LOCATION.--Lat 42°12'07", long 92°33'44", near center of sec.2, T.85 N., C.15 W., Tama County, 10 ft (3 m) upstream from gaging station on bridge on county highway T69, 2 mi (3.2 km) upstream from mouth, and 5.0 mi (8.0 km) northwest of Traer.

DRAINAGE AREA.--19.51 mi² (50.5 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 2,480 mg/l July 4, 1973; minimum daily, 23 mg/l May 2, 6-8, 1970.
Sediment discharge: Maximum daily, 2,060 tons (1,870 tonnes) Mar. 13, 1971; minimum daily, 0.03 ton (0.027 tonne) Oct. 9, 1971.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)		Daily suspended sediment	
		Max.	Date	Min.	Date	Max.	Date
1970	2154	2,200	Mar. 3	23	May 2, 6-8	1,240	Mar. 3
1971	2164	2,000	Mar. 14	39	Apr. 26	2,060	Mar. 13
1972	+	2,350	June 14	35	Nov. 30	1,850	June 14
1973	+	2,480	July 4	37	Apr. 13	1,060	July 4

* Water Resources Data for Iowa, Part 2, Water Quality Records

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
October.....1969	118.1	41.07	3.3	.78	2.1	.03	163	129
November.....	124.9	27.29	2.5	.58	1.4	.02	130	81
December.....	68.6	15.31	.69	.34	.78	.01	96	83
January.....1970	48	11.01	.46	.27	.56	.01	98	85
February.....	807.4	326.5	122	.40	17	.27	250	150
March.....	721.7	1,816.1	1,240	1.6	93	1.5	2,200	932
April.....	216.8	30.02	1.9	.54	1.5	.03	75	51

05464137 FOURMILE CRFEK NEAR TRAR, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Mean	Tons per sq mi	Acres-foot	Maximum daily	Weighted mean	
			Maximum	Minimum						
May.....	516.2	1,857.84	767	.28	60	95	1.6	2,140	1,330	
June.....	183.1	53.14	28	.28	1.8	2.7	.04	950	107	
July.....	52.97	10.03	1.2	.09	.32	.51	.01	150	70	
August.....	91.98	109.07	38	.10	3.5	5.6	.09	1,270	439	
September.....	139.94	135.23	44	.16	4.5	6.9	.11	900	358	
Water Year 1970	3,089.69	4,432.61	1,240	.09	12	227	3.7	2,200	531	
October.....	494.4	624.8	420	1.1	20	32	.52	1,040	468	
November.....	328.8	147.5	9.3	2.3	4.9	7.6	.12	218	166	
December.....	238.6	95.9	4.7	2.3	3.1	4.9	.08	208	149	
Cal. Year 1970	3,839.89	5,217.14	1,240	.09	14	267	4.4	2,200	503	
January....., 1971	159.7	56.81	2.7	.81	1.8	2.9	.05	202	132	
February.....	1,143	997.64	251	.97	36	51	.83	1,020	323	
March.....	1,896	5,478.8	2,060	5.2	177	281	4.6	2,000	1,070	
April.....	262.7	99.14	6.2	.69	3.3	5.1	.08	213	140	
May.....	408.9	542.14	296	.65	17	28	.45	1,340	491	
June.....	322.7	401.7	126	2.3	13	21	.34	1,060	461	
July.....	417.2	925.37	555	.71	30	47	.77	1,110	821	
August.....	40.27	10.91	.86	.08	.35	.56	.01	117	100	
September.....	16.52	4.67	1.2	.05	.16	.24	0	180	105	
Water Year 1971	5,728.79	9,385.38	2,060	.05	26	481	7.8	2,000	607	
October.....	13.08	3.19	.57	.03	.10	.16	0	140	90	
November.....	46.11	15.32	4.8	.10	.51	.79	.01	189	123	
December.....	72.52	21.26	5.3	.09	.69	1.1	.02	176	109	
Cal. Year 1971	4,798.70	8,556.95	2,060	.03	23	439	7.1	2,000	660	
January....., 1972	48.29	11.97	1.9	.04	.39	.61	.01	130	92	
February.....	236.98	287.09	235	.14	9.9	15	.24	580	449	
March.....	552.9	740.86	284	.79	24	38	.62	572	496	
April.....	253	148.69	33	.36	5.0	7.6	.12	475	218	
May.....	397.6	120.3	24	1.4	3.9	6.2	.10	275	112	
June.....	994.9	2,863.1	1,850	2.3	95	147	2.4	2,350	1,070	
July.....	339	140.7	17	1.3	4.5	7.2	.12	257	154	
August.....	843	1,280.1	555	2.6	41	66	1.1	1,370	562	
September.....	258.1	91	6.3	1.6	3.0	4.7	.08	162	131	
Water Year 1972	4,055.48	5,723.58	1,850	.03	16	293	4.8	2,350	523	
October.....	344.2	228.4	55	1.7	7.4	12	.19	525	246	
November.....	628	387	42	5.2	13	20	.32	368	228	

05464137 FOURMILE CREEK NEAR TRARR, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acree feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
December.....	693.6	685.8	416	2.7	22	35	.57	592	366
Cal. Year 1972	5,589.57	6,985.01	1,850	.04	19	358	5.8	2,350	463
January.....1973	695.4	629.1	326	1.5	20	32	.53	549	335
February.....	643.6	714.2	454	1.4	26	37	.60	665	411
March.....	903	523.2	75	4.4	17	27	.44	356	215
April.....	2,426	2,559.4	845	1.9	85	131	2.1	920	391
May.....	1,190	1,314	329	4.0	42	67	1.1	1,450	409
June.....	736	854	148	5.8	28	44	.71	1,250	430
July.....	582.5	1,413.1	1,060	4.7	46	72	1.2	2,480	898
August.....	184.2	58.86	6.8	.58	1.9	3.0	.05	253	118
September.....	215.3	129.48	46	.25	4.3	6.6	.11	585	223
Water Year 1973	9,241.80	9,496.54	1,060	.25	26	487	7.9	2,480	381

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis					
			Concentration (mg/l)	Percent finer than indicated size, in millimeters	Suspended sediment discharge (tons per day)						
Mar. 2, 1970	395	.0	1280	28	49	57	68	85	97	100	SPWC
May 14,.....	69	11.0	3550	50	56	62	70	91	95	100	SPWC
Aug. 5,.....	21	17.0	1590	64	73	79	86	90	98	100	SPWC
Oct. 9, 1970	195	10.0	1650	40	44	64	79	94	94	98	SPWC

Miscellaneous samples collected at site but outside period of record.

Sept. 12, 1969	20	16.0	137			7.4					
Sept. 15,.....	18	20.0	77			3.7					
Sept. 18,.....	18	14.0	134			6.5					
Sept. 25,.....	18	13.0	132			6.3					

05464137 FOURMILE CREEK NEAR TRAEER, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size							Methods of analysis				
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
Mar. 25, 1970	11	2.0	1	96	97	98	99	99	99	100					SV
May 27,	13	21.0	1	13	18	32	86	98	100						S
Feb. 17, 1971	34	.0	1	6	12	58	97	100							S
May 25,	27	9.0	1	36	41	71	99	100							V
Jan. 4, 1972	.64	.0	1	19	20	26	81	96	99	100					SV
Apr. 4,	3.3	6.0	1	9	11	19	64	96	99	100					SV
May 3, 1973	38	8.5	1	92	98	99	99	100							V

IOWA RIVER BASIN

05464500 CEDAR RIVER AT CEDAR RAPIDS, IOWA

LOCATION.--Lat 41°53'14", long 91°40'01", in SE1/4 NW1/4 sec.28, T.83 N., R.7 W., Linn County, at Eighth Avenue in Cedar Rapids, 400 ft (122 m) downstream from gaging station, 2.7 mi (4.3 km) upstream from Prairie Creek, and at mile 112.7 (181.3 km) upstream from mouth of Iowa River.

DRAINAGE AREA.--6,510 mi² (16,861 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--11 years (1943-54), 887,300 tons (805,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 2,050 mg/l June 25, 1950; minimum daily, not determined. Sediment discharge: Maximum daily, 245,000 tons (222,000 tonnes) June 15, 1947; minimum daily, not determined.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)					
		Max.	Min.	Date	Date	Max.	Min.	Date	Date		
1944	1022	1,140	1	June 17	1	Jan. 20, 21	78,700	2	June 17	2	Jan. 20, 21
1945	1030	820	1	June 10	1	Jan. 31	73,700	2	Mar. 19	2	Jan. 31
1946	1050	1,680	4	July 1	4	Jan. 21-Feb. 3	53,300	12	Sept. 23	12	Jan. 3
1947	1162	1,700	1	June 15	1	Feb. 11	245,000	3	June 15	3	Feb. 11
1948	1162	1,230	10	Mar. 19	10	Nov. 17, Dec. 29, Feb. 16	89,550	18	Mar. 20	18	Feb. 16
1949	1162	1,000	4	June 25	4	Feb. 7	46,400	8	Mar. 7	8	Dec. 28
1950	1187	2,050	4	June 25	4	Feb. 4, 5	74,100	3	June 25	3	Feb. 4, 5
1951	1198	1,590	3	Feb. 27	3	Feb. 19	77,300	4	Feb. 27	4	Feb. 9, 11, 19
1952	1251	558	2	Mar. 11	2	Dec. 24, 27, Jan. 2	21,600	7	Apr. 4	7	Dec. 16
1953	1291	1,030	*	July 6	*		14,500	*	July 6	*	
1954	1351	1,380	*	June 23	*		87,400	*	June 25	*	

* Not determined

05464500 CEDAR RIVER AT CEDAR RAPIDS, ICWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum daily	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
October....1943	36,920	3,014	215	38	97	70	.46	2.5	70	30	
November.....	44,890	1,999	177	28	67	38	.31	1.7	38	17	
December.....	33,464	1,758			57		.27	1.5		20	
January....1944	27,720	2,946	1,030	2.0	95	153	.45	2.5	153	39	
February.....	50,870	26,910	8,130		927	600	4.1	22	600	196	
March.....	145,230	104,746	16,300	39	3,380	796	16	87	796	267	
April.....	141,760	61,144	4,360	689	2,040	322	9.4	51	322	160	
May.....	291,630	262,350	26,000	2,240	8,460	1,020	40	219	1,020	333	
June.....	316,220	441,180	78,700	1,450	14,700	1,140	68	368	1,140	517	
July.....	133,660	67,964	7,460	522	2,190	420	10	57	420	188	
August.....	69,120	17,582	1,670	249	567	200	2.7	15	200	94	
September....	50,190	8,411	403	197	280	83	1.3	7.0	83	62	
Water Year 1944	1,341,674	1,000,004	78,700		2,730	1,140	154	835	1,140	276	
October.....	41,890	5,193	273	81	168	62	.80	4.3	62	46	
November.....	34,940	2,944	198	25	98	61	.45	2.5	61	31	
December.....	25,304	435	30	4.0	14	10	.07	.36	10	6	
Cal. Year 1944	1,328,534	1,001,805	78,700		2,740	1,140	154	836	1,140	279	
January....1945	20,700	260	21	2.0	8.4	12	.04	.22	12	5	
February.....	37,150	3,544	1,000	3.0	126	116	.54	3.0	116	35	
March.....	392,910	391,025	73,700	147	12,600	640	60	326	640	369	
April.....	277,560	119,250	14,100	1,640	3,980	630	18	100	630	159	
May.....	248,610	114,448	13,900	459	3,690	430	18	96	430	171	
June.....	302,810	189,510	25,500	1,910	6,320	820	29	158	820	232	
July.....	102,620	32,747	5,270	319	1,060	310	5.0	27	310	118	
August.....	170,430	95,673	10,300	309	3,090	510	15	80	510	208	
September....	53,850	6,488	428	120	216	73	1.00	5.4	73	45	
Water Year 1945	1,708,774	961,517	73,700	2.0	2,630	820	148	803	820	208	
October.....	46,290	4,002	238	74	129	42	.61	3.3	42	32	
November.....	42,017	3,686	1,100	18	123	174	.57	3.1	174	33	
December.....	38,740	1,889	402	13	61	57	.29	1.6	57	18	
Cal. Year 1945	1,733,687	962,522	73,700	2.0	2,640	820	148	803	820	206	
January....1946	185,480	156,747	46,300	12	5,060	1,100	24	131	1,100	313	
February.....	107,160	16,172	3,050	20	577	170	2.5	13	170	56	
March.....	341,500	245,931	32,900	308	7,930	1,320	38	205	1,320	267	
April.....	100,560	15,681	1,600	133	523	105	2.4	13	105	58	

05464500 CEDAR RIVER AT CEDAR RAPIDS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acres-foot	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
May.....	73,160	8,287	1,110	129	267	1.3	6.9	82	42	
June.....	116,290	118,359	19,800	174	3,950	18	99	1,030	377	
July.....	82,310	106,771	49,800	183	3,440	16	89	1,680	480	
August.....	40,193	6,484	463	86	209	1.00	5.4	84	60	
September.....	128,776	128,347	53,300	108	4,280	20	107	1,540	369	
Water Year 1946	1,302,476	812,356	53,300	12	2,230	125	678	1,680	231	
October.....	88,390	25,407	8,710	103	820	3.9	21	492	106	
November.....	105,560	15,469	2,010	127	516	2.4	13	155	54	
December.....	53,347	2,810	244	29	91	.43	2.3	40	20	
Cal. Year 1946	1,422,726	846,465	53,300	12	2,320	130	707	1,680	220	
January.....	44,490	1,660	114	21	54	.25	1.4	36	14	
February.....	57,330	3,803	626	3.0	135	.58	3.2	68	25	
March.....	134,780	44,323	5,840	8.0	1,430	6.8	37	280	122	
April.....	287,360	227,370	35,300	1,240	7,580	35	190	951	293	
May.....	140,040	45,100	12,300	384	1,450	6.9	38	531	119	
June.....	702,480	1,484,620	245,000	5,520	49,500	228	1,240	1,700	783	
July.....	267,920	189,845	21,300	632	6,120	29	158	467	262	
August.....	56,220	9,272	535	139	299	1.4	7.7	86	61	
September.....	42,660	5,395	267	101	180	.83	4.5	66	47	
Water Year 1947	1,980,577	2,055,074	245,000	3.0	5,630	316	1,720	1,700	384	
October.....	36,163	4,567	247	66	147	.70	3.8	83	47	
November.....	43,470	3,021	207	26	101	.46	2.5	43	26	
December.....	39,515	2,747	361	30	89	.42	2.3	61	26	
Cal. Year 1947	1,852,428	2,021,723	245,000	3.0	5,540	311	1,690	1,700	404	
January.....	25,630	2,032	152	30	66	.31	1.7	54	29	
February.....	45,140	47,963	24,600	18	1,650	7.4	40	1,210	394	
March.....	422,130	637,242	89,600	433	20,600	98	532	1,230	559	
April.....	105,680	37,601	3,210	359	1,250	5.8	31	254	132	
May.....	118,250	48,775	3,470	330	1,570	7.5	41	284	153	
June.....	55,970	18,243	2,400	219	668	2.8	15	267	121	
July.....	45,832	10,881	1,640	54	351	1.7	9.1	204	88	
August.....	24,163	2,556	231	37	82	.39	2.1	73	39	
September.....	20,994	2,573	185	55	86	.40	2.1	79	45	
Water Year 1948	982,937	818,201	89,600	18	2,240	126	683	1,230	308	
October.....	23,334	2,001	202	30	65	.31	1.7	68	32	

05464500 CEDAR RIVER AT CEDAR RAPIDS, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Weighted mean
November.....	25,477	1,808	182	37	60	.28	1.5	57	26	
December.....	22,668	961	110	8.0	31	.15	.80	43	16	
Cal. Year 1948	935,268	812,636	89,600	8.0	2,220	125	678	1,230	322	
January....1949	48,830	6,557	1,040	13	212	1.0	5.5	161	50	
February.....	34,310	2,439	710	10	87	.37	2.0	73	26	
March.....	319,460	254,702	46,400	263	8,220	39	213	594	295	
April.....	182,820	52,721	10,800	302	1,760	8.1	44	237	107	
May.....	52,120	5,234	273	100	169	.80	4.4	59	37	
June.....	62,690	47,708	10,800	122	1,590	7.3	40	1,000	282	
July.....	52,117	19,448	3,780	99	627	3.0	16	460	138	
August.....	22,679	2,421	172	25	78	.37	2.0	58	40	
September....	18,165	1,845	108	31	62	.28	1.5	61	38	
Water Year 1949	864,670	397,845	46,400	8.0	1,090	61	332	1,000	170	
October.....	17,022	1,412	74	17	46	.22	1.2	56	31	
November.....	17,466	998	69	14	33	.15	.83	36	21	
December.....	15,116	863	65	7.0	28	.13	.72	37	21	
Cal. Year 1949	842,795	396,348	46,400	7.0	1,090	61	331	1,000	174	
January....1950	14,453	1,286	214	5.0	41	.20	1.1	132	33	
February.....	15,530	645	138	3.0	23	.10	.54	37	15	
March.....	309,340	267,854	43,000	14	8,640	41	224	1,220	321	
April.....	141,040	91,504	25,900	125	3,050	14	76	963	240	
May.....	130,770	148,912	20,000	514	4,800	23	124	1,010	422	
June.....	160,550	341,418	74,100	442	11,400	52	285	2,050	788	
July.....	66,100	22,459	4,880	190	724	3.4	19	271	126	
August.....	40,635	8,914	701	149	288	1.4	7.4	118	81	
September....	41,560	19,792	8,660	103	660	3.0	17	444	176	
Water Year 1950	969,582	906,057	74,100	3.0	2,480	139	756	2,050	346	
October.....	30,547	4,390	253	68	142	.67	3.7	78	53	
November.....	19,433	1,524	130	24	51	.23	1.3	60	29	
December.....	16,822	1,110	73	13	36	.17	.93	43	24	
Cal. Year 1950	986,780	909,808	74,100	3.0	2,490	140	759	2,050	341	
January....1951	14,890	537	46	5.0	17	.08	.45	36	13	
February.....	67,780	130,291	77,300	4.0	4,650	20	109	1,590	712	
March.....	279,000	186,095	27,700	97	6,000	29	155	658	247	
April.....	704,800	269,870	35,100	1,760	9,000	41	225	247	142	

05464500 CEDAR RIVER AT CELAR RAPIDS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
May.....	323,600	169,721	49,100	459	5,470	26	142	540	194		
June.....	262,340	259,710	51,300	548	8,660	40	217	1,170	367		
July.....	312,840	216,440	22,600	1,090	6,980	33	181	716	256		
August.....	164,870	64,198	10,100	468	2,070	9.9	54	284	144		
September.....	121,630	19,172	2,000	171	639	2.9	16	100	58		
Water Year 1951	2,318,552	1,323,058	77,300	4.0	3,620	203	1,100	1,590	211		
October.....	113,050	21,511	2,150	251	694	3.3	18	123	71		
November.....	92,360	10,111	784	97	337	1.6	8.4	78	41		
December.....	68,498	3,714	367	7.0	120	.57	3.1	43	20		
Cal. Year 1951	2,525,658	1,351,370	77,300	4.0	3,700	208	1,130	1,590	198		
January.....	93,960	11,350	2,220	10	366	1.7	9.5	120	45		
February.....	121,710	11,354	700	88	391	1.7	9.5	53	35		
March.....	247,150	121,551	16,000	230	3,920	19	101	558	182		
April.....	330,580	113,910	21,600	1,180	3,800	17	95	340	128		
May.....	135,230	42,346	8,200	435	1,370	6.5	35	525	116		
June.....	103,530	41,383	5,850	491	1,380	6.4	35	462	148		
July.....	89,290	21,061	1,250	162	679	3.2	18	114	87		
August.....	45,620	7,584	365	127	245	1.2	6.3	87	62		
September.....	30,475	3,731	190	87	124	.57	3.1	67	45		
Water Year 1952	1,471,453	409,606	21,600	7.0	1,120	63	342	558	103		
October.....	23,847	2,480	.....	.....	80	.38	2.1	.....	39
November.....	23,459	2,543	295	.....	85	.39	2.1	96	40	
December.....	21,724	2,215	405	.....	71	.34	1.8	184	38	
Cal. Year 1952	1,266,575	381,508	21,600	.....	1,040	59	318	558	112	
January.....	22,858	2,511	.....	.....	81	.39	2.1	.....	41
February.....	73,422	42,110	12,300	.....	1,500	6.5	35	859	212	
March.....	129,360	49,746	7,350	.....	1,600	7.6	42	388	142	
April.....	108,810	19,979	1,010	.....	666	3.1	17	108	68	
May.....	124,760	54,684	6,140	.....	1,770	8.4	46	607	163	
June.....	100,380	71,774	8,140	.....	2,390	11	61	667	265	
July.....	93,490	73,558	14,500	.....	2,370	11	61	1,030	291	
August.....	142,000	85,561	14,300	.....	2,760	13	71	495	223	
September.....	29,189	4,420	.....	.....	147	.68	3.7	.....	56
Water Year 1953	893,299	411,781	14,500	.....	1,130	63	344	1,030	171	
October.....	22,138	4,134	641	.....	133	.64	3.5	310	69	

05464500 CEDAR RIVER AT CEDAR RAPIDS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi.	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
November	22,587	2,430			81	.37	2.0		40	
December	22,126	1,138			37	.17	.95		19	
Cal. Year 1953	891,120	412,245	14,500		1,130	63	344	1,030	171	
January	15,260	1,041			34	.16	.87		25	
February	20,928	1,243			44	.19	1.0		22	
March	26,283	3,167			100	.48	2.6		44	
April	38,764	14,342	3,110		478	2.2	12	478	137	
May	102,540	84,582	14,300	206	2,730	13	71	254	306	
June	290,990	460,640	87,400	941	15,400	71	384	1,380	586	
July	100,510	29,233	3,500		943	4.5	24	193	108	
August	83,480	50,011	10,400		1,610	7.7	42	482	222	
September	61,100	13,296			443	2.0	11		81	
Water Year 1954	806,706	665,197	87,400		1,820	102	555	1,380	305	

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment		Percent finer than indicated size, in millimeters	Methods of analysis			
			Concentration (mg/l)	Suspended sediment discharge (tons per day)					
June 23, 1954	14400	945	945	36700	38	91	95	99	SPWC
June 25,	36900	765	765	76200	41	89	92	99	SPWC
June 26,	40900	462	462	51000	35	85	87	98	SPWC
Apr. 8, 1965	52700	440	440	63000					
Apr. 9,	63300	5.5	340	58000					
Apr. 10,	66800		360	65000					
Apr. 12,	54200	6.5	480	70000					

Miscellaneous samples collected at site but outside period of record.

IOWA RIVER BASIN

05464640 PRAIRIE CREEK AT FAIRFAX, IOWA

LOCATION.--Lat 41°55'22", long 91°04'02", in SE1/4 SW1/4 sec. 9, T.82N., R.8W., Linn County, on right bank 12 ft (4 m) upstream from bridge on State Highway 149 at west side of Fairfax, and 10.7 mi (17.2 km) upstream from mouth.

DRAINAGE AREA.--178 mi² (461 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Dec. 28, 1971	28	.0	57	4.3
Jan. 26, 1972	18	.0	27	1.3
Feb. 24,.....	16	.0	9	.39
Mar. 27,.....	71		72	14
Apr. 27,.....	174	18.0	255	120
May 30,.....	115	16.0	271	84
June 21,.....	124	18.0	182	61
July 27,.....	429	19.0	823	953
Aug. 24,.....	71	22.0	96	18
Sept.27,.....	44	12.5	82	9.7
Oct. 24, 1972	218	6.0	474	279
Dec. 26,.....	73	.0	164	32
Jan. 23, 1973	134	5.0	116	42
Feb. 21,.....	91	.0	107	26
Mar. 27,.....	200	8.0	172	93
June 22,.....	172	21.0	175	81
July 26,.....	49	22.0	34	4.5
Aug. 31,.....	15	23.5	47	1.9

SKUNK RIVER BASIN
05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA

LOCATION.--Lat 41°18'03", Long 92°12'16", in NE1/4 SE1/4 sec.14, T.75N., R.12W., Keokuk County, on right bank 20 ft (6 m) downstream from bridge on State Highway 149, 1.2 mi (1.9 km) downstream from Cedar creek, 2.2 mi (3.5 km) south of Sigourney, 4.0 mi (6.4 km) upstream from Bridge Creek, and 16.2 mi (26.1 km) upstream from confluence with South Skunk River.

DRAINAGE AREA.--730 mi² (1,890 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (LEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 13, 1946	2620		2840	20100
June 4, 1965	458	20.0	1300	1600
Aug. 5,.....	63	25.5	41	7.0
Sept. 7,.....	1870	14.5	2600	13000
Sept.21,.....	11300	20.5	370	11000
Sept.22,.....	6810		190	3500
Oct. 7, 1965	577	15.5	190	296
Nov. 4,.....	209	10.5	21	12
Dec. 9,.....	184	3.0	48	24
Jan. 6, 1966	701	.5	220	416
Mar. 10,.....	250	2.0	400	270
Apr. 7,.....	279	7.0	170	128
May 2,.....	329	14.0	180	160
June 7,.....	516	20.0	310	432
July 14,.....	268	30.0	180	130
Aug. 11,.....	91	20.0	74	18
Sept.15,.....	23	16.0	73	4.5
Cct. 7, 1966	17	9.0	23	1.1
Nov. 10,.....	36	5.5	160	16
Dec. 8,.....	171	1.0	74	34
Mar. 13, 1967	83	2.0	70	16
Apr. 6,.....	112	13.5	280	85
June 19,.....	1400	21.0	140	529
July 17,.....	61	25.5	140	23
July 19,.....	56	22.0	160	24
Aug. 21,.....	38	19.5	160	16
Sept.17,.....	27	20.5	150	11
Cct. 16, 1967	90	12.0	350	85
Nov. 20,.....	34	3.0	47	4.3
Dec. 20,.....	56		23	3.5

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Feb. 19, 1968	23	1.0	23	1.4
Mar. 18,.....	74	9.0	90	18
Apr. 15,.....	159	11.0	260	112
May 20,.....	75	14.0	77	16
June 10,.....	29	26.0	130	10
July 15,.....	18	26.0	170	8.3
Aug. 19,.....	15	23.0	145	5.9
Sept. 16,.....	61	19.0	190	31
Cct. 21, 1968	24	11.0	87	5.6
Nov. 18,.....	44	3.0	30	3.6
Dec. 16,.....	8.8	.0	19	.45
Feb. 17, 1969	129	.0	13	4.5
Mar. 17,.....	500	1.0	663	895
Apr. 21,.....	528	11.0	257	366
May 19,.....	326	15.0	63	55
June 16,.....	2900	23.0	488	3820
Aug. 18,.....	196	23.0	193	102
Sept. 15,.....	84	20.0	108	24
Oct. 21, 1969	210	12.0	178	101
Nov. 17,.....	83	6.0	13	2.9
Dec. 15,.....	43	.0	26	3.0
Feb. 16, 1970	111	.0	12	3.6
Mar. 16,.....	238	1.0	32	21
Apr. 21,.....	873		53	125
May 20,.....	750	20.0	23	47
June 24,.....	6710	24.0	469	8500
Sept. 17,.....	5740	15.5	604	9360
Cct. 20, 1970	645	10.5	180	313
Dec. 1,.....	429	5.0	79	92
Jan. 12, 1971	210	.0	14	7.9
Mar. 4,.....	924	.5	328	818
Apr. 5,.....	253	5.0	116	79
May 17,.....	132	11.0	65	23
June 21,.....	150	25.0	372	151
Aug. 2,.....	60	21.5	113	18
Cct. 27, 1971	18	12.0	100	4.9
Dec. 6,.....	48	3.0	16	2.1

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Jan. 17, 1972	25	.0	13	.88
Mar. 1,.....	1690	.0	201	917
Apr. 10,.....	135	3.5	57	21
May 23,.....	333	21.0	131	118
June 28,.....	354	23.0	700	669
Aug. 17,.....	399	28.0	472	508
Sept. 18,.....	634	19.5	206	353
Jan. 16, 1973	413	.5	94	105
Feb. 20,.....	537	.5	64	93
May 7,.....	1580	5.0	2500	10700
June 18,.....	805	22.0	727	1580
July 30,.....	422	12.0	492	561

DES MOINES RIVER BASIN

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA

LOCATION.--Lat 41°40'50", Long 93°40'07", near center of sec.5, T.79 N., R.24 W., Polk County, near center of span on upstream side of bridge on county highway F42, 30 ft (9 m) upstream from gaging station, 2.0 mi (3.2 km) west of Saylorville, 2.1 mi (3.4 km) downstream from Rock Creek, 2.4 mi (3.9 km) upstream from Beaver Creek, and at mile 211.6 (340.5 km).

DRAINAGE AREA.--5,841 mi² (15,128 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--12 years, 1,137,000 tons (1,031,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 5,400 mg/l May 14, 1970; minimum daily, not determined. Sediment discharge: Maximum daily, 148,000 tons (134,000 tonnes) June 12, 1966; minimum daily, 1 ton (0.91 tonne) Jan. 8, 1965, Feb. 8-12, 23, 1967.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1962	1943	4,290	7	May 29	Feb. 3	64,900	8	Mar. 26	Feb. 3
1963	1949	2,600	30	Apr. 29	Feb. 14	43,000	3	May 13	Feb. 14
1964	1956	4,600	*	June 23		66,000	6	June 23	Dec. 26
1965	1963	1,600	1	May 27	Jan. 8	48,000	1	Apr. 10, May 27	Jan. 8
1966	1993	4,760	7	June 12	Feb. 1	148,000	6.8	June 12	Feb. 1
1967	2013	4,580	4	June 13	Feb. 6-10	72,900	1	June 8	Feb. 8-12, 23
1968	2094	1,850	10	June 25	Nov. 2	18,800	3	June 30	Feb. 23
1969	2144	2,320	7	Mar. 21	Mar. 7	54,600	11	Mar. 22	Mar. 7
1970	2154	5,400	7	May 14	Feb. 22	130,000	5.7	May 14	Feb. 22
1971	2164	3,570	20	Mar. 9	Feb. 11	66,000	9.5	Mar. 18	Sept. 22
1972	+	1,100	6	Sept. 28	Feb. 9, 23, 24	28,100	2.9	Aug. 8	Oct. 18
1973	+	2,700	28	Feb. 24	Jan. 30	55,300	100	Mar. 5	Sept. 17

* Not determined
 + Water Resources Data for Iowa, Part 2, Water Quality Records

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)					Tons per sq mi	Acres	Concentration (mg/)	
			Maximum	Minimum	Mean	Maximum daily	Weight mean				
										Weight mean	
October....1961	50,670	59,914	14,000	272	1,930	10	50	1,690	43		
November.....	40,590	12,675	1,140	174	423	2.2	11	255	11		
December.....	23,450	3,665	252	29	118	.63	3.1	88	5		
January....1962	14,380	919	56	11	30	.16	.77	37	2		
February.....	15,630	1,919	142	8.0	68	.33	1.6	82	4		
March.....	121,470	396,728	64,900	19	12,800	68	331	2,480	1,21		
April.....	475,670	346,870	30,900	4,320	11,600	59	290	435	27		
May.....	117,440	155,749	56,300	787	5,020	27	130	4,290	49		
June.....	94,070	88,268	8,260	805	2,940	15	74	600	34		
July.....	191,820	318,100	41,700	821	10,300	54	266	3,850	61		
August.....	49,026	31,179	5,920	108	1,010	5.3	26	430	23		
September....	198,330	183,406	31,700	330	6,110	31	153	1,330	34		
Water Year 1962	1,392,546	1,599,392	64,900	8.0	4,380	274	1,340	4,290	42		
October.....	58,440	25,220	3,500	220	814	4.3	21	480	16		
November.....	27,583	3,205	200	51	107	.55	2.7	61	4		
December.....	14,106	1,859	96	20	60	.32	1.6	81	4		
Cal. Year 1962	1,377,965	1,553,422	64,900	8.0	4,260	266	1,300	4,290	41		
January....1963	7,835	565	34	8.0	18	.10	.47	43	2		
February.....	6,910	300	27	3.0	10	.05	.25	34	1		
March.....	66,750	100,350	13,000	8.0	3,240	17	84	980	55		
April.....	46,930	80,040	40,000	130	2,670	14	67	2,600	63		
May.....	124,940	262,400	43,000	1,000	8,460	45	219	2,200	77		
June.....	91,590	140,680	23,000	600	4,690	24	117	1,400	56		
July.....	120,900	164,800	14,000	700	5,320	28	138	1,000	50		
August.....	71,730	94,940	39,000	390	3,060	16	79	2,400	49		
September....	18,783	4,002	360	57	133	.69	3.3	140	7		
Water Year 1963	656,497	878,361	43,000	3.0	2,410	150	733	2,600	49		
October.....	11,886	1,658	99	26	53	.28	1.4	91	5		
November.....	9,510	1,389	84	19	46	.24	1.2	81	5		
December.....	4,992	585	53	6.0	19	.10	.49	98	4		
Cal. Year 1963	582,756	851,709	43,000	3.0	2,330	146	711	2,600	54		
January....1964	4,611	391	33	7.0	13	.07	.33	87	3		
February.....	5,835	488	29	8.0	16	.08	.41	86	3		
March.....	9,744	1,435	120	21	46	.25	1.2	100	5		
April.....	67,942	137,494	24,000	94	4,580	24	115	2,400	75		

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Maximum		Daily loads (tons)		Mean	Tons per sq mi	Acres	Concentration (mg/)		
			Maximum	Minimum	Minimum	Maximum				Maximum	daily	Weight mean
May.....	137,570	229,500	31,000	2,000	7,400	39	192	1,700	61			
June.....	54,870	132,720	66,000	420	4,420	23	111	4,600	89			
July.....	22,662	16,885	5,100	57	545	2.9	14	1,400	27			
August.....	51,633	82,420	22,000	110	2,660	14	69	1,400	59			
September.....	121,260	164,360	19,000	340	5,480	28	137	1,200	50			
Water Year 1964	502,515	769,325	66,000	6.0	2,100	132	642	4,600	56			
October.....	57,170	22,730	2,900	200	733	3.9	19	290	14			
November.....	25,308	4,197	260	39	140	.72	3.5	100	3			
December.....	17,252	1,430	140	8.0	46	.24	1.2	85	3			
Cal. Year 1964	575,857	794,050	66,000	7.0	2,170	136	663	4,600	51			
January.....	10,054	327	55	1.0	11	.06	.27	75	1			
February.....	16,973	1,326	220	3.0	47	.23	1.1	120	2			
March.....	87,270	40,683	8,100	17	1,310	7.0	34	490	17			
April.....	693,410	632,400	48,000	8,100	21,100	108	528	910	33			
May.....	245,660	252,100	48,000	2,900	8,130	43	210	1,600	38			
June.....	209,840	239,300	37,000	1,500	7,980	41	200	970	42			
July.....	51,200	28,451	2,300	91	918	4.9	24	360	20			
August.....	14,747	2,240	160	30	72	.38	1.9	92	5			
September.....	143,610	202,200	24,000	42	6,740	35	169	1,100	52			
Water Year 1965	1,572,494	1,427,384	48,000	1.0	3,910	244	1,190	1,600	33			
October.....	177,700	109,620	16,000	630	3,540	19	91	370	22			
November.....	52,690	8,491	630	38	283	1.5	7.1	120	6			
December.....	51,250	15,614	1,600	34	504	2.7	13	310	11			
Cal. Year 1965	1,754,404	1,532,752	48,000	1.0	4,200	262	1,280	1,600	32			
January.....	29,140	13,080.2	3,400	8.0	422	2.2	11	890	16			
February.....	35,650	49,380.5	23,000	6.8	1,760	8.5	41	2,880	51			
March.....	58,060	72,150	16,000	180	2,330	12	60	1,410	46			
April.....	120,290	170,800	23,000	1,300	5,690	29	143	1,400	52			
May.....	86,060	113,070	18,000	500	3,650	19	94	1,650	48			
June.....	121,250	435,600	148,000	1,000	14,500	75	364	4,760	1,330			
July.....	34,786	28,151	7,900	87	908	4.8	23	1,270	13			
August.....	13,081	4,615	460	45	149	.79	3.9	210	4			
September.....	5,649	674	39	13	22	.12	.56	80	4			
Water Year 1966	785,606	1,021,245.7	148,000	6.8	2,800	175	852	4,760	48			
October.....	4,848	1,423	79	6.0	46	.24	1.2	130	10			
November.....	5,687	924	71	9.0	31	.16	.77	140	6			

054E1650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/)		
			Maximum	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weight mean
				Minimum	Maximum						Minimum
December.....	3,965	515	85	7.0	17	.09	.43	210	4	
Cal. Year 1966	518,466	890,382.7	148,000	6.0	2,440	152	743	4,760	63	
January....1967	3,626	143	7.0	2.0	4.6	.02	.12	26	1	
February.....	3,330	106	20	1.0	3.0	.02	.05	62	1	
March.....	28,098	16,085	1,200	2.0	519	2.8	13	490	21	
April.....	40,718	25,570	2,200	320	852	4.4	21	440	23	
May.....	22,210	8,380	1,500	110	270	1.4	7.0	380	14	
June.....	265,734	614,540	72,900	140	20,500	105	513	4,580	85	
July.....	70,623	64,300	14,600	240	2,070	11	54	820	33	
August.....	15,721	6,569	1,720	40	212	1.1	5.5	530	15	
September.....	9,263	1,908	200	24	64	.33	1.6	130	7	
Water Year 1967	473,823	740,463	72,900	1.0	2,030	127	618	4,580	57	
October.....	5,256	1,002	78	18	32	.17	.84	170	7	
November.....	4,789	563	37	6.0	19	.10	.47	64	4	
December.....	3,926	274	17	5.0	8.8	.05	.23	49	2	
Cal. Year 1967	473,334	739,440	72,900	1.0	2,030	127	617	4,580	57	
January....1968	2,318	221	20	4.0	7.1	.04	.18	91	3	
February.....	3,442	292	23	3.0	10	.05	.24	54	3	
March.....	6,873	839	53	6.0	27	.14	.70	75	4	
April.....	13,051	12,319	3,350	23	411	2.1	10	1,250	35	
May.....	10,933	3,277	340	37	106	.56	2.7	190	11	
June.....	30,873	88,192	18,800	37	2,940	15	74	1,850	1,06	
July.....	54,186	67,360	10,600	310	2,170	12	56	1,060	46	
August.....	22,961	14,707	2,230	53	474	2.5	12	730	23	
September.....	11,832	5,442	860	42	181	.93	4.5	340	17	
Water Year 1968	170,480	194,488	18,800	3.0	531	33	162	1,850	42	
October.....	123,970	182,631	24,200	459	5,890	31	152	1,300	54	
November.....	102,190	60,785	3,990	443	2,030	19	51	294	22	
December.....	37,310	6,685	1,140	39	216	1.1	5.6	248	6	
Cal. Year 1968	419,939	442,750	24,200	3.0	1,210	76	370	1,850	39	
January....1969	21,240	2,042	152	31	66	.35	1.7	74	3	
February.....	13,570	665	89	13	23	.11	.56	70	1	
March.....	194,830	388,214	54,600	11	12,500	66	324	2,320	73	
April.....	474,920	336,280	19,900	5,830	11,200	58	281	620	26	
May.....	188,640	155,170	13,700	1,960	5,010	27	130	800	30	
June.....	145,130	307,070	35,700	1,330	10,200	53	256	2,000	78	

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres	Concentration (mg/)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weight mean
			Maximum	Minimum							
July.....	453,470	442,170	31,700	4,080	14,300	76	369	1,020	36		
August.....	100,680	86,857	18,100	353	2,800	15	72	540	32		
September.....	32,749	14,178	1,070	111	473	2.4	12	278	16		
Water Year 1969	1,888,699	1,982,747	54,600	11	5,430	339	1,650	2,320	38		
October.....	18,242	3,376	208	69	109	.58	2.8	103	6		
November.....	22,349	5,055	521	83	169	.87	4.2	208	8		
December.....	13,709	2,156	128	43	70	.37	1.8	95	5		
Cal. Year 1969	1,679,529	1,743,233	54,600	11	4,780	298	1,460	2,320	38		
January.....	9,590	996	58	17	32	.17	.83	60	3		
February.....	9,975	944.2	121	5.7	34	.16	.79	59	3		
March.....	65,000	50,821	11,100	101	1,640	8.7	42	1,080	29		
April.....	84,550	76,781	5,770	403	2,560	13	64	580	33		
May.....	155,650	456,376	130,000	996	16,000	85	414	5,400	1,18		
June.....	72,170	70,871	7,740	679	2,360	12	59	731	36		
July.....	22,847	7,206	631	90	232	1.2	6.0	196	11		
August.....	14,784	7,626	1,780	41	246	1.3	6.4	619	19		
September.....	8,208	1,030.5	103	9.5	34	.18	.86	98	4		
Water Year 1970	497,074	723,238.7	130,000	5.7	1,980	124	604	5,400	53		
October.....	18,729	6,496	615	16	210	1.1	5.4	323	12		
November.....	35,492	19,948	3,850	47	665	3.4	17	1,140	20		
December.....	26,910	6,020	965	49	194	1.0	5.0	230	8		
Cal. Year 1970	523,905	745,115.7	130,000	5.7	2,040	128	622	5,400	52		
January.....	12,860	2,181	117	36	70	.37	1.8	103	6		
February.....	63,830	73,467	36,900	12	2,620	13	61	2,400	42		
March.....	251,890	592,650	66,000	1,220	19,100	101	495	3,570	87		
April.....	200,560	333,030	36,000	1,870	11,100	57	278	1,440	61		
May.....	72,390	59,088	4,370	415	1,910	10	49	639	30		
June.....	117,520	128,640	15,900	1,040	4,290	22	107	675	40		
July.....	107,000	132,718	20,700	523	4,280	23	111	915	45		
August.....	16,163	4,518	1,070	25	146	.77	3.8	380	10		
September.....	6,062	621.5	38	9.5	21	.11	.52	52	3		
Water Year 1971	929,406	1,359,377.5	66,000	9.5	3,720	233	1,130	3,570	54		
October.....	6,375	563.1	34	2.9	18	.10	.47	59	3		
November.....	22,870	4,761	344	37	159	.82	4.0	107	7		
December.....	19,551	4,763	347	62	154	.82	4.0	214	9		

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acre-feet	Concentration (mg/)	
			Daily loads (tons)		Mean	Maximum	Minimum	Maximum			Daily	Weight mean
			Maximum	Minimum								
Cal. Year 1971	897,071	1,337,000.60	66,000	2.9	3,660	229	1,120	3,570	55			
January.... 1972	9,890	2,587	168	13	83	.44	2.2	189	9			
February.....	7,005	557.5	202	3.2	19	.10	.47	107	3			
March.....	69,580	58,656	8,030	246	1,890	10	49	855	31			
April.....	42,140	14,612	2,030	261	487	2.5	12	360	12			
May.....	150,950	205,670	17,100	2,000	6,630	35	172	1,060	50			
June.....	123,340	161,995	7,620	985	3,400	17	85	425	30			
July.....	91,500	89,520	12,300	553	2,890	15	75	620	36			
August.....	125,790	161,251	28,100	347	5,200	28	135	890	47			
September.....	44,779	53,438	12,200	203	1,780	9.1	45	1,100	44			
Water Year 1972	713,770	698,373.60	28,100	2.9	1,910	120	583	1,100	36			
October.....	90,190	103,464	14,400	726	3,340	18	86	907	42			
November.....	148,280	209,360	18,900	1,330	6,980	36	175	980	52			
December.....	57,120	18,649	2,430	275	602	3.2	16	257	12			
Cal. Year 1972	960,564	1,019,759.5	28,100	3.2	2,790	175	851	1,100	39			
January.... 1973	82,690	35,053	4,460	197	1,130	6.0	29	413	15			
February.....	80,510	118,358	18,200	239	4,230	20	99	2,700	54			
March.....	414,510	703,610	55,300	6,970	22,700	120	587	1,720	62			
April.....	319,690	305,150	32,700	3,700	10,200	52	255	1,750	35			
May.....	267,710	315,220	25,300	2,080	10,200	54	263	705	43			
June.....	185,530	208,310	19,300	2,700	6,940	36	174	572	41			
July.....	101,210	129,113	15,600	577	4,160	22	108	1,080	47			
August.....	28,925	22,933	3,860	107	740	3.9	19	1,000	29			
September.....	46,844	80,362	25,200	100	2,680	14	67	1,420	63			
Water Year 1973	1,823,209	2,249,582	55,300	100	6,160	385	1,880	2,700	45			

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment										Methods of analysis		
			Concentration (mg/L)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters										
Apr. 29, 1963	4060	14.0	3600	39500	53	62	72	88	95	96	98	100	100	100	SPWC
Apr. 30,	4900	14.5	2800	37000	32	39	56	70	82	92	96	99	100	100	SPWC
May 13,	7100	15.5	3600	69000	21	42	47	65	83	92	95	98	100	100	SPWC
May 13,	7100	15.5	3600	69000	5	16	32	59	81						SPN
June 5,	6170	25.0	1200	20000	39	55	65	76	90	91	96	99	100	100	SPWC
June 5,	6170	25.0	1200	20000	13	28	41	68	82						SPN
Apr. 3, 1964	980	6.5	4400	11600	49	72	85	93	95	99	100	100	100	100	VPWC
Apr. 15,	3760	14.5	2200	22300	43	57	76	81	92	96	99	100	100	100	VPWC
Apr. 27,	3460	16.5	3200	29900	36	50	81	78	98	99	100	100	100	100	VPWC
Apr. 27,	3460	16.5	3200	29900	18	35	35	59	88	95	100	100	100	100	VPWC
Apr. 30,	5570	11.0	540	7460	30	35	40	47	62	81	92	99	100	100	VPWC
May 7,	5120	20.5	1000	17600	38	50	50	64	89	95	100	100	100	100	VPWC
May 8,	6500	20.0	5000	92100	50	58	86	94	99	99	100	100	100	100	VPWC
June 23,	6820	22.0	1500	4740	55	63	41	45	60	89	95	100	100	100	VPWC
July 8,	1170	29.5	1100	22800	41	45	45	55	80	91	99	100	100	100	VPWC
Aug. 2,	7660	26.5	770	15300	36	36									VPWC
Sept. 13,	7380	20.0													VPWC
Apr. 6, 1965	29400	4.5	300	23800	62	73	84	84	97	100	100	100	100	100	VPWC
Sept. 10,	2900	20.0	930	7280	35	46	77	79	87	98	100	100	100	100	VPWC
June 10, 1967	11700	20.5	1910	60300	44	52	60	70	84	97	99	100	100	100	VPWC
Apr. 23, 1968	992		1870	5010	50	56	76	86	97	99	99	99	100	100	VPWC
June 13, 1969	5420	20.0	1150	16800	34	45	52	71	88	95	96	100	100	100	VPWC
June 27,	8260	23.0	2200	49100	46	53	57	71	88	95	96	100	100	100	VPWC
May 13, 1970	6950	21.0	8370	157000	43	51	60	80	93	96	100	100	100	100	VPWC
May 18,	13700	19.5	608	22500	36	40	47	51	60	70	79	96	100	100	VPWC
Feb. 25, 1971	5700	3.0	4770	73400	29	33	40	58	81	98	100	100	100	100	VPWC

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
Apr. 19, 1965	20900		5		0	6	14	47	70	80	86	94	100		S
July 5, 1967	3540		4	0	1	3		55	78	90	100				S
Aug. 19, 1969	1620		4	1	2	13	44	84	91	100					S
Mar. 30, 1970	1560	3.0	3	1	2	16	64	79	85	89	97	100			S
Sept. 30,	284	18.5	3	1	3	17	48	76	91	96	100				S
May 25, 1971	2500	13.0	4	5	9	31	65	87	94	99					SV
July 7,	9270	22.0	3		1	7	42	79	86	91	98	100			SV
Mar. 16, 1972	2810	2.0	2	28	46	55	83	96	98	100					SV
Apr. 18,	1280	13.0	3		1	8	51	85	93	98	100				SV
July 12,	2120		2	7	50	88	98	100							V
Oct. 4, 1972	2660	18.0	3	5	22	50	93	100							V
Nov. 8,	7530	5.5	3	0	3	10	51	83	90	97	100				SV
Apr. 13, 1973	7880	3.5	3	0	1	11	51	85	89	93	93				SV
May 1,	6360	14.0	4	2	13	49	62	72	86	96	100				SV
July 26,	1680	19.5	4	2	4	12	34	55	65	86	97				SV

DES MOINES RIVER BASIN
 05482000 DES MOINES RIVER AT DES MOINES, IOWA

LOCATION.--Lat 41°37'39", long 93°38'41", in NE1/4 sec.28, T.79 N., R.24 W., Polk County, at Euclid Avenue Bridge in Des Moines, 2.1 mi (3.4 km) upstream from gaging station, 4.9 mi (7.9 km) upstream from Paccoon River, and 2.4 mi (3.9 km) downstream from Beaver Creek. Prior to November 1954 at gaging station 2.1 mi (3.4 km) downstream.

DRAINAGE AREA.--6,245 mi² (16,170 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--6 years (1955-61), 645,000 tons (585,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 5,900 mg/l June 16, 1957; minimum daily, not determined. Sediment discharge: Maximum daily, 99,000 tons (89,800 tonnes) June 16, 1957; minimum daily, not determined.

REMARKS.--No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff. Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1956	1451	2,250	*	May 31	5,510	*	May 31	*	
1957	1521	5,900	*	June 16	99,000	*	June 16	*	
1958	1572	4,200	7	Feb. 2	51,400	5	July 3	Feb. 2	
1959	1643	3,100	*	May 21	88,000	*	May 31	*	
1960	1743	2,620	10	Feb. 25, 26	68,200	13	May 6	Mar. 11	
1961	1883	1,690	15	Aug. 3	50,000	6	Mar. 30	Feb. 2, 10, 13	

* Not determined

05482000 DES MOINES RIVER AT DES MOINES, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment										Concentration (mg/l)	
		Load (tons)	Daily loads (tons)		Mean	Tons per sq mi	Acres feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum									
April.....1948	85,590	85,380	7,700	404	2,850	14	71	957	369				
May.....	69,800	44,815	3,400	177	1,450	7.2	37	410	238				
June.....	21,783	9,112	2,460	84	304	1.5	7.6	686	155				
July.....	26,570	12,359	2,630	82	399	2.0	10	566	172				
August.....	13,105	3,814	569	24	123	.61	3.2	251	108				
September.....	5,057	1,319	99	19	44	.21	1.1	155	97				
April.....1949	177,510	156,632	16,300	932	5,220	25	131	614	327				
May.....	52,490	10,513	779	93	339	1.7	8.8	140	74				
June.....	34,566	7,776	480	78	259	1.2	6.5	133	83				
July.....	19,323	3,746	510	13	121	.60	3.1	122	72				
August.....	14,234	2,717	326	19	88	.44	2.3	185	71				
November...1954	48,010	16,793			560	2.7	14		130				
December.....	25,634	3,378			109	.54	2.8		49				
January.....1955	16,172	749			24	.12	.63		17				
February.....	18,983	4,500	1,510		160	.72	3.8	249	88				
March.....	54,211	31,056		20	1,000	5.0	26		212				
April.....	78,860	127,780	21,300	321	4,260	20	107	2,530	600				
May.....	65,480	64,982	6,100	292	2,100	10	54	1,130	368				
June.....	49,000	52,688	5,320	142	1,760	8.4	44	856	398				
July.....	44,512	152,023	59,100		4,900	24	127	3,840	1,260				
August.....	4,368	408.4			13	.07	.34		35				
September.....	2,517	116.9			3.9	.02	.10		17				
October.....	3,598	229.4			7.4	.04	.19		24				
November.....	2,361	153			5.1	.02	.13		24				
December.....	1,785	184.5			6.0	.03	.15		38				
Cal..Year 1955	341,847	434,870.20	59,100		1,190	70	363	3,840	471				
January.....1956	1,883	187.1			6.0	.03	.16		37				
February.....	1,919	206.8			7.1	.03	.17		40				
March.....	12,533	3,115	683		100	.50	2.6	220	92				
April.....	15,257	4,025	578	17	134	.64	3.4	203	98				
May.....	13,328	11,619	5,510	21	375	1.9	9.7	2,250	323				
June.....	10,152	10,855	2,690	19	362	1.7	9.1	1,320	396				
July.....	6,829	1,517	260	16	49	.24	1.3	320	82				
August.....	7,195	1,783	257	15	58	.29	1.5	228	92				
September.....	3,442	679.1	130	3.1	23	.11	.57	203	73				
Water Year 1956	80,282	34,553.90	5,510		94	5.5	29	2,250	159				

05482000 DES MOINES RIVER AT DES MOINES, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment										Concentration (mg/l)				
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Daily							
			Maximum	Minimum						Maximum	Weighted mean						
October.....	2,085	338.5	46	11	0.05	0.28	130	60									
November.....	3,532	237.6	14	7.9	0.04	0.20	49	25									
December.....	2,671	112	4.8	3.6	0.02	0.09	25	16									
Cal. Year 1956	80,826	34,675.10	5,510	95	5.6	29	2,250	159									
January.....	2,015	145.8	8.1	4.7	0.02	0.12	.....	27									
February.....	3,339	201.8	22	7.2	0.03	0.17	44	22									
March.....	10,564	4,050.1	1,090	131	0.65	3.4	315	142									
April.....	18,132	7,162	1,600	239	1.1	6.0	900	146									
May.....	20,632	14,880	2,100	480	2.4	12	800	267									
June.....	83,879	317,458	99,000	10,600	51	265	5,900	1,400									
July.....	33,562	42,444	17,000	1,370	6.8	35	2,400	468									
August.....	11,714	2,997.5	385	97	0.48	2.5	205	95									
September.....	9,242	2,056	217	69	0.33	1.7	200	82									
Water Year 1957	201,367	392,083.30	99,000	1,070	63	327	5,900	721									
October.....	6,634	1,032	76	33	0.17	0.86	89	58									
November.....	12,047	3,689	337	123	0.59	3.1	245	113									
December.....	13,489	3,010	163	97	0.48	2.5	123	83									
Cal. Year 1957	225,249	399,126.2	99,000	1,090	64	333	5,900	656									
January.....	9,965	1,400	117	45	0.22	1.2	124	52									
February.....	8,773	6,187	2,500	220	0.99	5.2	550	261									
March.....	24,619	8,146	1,400	263	1.3	6.8	320	123									
April.....	32,276	19,414	1,830	647	3.1	16	438	223									
May.....	22,889	7,555	750	244	1.2	6.3	300	122									
June.....	61,077	156,011	28,000	183	25	130	2,100	946									
July.....	115,445	378,499	51,400	379	61	316	4,200	1,210									
August.....	19,540	8,635	1,270	279	1.4	7.2	500	164									
September.....	8,831	1,720	420	57	0.28	1.4	260	72									
Water Year 1958	335,585	595,298	51,400	1,630	95	497	4,200	657									
October.....	5,212	727	160	23	0.12	0.61	.....	52									
November.....	4,755	776.5	260	26	0.12	0.65	.....	61									
December.....	2,862	232.2	.....	7.5	0.04	0.19	.....	30									
Cal. Year 1958	316,244	589,302.7	51,400	1,610	94	492	4,200	690									
January.....	1,724	124.1	.....	4.0	0.02	0.10	.....	27									
February.....	3,074	1,414.7	917	51	0.23	1.2	485	170									
March.....	87,850	205,015	23,900	20	33	171	2,180	864									

05482000 DES MOINES RIVER AT DES MOINES, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Maximum						Minimum
April.....	50,594	30,741	3,530	173	1,020	4.9	26	395	225		
May.....	111,770	333,102	88,000	446	10,700	53	278	3,100	1,100		
June.....	142,706	232,123	48,000	320	7,740	37	194	1,600	602		
July.....	49,896	63,325	15,100	.....	2,040	10	53	1,070	470	
August.....	13,584	7,123	1,390	.....	230	1.1	5.9	1,700	194	
September.....	12,401	4,365	786	.....	146	.70	3.6	410	130	
Water Year 1959	486,428	879,068.50	88,000	.....	2,410	141	734	3,100	669	
October.....	15,199	1,773	182	16	57	.28	1.5	105	43		
November.....	17,972	3,332	441	20	111	.53	2.8	245	69		
December.....	20,830	5,788	1,460	26	187	.93	4.8	345	103		
Cal. Year 1959	527,600	888,225.80	88,000	.....	2,430	142	741	3,100	624	
January....,1960	39,750	6,957	822	20	224	1.1	5.8	145	65		
February....,1960	19,550	1,307	121	15	45	.21	1.1	52	25		
March.....,1960	45,185	58,905	34,500	13	1,900	9.4	49	760	483		
April.....	315,870	334,700	48,200	2,450	11,200	54	279	760	392		
May.....	216,110	470,160	68,200	1,390	15,200	75	392	2,620	806		
June.....	137,940	165,830	13,400	1,270	5,530	27	138	890	445		
July.....	69,469	78,383	10,400	231	2,530	13	65	1,000	418		
August.....	25,190	19,677	2,650	61	635	3.2	16	875	289		
September.....	19,996	6,227	585	20	208	1.00	5.2	220	115		
October.....	20,863	4,622	505	24	149	.74	3.9	190	82		
November.....	15,489	2,211	112	27	74	.35	1.8	79	53		
December.....	8,116	707	66	11	23	.11	.59	45	32		
January....,1961	4,630	399	19	7.0	13	.06	.33	42	32		
February.....	23,256	16,877	4,500	6.0	602	2.7	14	190	269		
March.....	228,790	355,480	50,000	1,300	11,500	57	297	935	575		
April.....	216,470	139,620	39,500	1,360	4,650	22	117	595	239		
May.....	77,030	26,570	1,610	292	857	4.3	22	205	128		
June.....	88,760	140,163	24,900	365	4,670	22	117	1,500	585		
July.....	33,046	16,612	1,770	164	536	2.7	14	480	186		
August.....	55,321	97,781	19,800	118	3,150	16	82	1,690	655		
September.....	26,080	13,042	2,710	139	435	2.1	11	325	185		
Water Year 1961	797,851	814,084	50,000	6.0	2,230	130	680	1,690	378		

05482000 DES MOINES RIVER AT DES MOINES, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Percent finer than indicated size, in millimeters	Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Concentration (tons per day)		
Apr. 27, 1957	770	20.5	690	1430	61	90	SPWC
May 21,	860	19.0	1100	2550	62	92	SPWC
June 4,	2180	25.5	435	2560	44	79	SPWC
June 4,	2180	25.5	435	2560	37	83	SPN
June 15,	1610	25.0	1370	5960	54	90	SPWC
June 15,	1610	25.0	1370	5960	36	96	SPN
June 17,	9440	23.5	3070	78200	59	74	SPWC
July 7, 1958	4060	24.0	414	4540	43	67	SPWC
May 31, 1959	11100	20.5	4060	122000	32	63	SPWC
June 1,	14900	19.5	538	21600	65	74	SPWC
June 1,	14900	19.5	538	21600	45	68	SPN
May 7, 1960	13100	7.0	1520	53800	48	77	SPWC
May 7,	13100	7.0	1520	53800	9	75	SPN
May 26,	12600	18.0	1250	42500	47	62	SPWC
June 17, 1944	29100		409	32100			
May 17, 1945	6370		240	4130			
May 24,	13500		473	17300			

Miscellaneous samples collected at site but outside period of record.

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum	Maximum daily			Weighted mean	
			Maximum	Minimum								
October.....	3.87	2	.....	0	.06	.....	.....	.....	0	.....	191
November.....	5.03	2.2	.....	.....	.07	.....	.....	.....	0	.....	162
December.....	6.6	.7	.....	.....	.02	.....	.....	.....	0	.....	39
January.....1953	6.35	1.2	.....	.....	.04	.....	.....	.....	0	.....	70
February.....	365.32	99.1	.....	.....	3.5	.....	.....	.....	.08	.....	100
March.....	197.6	53.4	.....	.....	1.7	.....	.....	.....	.04	.....	100
April.....	458.1	91.9	.....	.....	3.1	.....	.....	.....	.08	.....	74
May.....	454.1	126.9	.....	.....	4.1	.....	.....	.....	.11	.....	104
June.....	491.8	354.2	.....	.....	12	.....	.....	.....	.30	.....	267
July.....	72.78	32.1	.....	.....	1.0	.....	.....	.....	.03	.....	163
August.....	10.96	3.3	.....	.....	.11	.....	.....	.....	0	.....	112
September.....	0	0	.....	.....	0	.....	.....	.....	0	.....	0
Water Year 1953	2,072.51	767.00	.....	.....	2.1	.....	.....	.....	.64	.....	137
October.....	0	0	.....	.....	0	.....	.....	.....	0	.....	0
November.....	0	0	.....	.....	0	.....	.....	.....	0	.....	0
December.....	0	0	.....	.....	0	.....	.....	.....	0	.....	0
Cal. Year 1953	2,057.01	762.10	.....	.....	2.1	.....	.....	.....	.64	.....	137
January.....1954	0	0	.....	.....	0	.....	.....	.....	0	.....	0
February.....	5	.5	.....	.....	.02	.....	.....	.....	0	.....	370
March.....	4.1	1.3	.....	.....	.04	.....	.....	.....	0	.....	117
April.....	16.7	5.4	.....	.....	.18	.....	.....	.....	0	.....	120
May.....	103	51.4	.....	.....	1.7	.....	.....	.....	.04	.....	185
June.....	674.3	288.6	.....	.....	9.6	.....	.....	.....	.24	.....	159
July.....	37.5	7.4	.....	.....	.24	.....	.....	.....	.01	.....	73
August.....	1,406.7	508.9	.....	.....	16	.....	.....	.....	.42	.....	134
September.....	276	61.6	.....	.....	2.1	.....	.....	.....	.05	.....	83
Water Year 1954	2,518.80	925.10	.....	.....	2.5	.....	.....	.....	.77	.....	136
October.....	1,465.8	417.8	.....	.....	13	.....	.....	.....	.35	.....	106
November.....	380.3	50.1	.....	.....	1.7	.....	.....	.....	.04	.....	49
December.....	158.9	18.6	.....	.....	.60	.....	.....	.....	.02	.....	43
Cal. Year 1954	4,523.80	1,411.60	.....	.....	3.9	.....	.....	.....	1.2	.....	116
January.....1955	75.4	6.2	.....	.....	.20	.....	.....	.....	.01	.....	31
February.....	103.7	7.1	.....	.....	.25	.....	.....	.....	.01	.....	25
March.....	263.4	32.7	.....	.....	1.1	.....	.....	.....	.03	.....	46
April.....	632	266.9	.....	.....	8.9	.....	.....	.....	.22	.....	156

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment									
		Load (tons)		Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)		
		Maximum	Minimum	Maximum	Minimum				Maximum daily	Weighted mean	
May.....	263.1	66		2.1	2.7	.06					93
June.....	132.4	34		1.1	1.4	.03					95
July.....	590.5	361.2	236	12	15	.30					227
August.....	10.2	2.2		.07	.09	0					80
September.....	0	0	0	0	0	0					0
Water Year 1955	4,075.70	1,262.80	236	3.5	53	1.1					115
October.....	0	0	0	0	0	0					0
November.....	0	0	0	0	0	0					0
December.....	0	0	0	0	0	0					0
Cal. Year 1955	2,070.70	776.30	236	2.1	32	.65					139
January....1956	0	0	0	0	0	0					0
February.....	0	0	0	0	0	0					0
March.....	6.08	.3	.10	.01	.01	0					18
April.....	1.73	.2		.01	.01	0					43
May.....	86.48	59.4	55	1.9	2.5	.05					254
June.....	108.05	50.6	30	1.7	2.1	.04					173
July.....	2.29	.2		.01	.01	0					32
August.....	0	0	0	0	0	0					0
September.....	1.46	.3	.20	.01	.01	0					76
Water Year 1956	206.09	111.00	55	.30	4.6	.09					199
October.....	0	0	0	0	0	0					0
November.....	.66	.1	t	.01	.01	0					112
December.....	2.32	t	t	0	0	0					0
Cal. Year 1956	209.07	111.20	55	.30	4.6	.09					197
January....1957	.1	t	t	0	0	0					0
February.....	31.83	.9	.20	.03	.04	0					11
March.....	15.25	.4	.10	.02	.02	0					10
April.....	6.48	.2	t	.01	.01	0					11
May.....	79.53	18.5	5.0	.60	.77	.02					86
June.....	1,198.7	1,198.6	500	40	50	1.0					370
July.....	149.55	45.1	22	1.5	1.9	.04					112
August.....	9.69	1.5	.10	.06	.06	0					57
September.....	7.61	.7	.30	.02	.03	0					34
Water Year 1957	1,501.72	1,266.10	500	3.5	53	1.1					312

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IOWA--CONTINUED

PERIODIC SEDIMENT

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 9, 1966	3.1	11.0	56	.50
June 9,.....	17	10.0	25	1.0
June 14,.....	146	14.5	160	63
June 29,.....	56	26.5	130	20
July 11,.....	9.1	21.0	100	2.0
Aug. 12,.....	.40	21.5	240	.30
Cct. 4,.....	.02	12.0	420	.02
Nov. 1,.....	.01	1.0	74	.00
Apr. 6, 1967	4.0	2.0	19	.21
May 4,.....	.02	6.5	22	.00
May 31,.....	.05		12	.00
July 7,.....	12	23.5	120	3.9
Aug. 2,.....	.64	26.5	42	.07
Sept. 8,.....	.10	21.0	180	.05
Nov. 2, 1967	.10	4.0	5	.00
Dec. 5,.....	.06	2.0	84	.01
Feb. 6, 1968	.32	.0	6	.01
Mar. 6,.....	1.1	1.0	13	.04
Apr. 3,.....	.25	8.0	42	.03
May 1,.....	3.0	22.0	14	.11
June 4,.....	2.0	29.0	32	.17
July 1,.....	10	21.0	83	2.2
Aug. 6,.....	.06	21.0	25	.00
Sept. 5,.....	1.3	18.0	12	.04
Oct. 3, 1968	3.3	12.0	167	1.5
Nov. 8,.....	9.7	1.0	97	2.5
Dec. 4,.....	9.2	3.0	44	1.1
Jan. 7, 1969	3.5	.0	108	1.0
Feb. 7,.....	1.9	1.0	39	.20
Mar. 6,.....	4.2	1.0	102	1.2
Apr. 1,.....	40	2.0	15	1.6
May 8,.....	68	10.0	139	26
June 6,.....	7.4	21.0	127	2.5
July 2,.....	32	17.0	113	9.8
July 31,.....	26	24.0	183	13
Sept. 4,.....	.87	24.0	56	.13
Cct. 2, 1969	.50		91	.12
Cct. 30,.....	.72		149	.29
Dec. 2,.....	.69		153	.29

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IOWA--CONTINUED

PERIODIC SEDIMENT

DATE	DISCHARGE (CFS) (80061)	TEMPER- ATURE (DEG C) (80010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Jan. 8, 1970	.44		301	.36
Feb. 4,.....	.82		103	.23
Mar. 6,.....	7.2		37	.72
Apr. 1,.....	15		137	5.5
May 6,.....	5.1		62	.85
June 4,.....	5.2		102	1.4
July 3,.....	1.9		162	.83
July 30,.....	.38		136	.14
Sept. 11,.....	.02		1480	.08
Cct. 23, 1970	.59		209	.30
Dec. 3,.....	3.8	5.0	371	3.8
Jan. 13, 1971	.72		432	.84
Feb. 25,.....	14	.0	80	3.0
Apr. 5,.....	7.0	8.0	111	2.1
May 18,.....	2.9	16.0	53	.41
June 30,.....	1.3	22.0	11	.04
Aug. 9,.....	.07	22.0	20	.00

DES MOINES RIVER BASIN
05483600 MIDDLE RACCCCN RIVER AT PANORA, IOWA

LOCATION.--Lat 41°41'14", long 94°22'15", in NE1/4 NW1/4 sec.5, T.79N., R.30W., Guthrie County, on left bank 15 ft (5 m) downstream from bridge on county highway, 0.2 mi (0.3 km) southwest of Panora, 1.5 mi (2.4 km) upstream from Andy's Branch and 1.7 mi (2.7 km) downstream from Lake Panoramama.

DRAINAGE AREA.--440 mi² (1,139 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 1, 1965	368		610	606
July 13,	67		140	25
Aug. 3,	40	24.0	22	2.4
Sept. 9,	170	19.5	1000	459
Oct. 5, 1965	368	13.5	270	268
Nov. 2,	166	9.0	43	19
Dec. 7,	114	1.5	100	31
Jan. 4, 1966	390	.5	120	126
Feb. 8,	402	1.0	820	890
Mar. 8,	75	.5	30	6.0
Apr. 5,	192	4.5	330	171
May 5,	91	14.0	40	9.8
June 9,	489	15.5	3050	4030
July 12,	129	27.0	120	42
Aug. 9,	58	25.5	50	7.8
Sept. 12,	24	20.0	29	1.9
Oct. 4, 1966	24	13.0	23	1.5
Nov. 7,	30	4.5	45	3.6
Dec. 8,	29		35	2.7
Jan. 9, 1967	19	.0	31	1.6
Mar. 15,	51	1.0	20	2.8
Apr. 4,	32	13.5	32	2.8
Apr. 5,	32	1.5	37	3.2
May 3,	26	4.5	11	.77
May 31,	63	13.0	67	11
July 6,	209	23.0	260	147
Aug. 1,	61	26.5	120	20
Dec. 6, 1967	35	2.0	68	6.4
Jan. 3, 1968	14	.0	250	9.4
Feb. 6,	13	.0	20	.70
Mar. 5,	40	1.0	8	.86
Apr. 2,	28	7.0	42	3.2

05483600 MIDDLE RACCOON RIVER AT PANORA, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0019)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Apr. 30,.....	54	21.0	63	9.2
June 4,.....	31	31.0	54	4.5
July 1,.....	335	23.0	900	814
Aug. 5,.....	25	22.0	65	4.4
Sept. 4,.....	390	21.0	2400	2530
Oct. 2, 1968	49	19.0	31	4.1
Nov. 7,.....	120	1.0	138	45
Dec. 4,.....	113	3.0	65	20
Jan. 9, 1969	60	.0	121	20
Feb. 6,.....	50	.0	13	1.8
Mar. 6,.....	139	1.0	20	7.5
Mar. 19,.....	3760	1.0	1640	16600
Apr. 2,.....	1620	2.0	4080	17800
May 8,.....	489	11.0	435	574
June 5,.....	126	16.0	125	43
July 7,.....	525	16.0	186	264
July 30,.....	326	24.0	211	206
Sept. 2,.....	103	24.0	52	14
Oct. 1, 1969	41		74	8.2
Oct. 28,.....	47		144	18
Dec. 1,.....	48		118	15
Jan. 8, 1970	31		130	11
Jan. 29,.....	46		65	8.1
Mar. 5,.....	368		995	989
Apr. 1,.....	194		225	118
May 4,.....	85		64	15
June 4,.....	119		112	36
July 2,.....	32		29	2.5
July 31,.....	32		32	2.8
Sept. 10,.....	20		85	4.6
Oct. 22, 1970	22	12.5	423	25
Oct. 28,.....	13	10.0	169	5.9
Dec. 2,.....	7.4		62	1.2
Jan. 14, 1971	7.5		117	2.4
Feb. 24,.....	1080	2.0	261	761
Apr. 6,.....	40	9.0	43	4.6
May 19,.....	1020	18.0	91	251
June 29,.....	81	26.0	55	12
Aug. 10,.....	20	24.0	67	3.6
Sept. 21,.....	20	20.0	42	2.3

DES MOINES RIVER BASIN

05484800 WALNUT CREEK AT DES MOINES, IOWA

LOCATION.--Lat 41°35'14", Long 93°42'11", in SW1/4 SE1/4 sec.2, T.78N., R.25W., Polk County, on left bank, 25 ft (8 m) downstream from bridge on 63rd Street in Des Moines, and 2.2 mi (3.5 km) upstream from Raccoon River.

DRAINAGE AREA.--80.9 mi² (210 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Dec. 15, 1971	7.1	1.0	136	2.6
Feb. 1, 1972	1.7	.0	115	.53
Mar. 14,.....	8.9	2.0	46	1.1
May 31,.....	20	21.0	156	8.4
July 11,.....	8.9		24	.58
Aug. 30,.....	8.4	21.0	133	3.0
Oct. 3, 1972	42	19.5	205	23
Nov. 8,.....	167	8.5	224	101
Dec. 20,.....	44	.0	128	15
Jan. 30, 1973	64	.0	36	15
Feb. 28,.....	83	.0	268	60
Apr. 12,.....	426	4.0	851	979
June 19,.....	100		319	86
July 25,.....	129		251	87

DES MOINES RIVER BASIN
 0548550C DES MCINES RIVER BELOW RACCCCN RIVER AT DES MOINES, IOWA

LOCATION.--Lat 41°34'30", long 93°35'48", in NE1/4 SE1/4 sec.10, T.78 N., R.24 W., Polk County, at bridge on Southeast 14th Street at Des Moines, 0.8 mi (1.3 km) downstream from Raccoon River and at mile 200.7 (322.9 km).

DRAINAGE AREA.--9,879 mi² (25,587 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 5,370 mg/l May 22, 1945; minimum daily, 7 mg/l Jan. 15, 1946.
 Sediment discharge: Maximum daily, 590,000 tons (535,000 tonnes) June 13, 1947; minimum daily, 16 tons (15 tonnes) Jan. 1, 1946.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date
1945	1030	5,370	May 22	15	Dec. 20
				232,000	May 22
				27	Dec. 21
1946	1050	5,210	Aug. 22	7	Jan. 15
				164,700	Mar. 14
				16	Jan. 1
1947	1102	4,960	Apr. 10	16	Jan. 24
				590,000	June 13
				49	Sept. 25

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment							
		Load (tons)		Daily loads (tons)		Concentration (mg/l)			
		Maximum	Minimum	Maximum	Minimum	Maximum daily	Weighted mean		
October....1944	41,896	8,693	1,630	103	280	.88	7.3	284	77
November.....	26,473	2,228	119	49	74	.23	1.9	51	31
December.....	19,454	1,855	109	27	61	.19	1.6	86	36
January....1945	14,477	1,770	101	42	57	.18	1.5	76	45
February.....	71,725	101,145	22,900	67	3,610	10	84	2,020	522
March.....	387,150	1,107,330	170,000	1,420	35,700	112	924	4,510	1,060
April.....	436,580	1,023,080	103,000	5,100	34,100	104	854	2,650	868

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acres	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Minimum	Maximum	Maximum daily			Weighted mean	
			Minimum	Maximum								
May.....	451,290	1,217,990	232,000	5,670	39,300	123	1,020	5,370	1,000			
June.....	518,610	1,268,510	173,000	8,780	42,300	128	1,060	2,880	906			
July.....	154,480	149,980	11,900	1,660	4,840	15	125	620	360			
August.....	178,350	288,532	48,700	930	9,310	29	241	2,720	599			
September.....	37,811	10,258	1,550	117	342	1.0	8.6	380	100			
Water Year 1945	2,338,296	5,181,411	232,000	27	14,200	524	4,320	5,370	821			
October.....	26,327	5,205	826	71	168	.53	4.3	211	73			
November.....	17,923	2,550	441	25	85	.26	2.1	251	53			
December.....	13,290	2,356	286	22	76	.24	2.0	149	66			
Cal. Year 1945	2,308,013	5,178,706	232,000	22	14,200	524	4,320	5,370	831			
January.....	76,844	114,959	46,000	16	3,710	12	96	1,490	554			
February.....	125,240	92,985	10,500	87	3,320	9.4	78	596	275			
March.....	335,780	1,249,070	165,000	7,420	40,300	126	1,040	4,680	1,380			
April.....	157,820	121,540	17,300	399	4,050	12	101	581	285			
May.....	214,340	448,725	68,000	451	14,500	45	375	3,420	775			
June.....	263,570	694,840	146,000	1,520	23,200	70	580	3,210	976			
July.....	115,400	129,558	34,900	354	4,180	13	108	1,480	416			
August.....	62,183	198,141	71,500	178	6,390	20	165	5,210	1,180			
September.....	81,755	269,523	94,000	136	8,980	27	225	2,560	1,220			
Water Year 1946	1,490,472	3,329,452	165,000	16	9,120	337	2,780	5,210	827			
October.....	81,169	171,504	47,500	140	5,530	17	143	3,330	783			
November.....	80,510	27,053	1,210	488	902	2.7	23	166	124			
December.....	42,790	8,278	534	64	267	.84	6.9	115	72			
Cal. Year 1946	1,637,401	3,526,176	165,000	16	9,660	357	2,940	5,210	798			
January.....	33,170	2,927	165	54	94	.30	2.4	63	33			
February.....	56,380	16,111	2,280	50	575	1.6	13	272	106			
March.....	148,580	323,725	53,000	113	10,400	33	270	2,830	807			
April.....	314,580	1,321,400	190,000	2,270	44,000	134	1,100	4,960	1,560			
May.....	239,810	526,650	107,000	3,370	17,000	53	440	2,820	813			
June.....	949,800	3,304,300	590,000	23,000	110,000	334	2,760	4,040	1,290			
July.....	344,490	551,622	125,000	634	17,800	56	460	1,880	593			

05485500 DES MOINES R BL RACCOON E AT DES MOINES, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Suspended sediment		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily	Weighted mean				
August.....	38,896	6,513	683	114	210	.66	5.4	110	62		
September.....	13,858	2,433	156	49	81	.25	2.0	86	65		
Water Year 1947	2,344,033	6,262,516	590,000	49	17,200	634	5,230	4,960	990		

Miscellaneous sample collected at site but outside period of record.

DATE	DISCHARGE (CFS) (00061)	TEMPERATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 17, 1944	43800		533	65400

DES MOINES RIVER BASIN

05485640 FOURMILE CREEK AT DES MOINES, IOWA

LOCATION.--Lat 41°36'50", long 93°32'43", in NE1/4 NE1/4 sec.32, T.79N., R.23W., Polk County, on right bank 20 ft (6 m) downstream from bridge on Easton Blvd., 4.4 mi (7.1 km) downstream from Muchiknock Creek and 5.0 mi (8.0 km) upstream from Des Moines River.

DRAINAGE AREA.--92.7 mi² (240 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Dec. 15, 1971	5.9	.5	158	2.5
Feb. 1, 1972	1.0	.0	22	.06
Mar. 14,.....	13	2.0	39	1.4
May 31,.....	17	22.0	41	1.9
Aug. 29,.....	9.5	29.0	5	.13
Cct. 3, 1972	37	19.5	55	5.5
Nov. 7,.....	226	7.5	234	143
Dec. 20,.....	38	.0	125	13
Jan. 17, 1973	350		642	607
Mar. 1,.....	129	.5	215	75
Apr. 12,.....	379	4.0	651	666
May 7,.....	450	5.0	575	699
May 8,.....	800	6.0	1030	2230
June 18,.....	89	21.5	358	86
July 24,.....	67	21.0	136	25

DES MOINES RIVER BASIN
 05486490 MIDDLE RIVER NEAR INDIANCI, IOWA

LOCATION.--Lat 41°25'27", long 93°35'09", in SW1/4 SE1/4 sec.35, T.77 N., R.24 W., Warren County, at gaging station at county highway bridge, 0.4 mi (0.6 km) upstream from Cavitt Creek, 1.5 mi (2.4 km) upstream from bridge on U.S. Highway 69, and 4.6 mi (7.4 km) northwest of Indianola.

DRAINAGE AREA.--503 mi² (1,303 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--5 years (1962-67), 822,000 tons (746,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 15,300 mg/l June 6, 1966; minimum daily, 2 mg/l Aug. 4, 1966, Mar. 14, 1967.

Sediment discharge: Maximum daily, 160,000 tons (145,000 tonnes) Apr. 6, 1965; minimum daily, less than 0.05 ton (0.045 tonne) Dec. 22, 1963.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1963	1949	9,600	4	Apr. 29	120,000	0.1	Apr. 29	Jan. 2, Feb. 3	
1964	1956	10,100	4	Apr. 4	110,000	<.05	June 23	Dec. 22	
1965	1963	14,100	4	June 29	160,000	.3	Apr. 6	Dec. 3, 6	
1966	1993	15,300	2	June 6	134,000	.1	May 17	Aug. 4, Sept. 27-30	
1967	2013	10,600	2	June 12	144,000	.1	June 12	several days	

05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Minimum						Maximum
October....1962	909	380.7	250	.60	12	.76	.32	970	155		
November.....	652	21.3	2.0	.30	.71	.04	.02	21	12		
December.....	402.2	14.8	1.0	.20	.48	.03	.01	34	14		
January....1963	289.3	8.2	.40	.10	.26	.02	.01	17	11		
February.....	2,108.9	549.1	200	.10	20	1.1	.46	300	96		
March.....	22,001	196,284	48,000	1.0	6,330	390	164	7,000	3,300		
April.....	6,587	175,080	120,000	3.0	5,840	348	146	9,600	9,840		
May.....	9,429	97,242	28,000	25	3,140	193	81	9,190	3,820		
June.....	1,435	760.9	270	.90	25	1.5	.64	830	196		
July.....	704.2	1,014.1	950	.60	33	2.0	.85	2,900	533		
August.....	2,368	22,481	21,000	1.0	725	45	19	4,400	3,520		
September.....	638	236.5	84	.40	7.9	.47	.20	360	137		
Water Year 1963	47,523.60	494,072.60	120,000	.10	1,350	982	412	9,600	3,850		
October.....	231.9	9.9	.60	.10	.32	.02	.01	33	16		
November.....	279.6	26.3	3.0	.10	.88	.05	.02	49	35		
December.....	126.7	20.4	3.0	t	.66	.04	.02	140	60		
Cal. Year 1963	46,198.60	493,712.40	120,000	t	1,350	982	412	9,600	3,960		
January....1964	134	7.6	.70	.10	.25	.02	.01	41	21		
February.....	290.1	10.4	.70	.10	.36	.02	.01	35	13		
March.....	790	26.8	3.0	.20	.86	.05	.02	29	13		
April.....	6,066	99,378	27,000	.50	3,310	198	83	10,100	6,070		
May.....	4,022	29,010	7,000	17	936	58	24	7,000	2,670		
June.....	18,402	332,767	110,000	3.0	11,100	662	278	9,700	6,700		
July.....	15,102	208,994	72,000	30	6,740	415	174	8,990	5,130		
August.....	2,390	6,860	2,000	7.0	221	14	5.7	3,000	1,060		
September.....	18,232	216,676	65,000	61	7,220	431	181	7,200	4,400		
Water Year 1964	66,066.30	893,786.40	110,000	t	2,440	1,780	746	10,100	5,010		
October.....	2,573	305.3	50	1.5	9.8	.61	.25	58	44		
November.....	1,530	78.9	11	.60	2.6	.16	.07	54	19		
December.....	1,071	63.9	8.5	.30	2.1	.13	.05	73	22		
Cal. Year 1964	70,602.10	894,177.90	110,000	.10	2,440	1,780	746	10,100	4,690		
January....1965	3,249	1,165.1	640	.60	38	2.3	.97	320	133		
February.....	11,278	32,802.5	11,000	1.1	1,170	65	27	2,600	1,080		
March.....	32,831	266,799	100,000	47	8,610	530	223	7,200	3,010		
April.....	33,067	660,570	160,000	110	22,000	1,310	551	11,100	7,400		

05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Minimum	Maximum	Maximum daily			Weighted mean	
			Maximum	Minimum								
May.....	5,956	18,376	7,800	15	593	37	15	4,600	1,140			
June.....	15,733	291,296	53,000	19	9,710	579	243	14,100	6,860			
July.....	7,659	90,314.5	37,000	5.1	2,910	180	75	7,900	4,370			
August.....	871	91.8	7.2	.60	3.0	.18	.08	.78	.39			
September.....	10,528	91,470	57,000	1.5	3,050	182	76	4,700	3,220			
Water Year 1965	126,346	1,453,333.00	160,000	.30	3,980	2,890	1,210	14,100	4,260			
October.....	3,295	2,010.2	1,180	1.7	65	4.0	1.7	1,240	226			
November.....	2,613	1,180.6	290	1.2	39	2.3	.99	670	167			
December.....	4,807	3,437.6	1,830	3.4	111	6.8	2.9	2,280	265			
Cal. Year 1965	131,887	1,459,513.30	160,000	.60	4,000	2,900	1,220	14,100	4,100			
January.....	5,003	14,354.1	5,190	3.2	463	29	12	2,700	1,060			
February.....	3,564	11,462.8	6,440	.80	409	23	9.6	3,410	1,190			
March.....	5,018	18,613	4,860	10	600	37	16	4,900	1,370			
April.....	3,159	1,262.4	250	4.6	42	2.5	1.1	600	148			
May.....	19,914	493,619	134,000	4.6	15,900	981	412	12,300	9,180			
June.....	13,601	297,515	83,300	18	9,920	591	248	15,300	8,100			
July.....	1,619	1,460.4	1,100	1.8	47	2.9	1.2	2,960	334			
August.....	600	76.1	8.1	.10	2.5	.15	.06	100	47			
September.....	314.9	15.3	1.4	.10	.51	.03	.01	37	18			
Water Year 1966	63,507.90	845,006.50	134,000	.10	2,320	1,680	705	15,300	4,930			
October.....	195.1	14.2	1.0	.20	.46	.03	.01	41	27			
November.....	250.8	13.2	1.1	.10	.44	.03	.01	44	20			
December.....	159.8	15.7	1.1	.10	.51	.03	.01	63	36			
Cal. Year 1966	53,398.60	838,421.20	134,000	.10	2,300	1,670	700	15,300	5,820			
January.....	233	14.7	2.2	.20	.47	.03	.01	51	23			
February.....	203.5	9.3	.80	.10	.33	.02	.01	50	17			
March.....	1,327.2	1,472.1	600	.10	47	2.9	1.2	1,760	411			
April.....	1,498	4,906.7	2,090	1.2	164	9.8	4.1	5,740	1,210			
May.....	632.3	41.6	3.7	.40	1.3	.08	.03	39	24			
June.....	20,931	416,304.5	144,000	3.2	13,900	828	347	10,600	7,370			
July.....	1,893	2,469.4	980	.30	80	4.9	2.1	2,470	483			
August.....	471.3	28	2.1	.20	.90	.06	.02	43	22			
September.....	251	193.2	160	.10	6.4	.38	.16	1,140	285			
Water Year 1967	28,046.00	425,482.60	144,000	.10	1,170	846	355	10,600	5,620			

05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment						Methods of analysis					
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters			Methods of analysis						
					0.002	0.004	0.008		0.016	0.031	0.062	0.125	0.250	0.500
Apr. 29, 1963	722	13.5	7700	15000	45	60	71	94	98	100				SPWC
Apr. 29,	1080	13.5	9800	28600	40	66	76	92	96	100				SPWC
Apr. 30,	770	13.5	7600	15800	33	43	49	63	83	93			100	SPWC
Apr. 30,	770	13.5	7600	15800	22	32	42	57	80					SPN
Apr. 30,	1430	13.5	7100	27400	26	42	50	63	79	89			100	SPWC
Apr. 30,	1430	13.5	7100	27400	17	32	43	60	78					SPN
May 4,	1120	14.5	10000	30200	41	42	50	64	86	96			100	SPWC
May 4,	1120	14.5	10000	30200	10	23	38	50	82					SPN
May 8,	315	21.0	1100	936	22	36	50	67	86	96			100	SPWC
May 8,	315	21.0	1100	936	9	26	47	67	86					SPN
Apr. 14, 1964	1290	13.5	15200	52900	34	39	65	98	99	100				VPWC
Apr. 14,	1290	13.5	15200	52900	10	19	41							VPN
Apr. 27,	924	15.5	13100	32700	50	60	85	99	99	100				VPWC
Apr. 27,	924	15.5	13100	32700	22	35	73							VPN
June 15,	1290	21.0	4100	14300	39	44	68	94	96	99			100	VPWC
June 23,	4780	22.0	5100	65800	38	41	60	93	96	99			100	VPWC
July 12,	3720	22.0	7300	73300	34	41	65	90	93	97			100	VPWC
July 12,	3720	22.0	7300	73300	23	32	61							VPN
Aug. 31,	383	23.5	4500	4650	46	49	57	77	99	100				VPWC
Aug. 31,	383	23.5	4500	4650	15	28	43	69	93					VPN
Sept. 6,	3830	19.0	8890	91900	34	40	57	82	86	92			99	100
Apr. 6, 1965	9060	4.5	7100	174000	48	56	59	72	82	92			99	100
June 5,	3860	20.0	6200	64600	57	60	64	73	86	93				SPWC
June 29,	513	23.5	8580	11900	45	54	66	75	91	97			100	VPWC
June 30,	3250	23.5	9600	84200	42	51	63	77	91	96			100	VPWC
Sept. 8,	414	20.5	7500	8380	58	65	71	88	99	100				VPWC
Sept. 8,	414	20.5	7500	8380	18	34	52	75	97					VPN
Jan. 3, 1966	594	1.0	2420	3880	50	53	64	74	91	94			100	VPWC
Feb. 8,	800	9.0	4340	9370	22	27	32	42	62	78			85	94
May 12,	1670	7.0	8660	39000	32	39	48	61	84	94			97	100
May 12,	1670	7.0	8660	39000	10	20	31	51	82					VPN
May 15,	4720	13.0	14800	189000	39	46	54	64	79	88			93	100
June 9,	2850	19.0	8910	68600	38	48	56	69	94	95			98	100
June 12,	2610	19.0	14200	100000	26	36	46	62	84	93			97	100

05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis			
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters						
Apr. 14, 1967	172	13.0	2150	998	30	49	70	88	99	100	VPWC
Apr. 14,	172	13.0	2150	998	16	36	61	88	97	100	VPN
Apr. 22,	290	9.5	5350	4190	53	64	81	90	98	100	VPWC
Apr. 22,	290	9.5	5350	4190	14	34	52	82	97	100	VPN
June 6,	278	15.5	1910	1430	53	63	73	86	97	100	VPWC
June 9,	1520	15.5	12200	50100	44	52	65	79	94	97	VPWC
June 9,	1520	15.5	12200	50100	9	21	34	59	89	100	VPN
June 12,	4800	15.5	12300	159000	37	46	53	66	85	93	VPWC

Miscellaneous samples collected at site but outside period of record.

Apr. 17, 1945	3640		6820	67000							
June 20, 1946	2270		8910	54600							
Aug. 8, 1968	8.9	13.0	11	.26							
Nov. 7,	3.2	8.0	14	.12							
Dec. 4,	7.0	3.0	6	.11							
Mar. 6, 1969	140	1.0	196	74							
Apr. 8,	131	14.0	245	87							

DES MOINES RIVER BASIN
 05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA

LOCATION.--Lat 41°14'41", long 93°16'08", in NW1/4 NW1/4 sec.3, T.74 N., R.21 W., Marion County, 15 ft (5 m) upstream from gaging station on bridge on county highway, 0.5 mi (0.8 km) downstream from Kirk Branch, and 1.7 mi (2.7 km) northwest of Dallas.

DRAINAGE AREA.--342 mi² (886 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--6 years (1967-73), 433,000 tons (393,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 15,300 mg/l Apr. 5, 1969; minimum daily, 2 mg/l Jan. 11, 1973.

Sediment discharge: Maximum daily, 103,000 tons (93,400 tonnes) Apr. 27, 1969; minimum daily, 0.02 ton (0.018 tonne) Dec. 15, 1968.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1968	2094	8,180	5	Feb. 28	63,400	<.05	Apr. 23	Jan. 16, Feb. 28, Sept. 26-29	
1969	2144	15,300	8	Dec. 4	103,000	.02	Apr. 27	Dec. 15, 16	
1970	2154	5,450	4	Jan. 5	47,600	.12	Apr. 12	Jan. 5	
1971	2164	9,590	3	July 3	21,000	.03	Oct. 9	Sept. 1, 2	
1972	+	7,170	4	Dec. 26	95,200	.03	Sept. 12	Oct. 9-12, 14, 15, 18, Jan. 25	
1973	+	5,440	2	Jan. 11, 12	63,800	.49	Mar. 31	Oct. 3	

+ Water Resources Data for Iowa, Part 2, Water Quality Records

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Mean	Tons per sq mi	Acres-foot	Maximum daily	Weighted mean	
			Maximum	Minimum						
October...1967	294.5	322.7	75	.10	10	.94	.27	690	406	
November.....	397.6	58.5	13	.20	1.9	.17	.05	180	55	
December.....	306.4	21.7	2.9	.20	.70	.06	.02	57	26	
January...1968	723.34	353.6	91	t	11	1.0	.30	500	181	
February.....	491.5	125.8	29	t	4.3	.37	.11	160	95	
March.....	444.3	179.1	27	.10	5.8	.52	.15	500	149	
April.....	14,388	130,355.8	63,400	1.8	4,350	381	109	8,180	3,360	
May.....	1,022	295.3	41	2.0	9.5	.86	.25	280	107	
June.....	910.5	13,970.6	7,440	.90	466	41	12	7,720	5,680	
July.....	512	1,313.9	480	.80	42	3.8	1.1	1,800	950	
August.....	76.92	22.6	7.9	.10	.73	.07	.02	300	109	
September.....	33.21	5.8	1.7	t	.19	.02	0	150	65	
Water Year 1968	19,600.27	147,025.40	63,400	t	402	430	123	8,180	2,780	
October.....	59.3	15.59	5.1	.04	.50	.05	.01	173	97	
November.....	112.39	14.87	2.0	.06	.50	.04	.01	59	49	
December.....	87.32	87.76	50	.02	2.8	.26	.07	920	372	
Cal. Year 1968	18,860.78	146,740.72	63,400	t	401	429	122	8,180	2,880	
January...1969	3,652.64	6,604.06	2,000	.04	213	19	5.5	833	670	
February.....	2,970	476.9	77	1.2	17	1.4	.40	337	60	
March.....	5,657	21,422.1	8,410	5.5	691	63	18	3,080	1,400	
April.....	12,816	232,001.6	103,000	8.2	7,730	678	194	15,300	6,700	
May.....	7,610	57,833.6	18,000	2.3	1,870	169	48	4,310	2,810	
June.....	11,129	236,776.3	55,400	2.5	7,890	692	198	11,700	7,880	
July.....	23,635	217,920	74,200	52	7,030	637	182	4,880	3,410	
August.....	3,183.2	14,875.5	10,100	2.1	480	43	12	3,300	1,730	
September.....	5,141	31,549.2	13,100	2.4	1,050	92	26	3,060	2,270	
Water Year 1969	76,052.85	819,577.48	103,000	.02	2,250	2,400	684	15,300	3,990	
October.....	2,261	6,392.5	5,210	1.6	206	19	5.3	2,200	1,050	
November.....	2,638	2,611.4	1,720	3.6	87	7.6	2.2	1,000	367	
December.....	932	90.4	6.6	.59	2.9	.26	.08	81	36	
Cal. Year 1969	81,624.84	828,553.56	103,000	.04	2,270	2,420	692	15,300	3,760	
January...1970	2,874.2	1,473.03	612	.12	48	4.3	1.2	247	190	
February.....	1,001	103.1	26	1.1	3.7	.30	.09	138	38	
March.....	6,536	31,254.1	8,100	6.1	1,010	91	26	5,450	1,770	
April.....	15,678	117,932	47,600	27	3,930	345	98	5,170	2,790	

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
May.....	5,876	14,700	4,510	1.7	474	43	12	2,500	927		
June.....	498.1	297.02	64	.54	9.9	.87		500	221		
July.....	628.5	5,687.25	3,250	.26	183	17	4.7	4,200	3,350		
August.....	11,904.4	28,449.9	15,100	1.1	918	83	24	2,550	885		
September.....	6,057.6	32,132.58	17,400	.39	1,070	94	27	5,100	1,960		
Water Year 1970	56,884.80	241,123.28	47,600	.12	661	705	201	5,450	1,570		
October.....	11,425	42,211.1	21,000	2.8	1,360	123	35	2,720	1,370		
November.....	3,054	3,398.6	963	1.5	113	9.9	2.8	1,950	412		
December.....	4,383	664.9	93	2.0	21	1.9	.55	84	56		
Cal. Year 1970	69,915.80	278,303.58	47,600	.12	762	814	232	5,450	1,470		
January.....	1,183	184.9	12	2.6	6.0	.54	.15	90	58		
February.....	18,814	36,469.1	7,940	1.0	1,300	107	30	1,010	718		
March.....	8,181	16,062	3,390	10	518	47	13	1,400	727		
April.....	1,358	624.5	142	2.9	21	1.8	.52	442	170		
May.....	1,848	14,771.4	5,510	2.8	476	43	12	9,590	2,960		
June.....	526.5	3,097.84	2,250	.32	103	9.1	2.6	4,140	2,180		
July.....	159	101.62	26	.09	3.3	.30	.08	543	237		
August.....	64.65	116.1	97	.06	3.7	.34	.10	1,160	665		
September.....	92.55	210.66	151	.03	7.0	.62	.18	966	843		
Water Year 1971	51,088.70	117,912.72	21,000	.03	323	345	98	9,590	855		
October.....	58.51	44.62	22	.03	1.4	.13	.04	470	282		
November.....	1,273.8	2,698.97	1,480	.14	90	7.9	2.3	1,020	785		
December.....	1,078	1,124.03	459	.09	36	3.3	.94	718	386		
Cal. Year 1971	34,637.01	75,505.74	7,940	.03	207	221	63	9,590	807		
January.....	156.6	13.92	1.6	.03	.45	.04	.01	80	33		
February.....	3,470.5	1,919.67	575	.12	66	5.6	1.6	430	205		
March.....	1,513	2,191.52	509	.52	71	6.4	1.8	1,780	536		
April.....	3,140	40,387.04	20,200	.84	1,350	118	34	7,170	4,760		
May.....	13,167	72,868	28,700	14	2,350	213	61	3,940	2,050		
June.....	741.3	772.42	265	.85	26	2.3	.64	1,420	386		
July.....	5,176.9	42,435.98	13,800	.33	1,370	124	35	4,490	3,040		
August.....	10,006	41,749.4	19,400	1.1	1,350	122	35	2,100	1,550		
September.....	20,713	193,888.1	95,200	.68	6,460	567	162	6,760	3,470		
Water Year 1972	60,494.61	400,093.67	95,200	.03	1,090	1,170	334	7,170	2,450		
October.....	867	404.35	252	.49	13	1.2	.34	890	173		
November.....	6,367	19,098	4,640	4.5	637	56	16	5,030	1,110		

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
December.....	6,394	13,132.71	9,720	.91	424	38	11	1,450	761	
Cal. Year 1972	71,712.30	428,861.11	95,200	.03	1,170	1,250	358	7,170	2,210	
January.....1973	7,985	15,776.51	4,430	.59	509	46	13	1,940	732	
February.....	20,113	133,512.4	52,500	4.4	4,770	390	111	4,610	2,460	
March.....	26,310	157,311	63,800	145	5,090	461	132	5,440	2,220	
April.....	44,960	202,255	52,800	41	6,740	591	169	3,230	1,670	
May.....	24,098	136,807.7	29,900	7.8	4,410	400	114	3,500	2,100	
June.....	7,352	20,214.3	7,940	5.3	674	59	17	1,960	1,020	
July.....	9,437	81,997.2	24,000	4.9	2,650	240	68	5,010	3,220	
August.....	6,405	40,667.75	21,200	.65	1,310	119	34	3,380	2,350	
September.....	15,306	48,358.8	16,300	2.8	1,610	141	40	1,840	1,170	
Water Year 1973	175,594	870,035.72	63,800	.49	2,380	2,540	726	5,440	1,840	

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Concentration (mg/l)	Suspended sediment				Percent finer than indicated size, in millimeters	Methods of analysis			
				Concentration (mg/l)	Suspended sediment (tons per day)	Concentration (mg/l)	Suspended sediment (tons per day)					
Apr. 4, 1968	122	8.0	3410	1120	64	85	95	97	99	100	SPWC	
Apr. 4,	122	8.0	3410	1120	15	68	76	96	97		SPN	
Apr. 17,	276	13.0	10100	7530	49	64	76	86	95	100	SPWC	
Apr. 23,	6470	9.0	2940	51400	51	56	63	72	85	92	VPWC	
June 11,	440	18.0	3040	3610	75	86	87	91	91	100	SPWC	
July 24,	74	24.0	7770	1550	57	66	83	91	100		SPWC	
Jan. 16, 1969	2210	.0	726	4330	52	56	68	89	94	98	100	SPWC
Mar. 25,	1230	.0	3620	12000	41	51	60	77	95	99	100	SPWC
Apr. 6,	278	6.0	7180	5390	44	47	66	77	91	99	100	SPWC
Apr. 13,	4110	13.0	7060	78300	44	54	64	78	94	99	100	VPWC
Apr. 27,	4110	13.0	7060	78300	40	50	65	65	93	99	100	VPN
May 22,	2330	10.0	4060	25500	42	52	60	75	93	99	100	SPWC
June 13,	1300		13800	48400	44	46	58	76	92	99	100	SPWC
July 18,	6780	24.0	8080	148000	43	52	63	79	95	99	100	SPWC
July 18,	6780	24.0	8080	148000	21	40	55	78	91	98	100	VPN
July 21,	967	18.0	3400	8880	48	60	68	77	91	98	100	SPWC
Sept. 8,	1020	18.0	885	2440	64	65	68	72	83	99	100	SPWC
Sept. 23,	1140	17.0	3250	10000	52	60	71	77	96	98	100	SPWC
Mar. 3, 1970	1420	.0	2250	8630	75	86	91	93	94	100		SPWC
Apr. 12,	3000	8.5	4610	37300	66	71	83	92	95	99	100	SPN
Apr. 12,	3000	8.5	4610	37300	63	69	76	86	90	99	100	SPWC
May 15,	1510	14.0	941	3840	78	83	85	88	89	99	100	SPWC
Aug. 5,	134	20.0	2520	912	81	86	93	94	96	100		SPWC
Sept. 15,	1630	18.5	3350	14700	58	68	76	87	97	99	100	SPWC
Oct. 9, 1970	5610	13.0	1220	18500	48	51	58	74	84	98	100	VPWC
Mar. 12, 1971	759	.0	1340	2750	45	52	62	78	94	99	100	VPWC
Mar. 14,	990	.0	1760	4700	38	45	56	86	97	98	100	VPWC
May 19,	600	16.5	6220	10100	53	66	78	90	97	100		SPWC
May 24,	240	15.5	11000	7130	53	65	77	91	97	100		SPWC
May 26,	89	12.0	361	87	53	59	68	73	85	99	100	VPWC
May 26,	89	12.0	361	92	53	72	80	82	85	98	100	VPWC
June 15,	432	20.5	5720	6670	53	66	80	90	98	100		SPWC
Aug. 3,	60	18.5	1430	232	62	81	89	92	95	100		SPWC

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters							
Nov. 2, 1971	915	8.0	879	2170	80	89	91	95	97	100	SPWC	
Apr. 22, 1972	1120	7.0	7600	23000	38	46	58	69	81	99	VPWC	
May 7,	1720	13.0	4430	20600	35	44	54	70	89	99	VPWC	
May 7,	1980	13.0	4210	22500	39	45	53	71	88	96	VPWC	
May 7,	4780	13.0	4060	52400	41	46	58	70	96	99	VPWC	
May 30,	320	16.5	4050	3500	44	53	64	75	77	99	SPWC	
July 20,	500		1800	2430	56	69	80	90	95	99	SPWC	
July 21,	136	24.5	1490	547	56	67	80	90	95	98	SPWC	
July 24,	1200		3040	9850	57	68	81	93	98	100	SPWC	
Aug. 4,	121	16.5	1130	369	57	62	72	82	92	98	SPWC	
Aug. 6,	6910	19.0	2050	38200	60	72	83	88	94	100	SPWC	
Aug. 10,	89	17.0	784	188	81	87	92	95	96	100	SPWC	
Sept. 12,	6400	21.0	7770	134000	41	47	60	72	93	99	VPWC	
Nov. 8, 1972	410	5.5	6270	6940	50	62	71	85	96	100	SPWC	
Apr. 13, 1973	3560	4.0	1410	13600	32	36	39	56	70	78	86	VPWC
Apr. 16,	7790	4.0	2460	51700	39	41	47	71	83	98	100	VPWC
Apr. 22,	1050	9.5	3060	8680	31	44	47	65	88	99	100	VPWC
July 3,	660	20.0	3110	5540	60	73	85	95		100	SPWC	

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
Apr. 1, 1970	103	4.0	3	21	23	31	56	72	82	89	95	100			SV
Sept. 28,	112	17.0	3	23	28	45	84	96	98	99	100				S
Mar. 3, 1971	207	.5	3	3	7	17	50	74	83	87	92	100			S
May 26,	89	12.0	3	3	4	18	71	93	95	98	100				SV
Mar. 13, 1972	113	3.0	1	5	7	15	66	89	90	93	94				SV
Apr. 17,	60	14.0	1	2	2	9	48	78	82	86					SV
July 10,	2.5		2	2	3	16	38	61	65	73	80				SV
Oct. 2, 1972	29	20.0	3	2	5	26	73	87	89	93	100				SV
Nov. 6,	36	8.5	3	2	4	13	58	80	84	90	94				SV
Apr. 11, 1973	550	1.0	2	3	12	39	73	94	95	100					SV
Aug. 13,	1670	23.5	3	21	26	79	98	99	99	100					SV

BIG SIOUX RIVER EASIN
 06485500 BIG SIOUX RIVER AT ARCON, ICWA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW1/4 SW1/4 sec.31, T.53 N., R.48 W., Plymouth County, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Unicer Creek.

DRAINAGE AREA.--9,030 mi² (23,390 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--13 years (1929-31, 1940-51), 971,000 tons (881,000 tonnes).

EXTREMES.--1940-51: Sediment concentrations: Maximum daily, 10,400 mg/l June 26, 1951; minimum daily, not determined. Sediment discharge: Maximum daily, 216,000 tons (196,000 tonnes) June 4, 1942; minimum daily, 5 tons (4.5 tonnes) Jan. 5-8, 1942.

REMARKS.--Records of suspended sediment furnished by Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1941	A	800	*	Apr. 23	11,000	9	Mar. 12	Sept. 6, 7	
1942	A	3,800	*	June 3	216,000	5	June 4	Jan. 5-8	
1943	A	4,400	*	Aug. 26	36,000	23	June 18	Jan. 25	
1944	A	4,900	*	Apr. 1	91,600	6	Feb. 28	Feb. 18	
1945	A	1,700	*	May 31	52,300	88	Mar. 14	Feb. 3	
1946	A	1,900	*	Mar. 14	107,000	20	Mar. 5	Feb. 1-3	
1947	A	2,800	*	June 12	111,000	43	June 15	Jan. 3-8	
1948	A	2,900	*	June 23	64,000	11	Mar. 21	Dec. 24-26	
1949	A	7,500	*	Mar. 22	52,000	23	Mar. 28	several days	
1950	A	8,480	*	June 18	70,700	15	June 18	Sept. 19	
1951	A	10,400	*	June 26	113,000	9	June 26	several days	

A Corps of Engineers
 + Maximum measured concentration
 * Not determined

06485500 BIG SIOUX RIVER AT AKRON, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Maximum daily	Weighted mean
			Maximum	Minimum						
July.....1929	22,379	47,600			1,540	5.3	40			788
August.....	8,099	4,070			131	.45	3.4			186
September....	5,759	2,320			77	.26	1.9			149
October.....	9,165	4,260			137	.47	3.6			172
November.....	9,217	1,800			60	.20	1.5			72
December.....	4,275	1,720			55	.19	1.4			149
January.....1930	2,425	835			27	.09	.70			128
February.....	21,775	46,200			1,650	5.1	39			786
March.....	21,708	6,890			222	.76	5.8			118
April.....	11,299	3,750			125	.42	3.1			123
May.....	34,872	103,000			3,320	11	86			1,090
June.....	29,555	139,000			4,630	15	116			1,740
July.....	5,462	2,950			95	.33	2.5			200
August.....	2,695	1,410			45	.16	1.2			194
September....	4,995	3,300			110	.37	2.8			245
Water Year 1930	157,443	315,115			863	35	263			741
October.....	4,486	1,940			63	.21	1.6			160
November.....	4,720	2,780			93	.31	2.3			218
December.....	3,100	1,120			36	.12	.93			134
Cal. Year 1930	147,092	313,175			858	35	261			789
January.....1931	2,325	806			26	.09	.67			128
February.....	3,584	1,400			50	.16	1.2			145
March.....	3,834	1,490			48	.17	1.2			144
April.....	4,175	1,670			56	.18	1.4			148
May.....	3,351	1,260			41	.14	1.1			139
June.....	3,863	1,620			54	.18	1.4			155
July.....	1,573	1,180			38	.13	.98			278
August.....	5,913	4,430			143	.49	3.7			277
September....	2,775	2,100			70	.23	1.8			280
Water Year 1931	43,699	21,796			60	2.4	18			185
October.....	2,607	1,950			63	.22	1.6			277
November.....	5,267	3,960			132	.44	3.3			278
December.....	4,786	3,600			116	.40	3.0			279
Cal. Year 1931	44,053	25,466			70	2.8	21			214

06485500 BIG SIOUX RIVER AT AKRON, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
Water Year 1942	469,445	1,982,693	216,000	5.0	5,430	220	1,650	.....	1,560
October.....	20,389	9,100	570	140	294	1.0	7.6	.....	165
November.....	11,344	5,747	290	87	192	.64	4.8	.....	188
December.....	6,315	1,231	98	31	40	.14	1.0	.....	72
Cal. Year 1942	500,362	1,993,365	216,000	5.0	5,460	221	1,660	.....	1,480
January.....1943	4,065	1,463	76	23	47	.16	1.2	.....	133
February.....	44,600	97,665	24,100	24	3,490	11	82	.....	811
March.....	42,150	137,183	25,600	41	4,430	15	115	.....	1,210
April.....	41,239	92,830	10,900	320	3,090	10	77	.....	834
May.....	15,045	10,520	800	240	339	1.2	8.8	.....	259
June.....	124,295	287,890	36,000	1,710	9,600	32	240	.....	858
July.....	60,712	194,820	22,600	870	6,280	22	163	.....	1,190
August.....	37,549	177,860	29,200	460	5,740	20	148	.....	1,750
September.....	19,287	11,890	810	180	396	1.3	9.9	.....	228
Water Year 1943	426,990	1,028,199	36,000	23	2,820	114	858	.....	892
October.....	10,453	2,638	160	27	85	.29	2.2	.....	94
November.....	12,180	3,781	230	59	126	.42	3.2	.....	115
December.....	11,071	3,810	220	47	123	.42	3.2	.....	127
Cal. Year 1943	422,646	1,022,350	36,000	23	2,800	113	853	.....	896
January.....1944	5,820	5,982	1,300	80	193	.66	5.0	.....	381
February.....	56,345	235,167	91,600	6.0	8,400	26	196	.....	1,550
March.....	60,931	230,440	42,900	850	7,430	26	192	.....	1,400
April.....	38,773	123,510	22,000	940	4,120	14	103	.....	1,180
May.....	101,830	523,570	38,400	2,780	16,900	58	437	.....	1,900
June.....	122,820	417,330	53,500	1,290	13,900	46	348	.....	1,260
July.....	83,990	248,610	41,600	940	8,020	28	208	.....	1,100
August.....	53,557	62,870	6,330	850	2,030	7.0	52	.....	435
September.....	38,866	74,080	10,500	770	2,470	8.2	62	.....	706
Water Year 1944	596,636	1,931,788	91,600	6.0	5,290	214	1,610	.....	1,200
October.....	21,140	14,850	1,140	180	479	1.6	12	.....	260
November.....	16,351	11,730	700	140	391	1.3	9.8	.....	266
December.....	12,469	11,170	560	150	360	1.2	9.3	.....	332
Cal. Year 1944	612,892	1,959,309	91,600	6.0	5,370	217	1,640	.....	1,180

06485500 BIG SIOUX RIVER AT AKRON, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Maximum	Minimum						
January...1945	4,931	3,990	150	100	129	44	3.3	.....	300
February.....	26,129	49,684	10,100	88	1,710	5.5	41	.....	704
March.....	107,269	352,530	52,300	290	11,400	39	294	.....	1,220
April.....	38,240	43,560	2,250	810	1,450	4.8	36	.....	422
May.....	47,980	145,650	19,900	380	4,700	16	122	.....	1,120
June.....	127,070	427,720	44,000	2,510	14,300	47	357	.....	1,250
July.....	46,631	112,700	7,850	1,640	3,640	12	94	.....	895
August.....	23,528	60,440	4,700	640	1,950	6.7	50	.....	951
September.....	11,137	22,590	3,060	290	753	2.5	19	.....	751
Water Year 1945	482,875	1,256,614	52,300	88	3,430	139	1,050	.....	964
October.....	8,519	5,157	500	65	166	.57	4.3	.....	224
November.....	7,600	3,030	210	61	101	.34	2.5	.....	148
December.....	4,295	1,000	80	25	32	.11	.83	.....	86
Cal. Year 1945	453,329	1,228,051	52,300	25	3,360	136	1,030	.....	1,000
January...1946	2,955	1,046	56	20	34	.12	.87	.....	131
February.....	32,215	203,037	46,900	20	7,250	22	169	.....	2,330
March.....	143,460	836,150	107,000	4,700	27,000	93	698	.....	2,160
April.....	38,442	69,860	9,840	630	2,330	7.7	58	.....	673
May.....	17,823	24,910	1,270	400	804	2.8	21	.....	518
June.....	20,775	45,180	3,390	350	1,510	5.0	38	.....	805
July.....	25,679	56,940	5,400	680	1,840	6.3	48	.....	821
August.....	9,656	13,830	760	190	446	1.5	12	.....	530
September.....	15,920	25,040	5,400	100	835	2.8	21	.....	583
Water Year 1946	327,339	1,285,180	107,000	20	3,520	142	1,070	.....	1,450
October.....	28,051	40,400	3,120	150	1,300	4.5	34	.....	533
November.....	20,102	31,160	1,630	400	1,040	3.5	26	.....	574
December.....	10,630	7,099	450	89	229	.79	5.9	.....	247
Cal. Year 1946	365,708	1,354,652	107,000	20	3,710	150	1,130	.....	1,370
January...1947	6,340	2,676	150	43	86	.30	2.2	.....	156
February.....	14,320	15,581	2,940	46	556	1.7	13	.....	403
March.....	23,810	23,850	2,270	180	769	2.6	20	.....	371
April.....	113,940	249,660	28,800	2,390	8,320	28	208	.....	812
May.....	65,390	140,500	16,800	1,240	4,530	16	117	.....	796
June.....	107,230	566,550	111,000	770	18,900	63	473	.....	1,960
July.....	41,784	74,230	13,300	360	2,390	8.2	62	.....	658
August.....	11,341	10,010	1,280	150	323	1.1	8.4	.....	327
September.....	7,125	8,810	1,040	100	294	.98	7.4	.....	458

06485500 BIG SIOUX RIVER AT AKRON, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
				Minimum	Minimum						Maximum
Water Year 1947	450,063	1,170,526	111,000	43	3,210	130	977	.....	963
October.....	7,086	5,270	300	100	170	.58	4.4	.....	275
November.....	8,671	4,479	340	72	149	.50	3.7	.....	191
December.....	4,620	1,938	190	11	63	.21	1.6	.....	155
Cal. Year 1947	411,657	1,103,554	111,000	11	3,020	122	921	.....	993
January.....1948	2,925	853	68	16	28	.09	.71	.....	108
February.....	14,330	5,987	1,080	16	213	.66	5.0	.....	155
March.....	137,130	315,700	64,000	130	10,200	35	264	.....	855
April.....	69,970	105,400	11,200	740	3,510	12	88	.....	558
May.....	49,262	96,560	16,200	340	3,110	11	81	.....	726
June.....	23,322	49,530	8,710	350	1,650	5.5	41	.....	787
July.....	58,936	202,880	33,600	590	6,540	22	169	.....	1,270
August.....	35,964	43,360	9,910	380	1,400	4.8	36	.....	447
September.....	16,497	9,900	580	120	330	1.1	8.3	.....	222
Water Year 1948	428,713	842,857	64,000	11	2,310	93	704	.....	728
October.....	10,935	6,250	320	160	202	.69	5.2	.....	212
November.....	7,705	3,781	250	47	126	.42	3.2	.....	182
December.....	5,500	2,711	180	43	87	.30	2.3	.....	183
Cal. Year 1948	432,476	843,912	64,000	16	2,310	93	704	.....	723
January.....1949	3,100	1,294	69	23	42	.14	1.1	.....	155
February.....	7,435	4,386	1,350	23	151	.49	3.7	.....	218
March.....	119,530	251,860	32,000	450	8,120	28	210	.....	780
April.....	115,270	196,840	16,600	860	6,560	22	164	.....	632
May.....	25,938	29,290	2,740	460	945	3.2	24	.....	418
June.....	17,239	33,060	6,870	270	1,100	3.7	28	.....	710
July.....	10,626	24,420	5,090	110	788	2.7	20	.....	851
August.....	9,000	12,910	1,110	120	416	1.4	11	.....	531
September.....	8,844	26,989	11,000	74	900	3.0	23	.....	1,130
Water Year 1949	341,122	593,791	32,000	23	1,620	66	496	.....	645
October.....	4,800	3,934	330	45	127	.44	3.3	.....	304
November.....	4,515	2,970	200	38	99	.33	2.5	.....	244
December.....	2,636	2,393	110	38	77	.27	2.0	.....	336
Cal. Year 1949	328,933	590,346	32,000	23	1,610	65	493	.....	665

06485500 BIG SIOUX RIVER AT AKRON, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acres-feet	Concentration (mg/l)			
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean		
			Minimum	Maximum								
January...1950	1,545	1,091	27	57	35	70,700	15	1,430	58	435	1,000	998
February.....	2,675	2,143	27	180	76	70,700	15	1,430	58	435	1,000	998
March.....	51,710	191,429	27	29,300	6,180	70,700	15	1,430	58	435	1,000	998
April.....	43,612	87,780	400	9,740	2,930	70,700	15	1,430	58	435	1,000	998
May.....	33,296	45,070	380	4,440	1,450	70,700	15	1,430	58	435	1,000	998
June.....	25,167	156,090	290	70,700	5,200	70,700	15	1,430	58	435	1,000	998
July.....	11,778	9,657	77	1,200	312	70,700	15	1,430	58	435	1,000	998
August.....	5,600	2,036	32	420	66	70,700	15	1,430	58	435	1,000	998
September.....	6,304	17,013	15	7,440	567	70,700	15	1,430	58	435	1,000	998
Water Year 1950	193,638	521,606	15	70,700	1,430	70,700	15	1,430	58	435	1,000	998
October.....	8,702	6,981	49	740	225	70,700	15	1,430	58	435	1,000	998
November.....	4,856	5,398	46	400	180	70,700	15	1,430	58	435	1,000	998
December.....	2,720	871	19	47	28	70,700	15	1,430	58	435	1,000	998
Cal. Year 1950	197,965	525,559	15	70,700	1,440	70,700	15	1,440	58	439	1,000	983
January...1951	1,495	438	9.0	18	14	70,700	15	1,440	58	439	1,000	983
February.....	1,965	621	9.0	98	22	70,700	15	1,440	58	439	1,000	983
March.....	42,370	88,716	14	19,300	2,860	70,700	15	1,440	58	439	1,000	983
April.....	271,210	310,400	2,070	35,000	10,300	70,700	15	1,440	58	439	1,000	983
May.....	72,230	101,450	1,090	16,400	3,270	70,700	15	1,440	58	439	1,000	983
June.....	76,530	393,520	1,000	113,000	13,100	70,700	15	1,440	58	439	1,000	983
July.....	96,120	265,650	1,370	59,800	8,570	70,700	15	1,440	58	439	1,000	983
August.....	43,558	117,300	810	16,300	3,780	70,700	15	1,440	58	439	1,000	983
September.....	43,379	86,780	630	21,200	2,890	70,700	15	1,440	58	439	1,000	983
Water Year 1951	665,135	1,378,125	9.0	113,000	3,780	70,700	15	1,440	58	439	1,000	983

MISSOURI RIVER BASIN
06486000 MISSOURI RIVER AT SIOUX CITY, IOWA

LOCATION.--Lat 42°29'10", long 96°24'47", in NW 1/4 SE 1/4 sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, Nebraska, at bridge on U.S. Highway 77 at Sioux City, 2.0 mi (3.2 km) downstream from Big Sioux River, and at mile 732.3 (1,178.3 km).

DRAINAGE AREA.--314,600 mi² (814,814 km²), approximately.

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--21 years (1930-31, 1955-73), 17,080,000 tons (15,490,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 4,700 mg/l June 15, 1967; minimum daily, not determined. Sediment discharge: Maximum daily, 1,010,000 tons (916,000 tonnes) Apr. 3, 1960; minimum daily, 700 tons (635 tonnes) Dec. 12, 1957.

REMARKS.--Records of suspended-sediment for period July 1929 to June 1932 compiled from House Document 238, (1935), and furnished by the Corps of Engineers for the period 1955-71. Flow partially regulated by Fort Randall Dam until operation of Gavins Point Dam July 1955.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Daily suspended sediment				
		Concentrations (mg/l)		Loads (tons)		
		Max.	Min.	Date	Date	
1955	A	1,070b	*	Oct. 6	90,700 Oct. 5	5,600 Jan. 15, 16
1956	A	3,120b	*	June 26	219,000 June 26	7,130 Nov. 25
1957	A	1,320b	*	June 21	77,100 June 22	4,550 Jan. 10
1958	A	630b	*	July 17	55,000 July 2	700 Dec. 12
1959	A	1,670b	*	June 4	120,000 May 31	8,400 Dec. 7
1960	A	2,680b	*	Aug. 3	1,010,000 Apr. 3	6,430 Nov. 15
1961	A	1,960b	*	Mar. 16	89,200 Mar. 16	3,720 several days
1962	A	3,700b	*	May 22	414,000 Apr. 2	2,260 Nov. 20
1963	A	780b	*	Nov. 13	48,900 Apr. 12	1,060 several days
1964	A	1,020b	*	Nov. 13	51,900 Apr. 1	2,830 Mar. 10
1965	A	1,050b	*	Apr. 10	110,000 Apr. 9	1,230 Feb. 13
1966	A	1,210b	*	Feb. 10	111,000 Feb. 9	8,020 Mar. 6
1967	A	4,700b	*	June 15	331,000 June 16	1,480 Jan. 8

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

ANNUAL EXTREMES--CONTINUED

Water year	M.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1968	A	680b	*	Apr. 2	Apr. 3	63,500	7,520	Apr. 3	Dec. 22
1969	A	3,450b	*	Apr. 9	Apr. 10	668,000	2,980	Apr. 10	Dec. 14
1970	A	830b	*	Nov. 20	Nov. 18	96,200	6,320	Nov. 18	Jan. 9
1971	A	3,820b	*	June 7	June 10	622,000	10,200	June 10	Jan. 8
1972	+	1,570	100	Mar. 22	Feb. 3	188,000	5,320	May 1	Feb. 3
1973	+	1,620	165	Nov. 20	Aug. 6	222,000	13,800	Nov. 20	Aug. 6

A Published by Corps of Engineers

b Maximum measured concentration

* Not determined

+ Water Resources Data for Iowa, Part 2, Water Quality Records

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Lead (tons)	Daily loads (tons)		Tons per sq mi	Concentration (mg/l)	
			Maximum	Minimum		Maximum daily	Weighted mean
July.....1929	1,646,500	24,000,000	774,000	76	20,000	5,400	
August.....	650,900	2,640,000	85,200	8.4	2,200	1,500	
September.....	405,000	947,000	31,600	3.0	790	866	
October.....	506,200	1,720,000	55,500	5.5	1,440	1,260	
November.....	449,000	1,660,000	55,300	5.3	1,390	1,370	
December.....	254,200	558,000	18,000	1.8	466	813	
January.....1930	297,100	751,000	24,200	2.4	627	936	
February.....	458,000	1,890,000	67,500	6.0	1,580	1,530	
March.....	1,478,900	24,100,000	777,000	77	20,100	6,040	
April.....	1,299,000	16,200,000	540,000	51	13,500	4,620	
May.....	1,273,300	14,300,000	461,000	45	11,900	4,160	
June.....	1,259,600	14,100,000	470,000	45	11,800	4,150	
July.....	825,400	5,010,000	162,000	16	4,180	2,250	
August.....	612,000	4,630,000	149,000	15	3,860	2,800	
September.....	591,500	5,270,000	176,000	17	4,400	3,300	

Suspended sediment

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment										Concentration(mg/l)		
		Lead (tons)		Daily loads (tcns)		Maximum		Minimum		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum							
Water Year 1930	9,304,200	90,189,000	90,189,000	247,000	247,000	287	287	75,300	75,300	3,590	3,590	3,590	3,590	
October.....	526,000	3,990,000	3,990,000	129,000	129,000	13	13	3,330	3,330	2,810	2,810	2,810	2,810	
November.....	431,300	1,560,000	1,560,000	52,000	52,000	5.0	5.0	1,300	1,300	1,340	1,340	1,340	1,340	
December.....	244,560	592,000	592,000	19,100	19,100	1.9	1.9	494	494	897	897	897	897	
Cal. Year 1930	9,296,660	92,393,000	92,393,000	253,000	253,000	294	294	77,100	77,100	3,680	3,680	3,680	3,680	
January....1931	269,180	663,000	663,000	21,400	21,400	2.1	2.1	553	553	912	912	912	912	
February.....	457,500	1,650,000	1,650,000	58,900	58,900	5.2	5.2	1,380	1,380	1,340	1,340	1,340	1,340	
March.....	520,300	1,960,000	1,960,000	63,200	63,200	6.2	6.2	1,640	1,640	1,400	1,400	1,400	1,400	
April.....	580,500	2,730,000	2,730,000	91,000	91,000	8.7	8.7	2,280	2,280	1,740	1,740	1,740	1,740	
May.....	453,500	1,510,000	1,510,000	48,700	48,700	4.8	4.8	1,260	1,260	1,230	1,230	1,230	1,230	
June.....	982,500	8,490,000	8,490,000	283,000	283,000	27	27	7,090	7,090	3,200	3,200	3,200	3,200	
July.....	680,300	3,634,000	3,634,000	117,000	117,000	12	12	3,030	3,030	1,980	1,980	1,980	1,980	
August.....	334,450	930,000	930,000	30,000	30,000	3.0	3.0	776	776	1,030	1,030	1,030	1,030	
September.....	251,820	600,000	600,000	20,000	20,000	1.9	1.9	501	501	882	882	882	882	
Water Year 1931	5,731,910	28,309,000	28,309,000	77,600	77,600	90	90	23,600	23,600	1,830	1,830	1,830	1,830	
October.....	527,000	747,000	747,000	24,100	24,100	2.4	2.4	624	624	525	525	525	525	
November.....	432,000	840,000	840,000	28,000	28,000	2.7	2.7	701	701	720	720	720	720	
December.....	244,590	558,000	558,000	18,000	18,000	1.8	1.8	466	466	845	845	845	845	
Cal. Year 1931	5,733,640	24,312,000	24,312,000	66,600	66,600	77	77	20,300	20,300	1,570	1,570	1,570	1,570	
January....1932	269,080	558,000	558,000	18,000	18,000	1.8	1.8	466	466	768	768	768	768	
February.....	456,400	609,000	609,000	21,000	21,000	1.9	1.9	508	508	494	494	494	494	
March.....	520,800	5,570,000	5,570,000	180,000	180,000	18	18	4,650	4,650	3,960	3,960	3,960	3,960	
April.....	582,000	9,009,000	9,009,000	300,000	300,000	29	29	7,520	7,520	5,730	5,730	5,730	5,730	
May.....	452,600	15,615,000	15,615,000	504,000	504,000	50	50	13,000	13,000	12,800	12,800	12,800	12,800	
June.....	984,000	46,476,000	46,476,000	1,550,000	1,550,000	148	148	38,800	38,800	17,500	17,500	17,500	17,500	
October....1954	922,000	2,195,500	2,195,500	90,700	90,700	7.0	7.0	1,830	1,830	882	882	882	882	
November.....	369,900	366,620	366,620	20,000	20,000	1.2	1.2	306	306	367	367	367	367	
December.....	363,450	382,360	382,360	15,400	15,400	1.2	1.2	319	319	390	390	390	390	
January....1955	273,400	275,600	275,600	12,400	12,400	.88	.88	230	230	373	373	373	373	
February.....	256,500	260,200	260,200	9,290	9,290	.83	.83	217	217	376	376	376	376	
March.....	591,900	757,200	757,200	51,600	51,600	2.5	2.5	665	665	499	499	499	499	
April.....	769,200	1,127,600	1,127,600	41,800	41,800	3.6	3.6	941	941	543	543	543	543	
May.....	909,100	1,445,100	1,445,100	64,900	64,900	4.6	4.6	1,210	1,210	589	589	589	589	
June.....	878,800	1,321,300	1,321,300	65,100	65,100	4.2	4.2	1,100	1,100	557	557	557	557	
July.....	877,200	1,157,300	1,157,300	59,200	59,200	3.7	3.7	966	966	489	489	489	489	
August.....	913,100	1,165,150	1,165,150	56,700	56,700	3.7	3.7	973	973	473	473	473	473	

06486000 MISSOURI RIVER AT SIOUX CITY, ICWA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tcns)	Daily loads (tcns)			Tons per sq mi	Concentration (mg/l)		
			Maximum	Minimum	Mean		Maximum daily	Weighted mean	Weighted mean
September.....	995,600	1,640,600	78,800	33,700	54,700	5.2	1,370	.....	610
Water Year 1955	8,120,150	12,134,530	90,700	5,600	33,200	39	10,100	.....	553
October.....	988,900	1,310,600	53,500	33,400	42,300	4.2	1,090	.....	491
November.....	366,650	429,190	41,800	7,130	14,300	1.4	358	.....	434
December.....	293,250	327,600	14,200	9,000	10,600	1.0	273	.....	414
Cal. Year 1955	8,113,600	11,257,440	78,800	5,600	30,800	36	9,400	.....	514
January.....1956	279,150	309,500	10,700	8,800	9,980	.98	258	.....	411
February.....	271,400	302,200	13,100	9,400	10,400	.96	252	.....	412
March.....	735,900	1,642,300	93,000	13,100	53,000	5.2	1,370	.....	827
April.....	894,600	2,315,800	91,800	63,500	77,200	7.4	1,930	.....	959
May.....	917,000	1,722,500	82,600	38,600	55,600	5.5	1,440	.....	696
June.....	913,600	1,907,100	219,000	27,100	63,600	6.1	1,590	.....	773
July.....	944,200	1,468,500	83,300	30,400	47,400	4.7	1,230	.....	576
August.....	1,039,100	1,228,100	57,200	31,700	39,600	3.9	1,030	.....	438
September.....	1,009,500	1,184,700	49,700	28,500	39,500	3.8	989	.....	435
Water Year 1956	8,653,250	14,148,090	219,000	7,130	38,700	45	11,800	.....	606
October.....	837,000	951,800	42,300	14,800	30,700	3.0	794	.....	421
November.....	367,410	370,040	17,600	6,640	12,300	1.2	309	.....	373
December.....	285,720	256,430	13,500	6,080	8,270	.82	214	.....	332
Cal. Year 1956	8,494,580	13,658,670	219,000	6,080	37,300	43	11,400	.....	596
January.....1957	269,400	236,150	9,250	4,550	7,620	.75	197	.....	325
February.....	253,700	226,340	10,700	6,320	8,080	.72	189	.....	330
March.....	283,170	252,770	12,000	6,250	8,150	.80	211	.....	331
April.....	523,390	753,820	57,800	7,660	25,100	2.4	629	.....	533
May.....	853,200	1,091,700	52,400	15,600	35,200	3.5	911	.....	474
June.....	803,500	1,208,800	77,100	14,400	40,300	3.8	1,010	.....	557
July.....	932,000	1,256,800	70,600	14,000	40,500	4.0	1,050	.....	499
August.....	955,200	703,300	26,500	18,500	22,700	2.2	587	.....	273
September.....	852,700	739,200	32,400	17,600	24,600	2.3	617	.....	321
Water Year 1957	7,216,390	8,047,150	77,100	4,550	22,000	26	6,720	.....	413
October.....	905,000	939,800	53,100	14,900	30,300	3.0	784	.....	385
November.....	379,710	270,730	17,000	2,770	9,020	.86	226	.....	264
December.....	261,790	142,440	7,200	700	4,590	.45	119	.....	202
Cal. Year 1957	7,272,760	7,821,850	77,100	700	21,400	25	6,530	.....	398

Suspended sediment

Mcnth	Water discharge (cfs-days)	Lead (tons)	Daily loads (tons)		Mean	Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Maximum	Minimum				Maximum daily	Weighted mean
January...1958	283,610	185,380	8,000	3,000	5,980	.59	155	.....	242
February.....	271,500	191,510	12,500	3,000	6,840	.61	160	.....	261
March.....	314,050	320,300	24,600	7,600	10,300	1.0	267	.....	378
April.....	735,200	863,900	42,800	15,400	28,800	2.7	721	.....	435
May.....	831,000	829,000	32,600	18,400	26,700	2.6	692	.....	369
June.....	838,100	930,700	46,800	19,900	31,700	3.0	777	.....	411
July.....	833,700	1,027,800	55,000	20,500	33,200	3.3	858	.....	457
August.....	849,100	657,500	30,300	12,400	21,200	2.1	549	.....	287
September.....	851,400	946,700	38,100	24,700	31,600	3.0	790	.....	412
Water Year 1958	7,354,160	7,306,160	55,000	700	20,000	23	6,100	.....	368
October.....	918,100	1,163,100	43,900	33,200	37,500	3.7	971	.....	469
November.....	329,100	408,100	34,100	8,700	13,600	1.3	341	.....	459
December.....	293,390	425,200	18,300	8,400	13,700	1.4	355	.....	537
Cal. Year 1958	7,348,250	7,949,590	55,000	3,000	21,800	25	6,640	.....	401
January.....1959	317,300	470,700	18,700	12,100	15,200	1.5	393	.....	549
February.....	304,300	459,700	19,400	13,300	16,400	1.5	384	.....	560
March.....	362,800	360,700	33,000	15,900	18,100	1.8	468	.....	572
April.....	775,100	1,267,500	60,300	33,100	42,300	4.0	1,060	.....	606
May.....	788,400	1,326,500	120,000	22,800	42,800	4.2	1,110	.....	623
June.....	758,200	1,282,300	105,000	18,800	42,700	4.1	1,070	.....	626
July.....	838,200	801,500	38,000	13,800	25,900	2.5	669	.....	354
August.....	919,600	1,131,700	54,400	21,500	36,500	3.6	945	.....	456
September.....	917,500	1,344,200	53,500	33,400	44,800	4.3	1,120	.....	543
Water Year 1959	7,521,990	10,642,000	120,000	8,400	29,200	34	8,880	.....	524
October.....	864,200	1,409,900	69,100	31,300	45,500	4.5	1,180	.....	604
November.....	346,000	609,300	62,600	6,430	20,300	1.9	509	.....	652
December.....	284,810	599,500	26,700	13,800	19,300	1.9	500	.....	780
Cal. Year 1959	7,476,410	11,264,300	120,000	6,430	30,900	36	9,400	.....	558
January.....1960	281,800	519,000	.....	.....	16,700	1.6	433	.....	682
February.....	254,400	452,000	.....	.....	15,600	1.4	377	.....	658
March.....	413,200	1,335,000	.....	.....	43,100	4.2	1,110	.....	1,200
April.....	1,272,100	4,825,900	1,010,000	25,900	161,000	15	4,030	.....	1,410
May.....	746,300	1,294,900	75,900	23,800	41,800	4.1	1,080	.....	643
June.....	698,100	751,600	75,400	15,900	26,400	2.5	661	.....	420
July.....	843,800	717,500	27,800	16,600	23,100	2.3	599	.....	315
August.....	948,400	778,500	50,700	16,200	25,100	2.5	650	.....	304
September.....	874,700	740,800	30,000	18,900	24,700	2.4	618	.....	314

064866000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment			Tons per sq mi	Acres	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Water Year 1960	7,827,810	14,073,900	1,010,000		38,500	45	11,700		666
October.....	851,200	694,400	26,300	16,400	22,400	2.2	580		302
November.....	602,490	516,180	32,800	3,720	17,200	1.6	431		317
December.....	284,500	122,000			3,940	.39	102		159
Cal. Year 1960	8,070,990	12,787,780	1,010,000		34,900	41	10,700		587
January.....	291,000	124,000			4,000	.39	104		158
February.....	226,400	85,000			3,040	.27	71		139
March.....	454,600	760,320	89,200	4,730	24,500	2.4	635		619
April.....	704,400	863,500	39,200	13,100	28,800	2.7	721		454
May.....	808,200	874,600	44,000	12,600	28,200	2.8	730		401
June.....	729,200	597,400	28,000	12,700	19,900	1.9	499		303
July.....	908,600	782,200	42,100	15,500	25,200	2.5	653		319
August.....	902,600	575,100	25,500	12,700	18,600	1.8	480		236
September.....	858,700	528,100	25,500	11,100	17,600	1.7	441		228
Water Year 1961	7,621,890	6,522,800	89,200		17,900	21	5,440		317
October.....	444,990	300,610	24,500	2,700	9,700	.96	251		250
November.....	208,540	81,850	3,080	2,260	2,730	.26	68		145
December.....	256,400	150,000			4,840	.48	125		217
Cal. Year 1961	6,793,630	5,722,680	89,200		15,700	18	4,780		312
January.....	275,700	165,000			5,320	.52	138		222
February.....	236,200	130,000			4,640	.41	109		204
March.....	440,000	1,047,040	264,000	2,630	33,800	3.3	874		881
April.....	1,160,300	3,351,600	414,000	12,000	112,000	11	2,800		1,070
May.....	738,500	1,966,400	262,000	10,600	63,400	6.3	1,640		986
June.....	954,900	2,406,700	320,000	14,300	80,200	7.7	2,010		933
July.....	1,026,600	1,210,100	90,500	15,400	39,000	3.8	1,010		437
August.....	794,800	839,100	43,500	14,500	27,100	2.7	700		391
September.....	773,700	760,000	34,000	14,000	25,300	2.4	634		364
Water Year 1962	7,310,630	12,408,400	414,000		34,000	39	10,400		629
October.....	812,100	890,300	32,100	24,100	28,700	2.8	743		406
November.....	728,580	897,700	36,800	6,420	29,900	2.9	749		456
December.....	270,730	150,000			4,840	.48	125		205
Cal. Year 1962	8,212,110	13,813,940	414,000		37,800	44	11,500		623
January.....	277,100	54,000			3,030	.30	78		126
February.....	176,200	39,000			1,390	.12	33		82

06486600 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

Suspended sediment

Mcnth	Water discharge (cfs-days)	Lead (tons)	Daily loads (tcns)			Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
March.....	346,990	274,380	34,000	1,060	8,850	.87	229	.....	293
April.....	782,800	944,200	48,900	23,800	31,500	3.0	788	.....	447
May.....	838,000	761,800	27,800	19,600	24,600	2.4	636	.....	337
June.....	791,300	667,700	39,100	15,200	22,300	2.1	557	.....	313
July.....	937,100	880,400	34,000	22,400	28,400	2.8	735	.....	348
August.....	930,900	706,600	29,800	18,600	22,800	2.2	590	.....	281
September.....	849,200	651,100	25,600	18,000	21,700	2.1	543	.....	284
Water Year 1963	7,741,000	6,957,180	48,900	.....	19,100	22	5,810	.....	333
October.....	915,700	880,100	35,600	23,300	28,400	2.8	735	.....	356
November.....	769,140	984,420	44,600	4,010	32,800	3.1	822	.....	474
December.....	259,690	180,000	.....	.....	5,810	.57	150	.....	257
Cal. Year 1963	7,874,120	7,063,700	48,900	.....	19,400	22	5,900	.....	332
January.....1964	226,800	142,000	.....	.....	4,580	.45	119	.....	232
February.....	223,660	145,000	.....	.....	5,000	.46	121	.....	240
March.....	407,740	507,750	48,600	2,830	16,400	1.6	424	.....	461
April.....	787,800	1,076,500	51,900	20,500	35,900	3.4	899	.....	506
May.....	814,400	784,500	34,200	18,800	25,300	2.5	655	.....	337
June.....	825,400	750,000	31,800	17,700	25,000	2.4	626	.....	337
July.....	882,600	687,600	38,800	16,400	22,200	2.2	574	.....	289
August.....	1,005,100	1,034,100	41,900	24,700	33,400	3.3	863	.....	381
September.....	845,800	777,900	33,000	17,200	25,900	2.5	649	.....	341
Water Year 1964	7,963,830	7,945,870	51,900	.....	21,700	25	6,640	.....	370
October.....	931,400	1,131,100	43,800	27,400	36,500	3.6	944	.....	450
November.....	835,220	1,117,620	54,300	3,850	37,300	3.6	933	.....	496
December.....	292,490	165,220	9,300	2,300	5,330	.53	138	.....	209
Cal. Year 1964	8,078,410	8,319,290	54,300	.....	22,700	26	6,940	.....	381
January.....1965	266,800	94,600	5,000	1,400	3,050	.30	79	.....	131
February.....	242,300	76,980	8,150	1,230	2,750	.24	64	.....	118
March.....	325,500	203,550	13,800	3,850	6,570	.65	170	.....	232
April.....	812,600	1,454,300	110,000	15,100	48,500	4.6	1,210	.....	663
May.....	887,500	946,200	38,000	23,500	30,500	3.0	790	.....	395
June.....	874,200	1,127,700	80,000	25,900	37,600	3.6	941	.....	478
July.....	906,000	851,100	44,900	16,300	28,700	2.8	744	.....	364
August.....	1,000,000	1,052,100	48,300	25,200	33,900	3.3	878	.....	390
September.....	895,000	566,300	57,700	22,800	32,200	3.1	807	.....	400
Water Year 1965	8,269,010	9,226,770	110,000	1,230	25,300	29	7,700	.....	413

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum			Maximum daily	Weighted mean
			Minimum	Maximum						
October.....	974,700	1,120,100	44,500	29,400	36,100	3.6	935	.....	426
November.....	880,400	1,201,600	55,800	21,300	40,100	3.8	1,000	.....	505
December.....	572,000	600,200	25,500	16,000	19,400	1.9	501	.....	389
Cal. Year 1965	8,637,000	9,734,730	110,000	1,230	26,700	31	8,130	.....	417
January....1966	522,600	488,600	18,000	9,000	15,800	1.6	408	.....	346
February.....	592,000	1,080,100	111,000	10,500	38,600	3.4	902	.....	676
March.....	686,300	1,011,720	54,000	8,020	32,600	3.2	844	.....	546
April.....	865,000	1,200,500	51,300	33,800	40,000	3.8	1,000	.....	514
May.....	926,900	1,192,100	48,800	25,800	38,500	3.8	995	.....	476
June.....	964,000	1,157,000	69,000	20,400	38,600	3.7	966	.....	445
July.....	1,053,600	1,100,100	83,800	20,600	35,500	3.5	918	.....	387
August.....	1,012,100	882,300	46,100	16,600	28,500	2.8	736	.....	323
September.....	958,100	756,500	33,900	21,500	25,200	2.4	632	.....	293
Water Year 1966	10,007,700	11,791,220	111,000	8,020	32,300	37	9,840	.....	436
October.....	1,021,600	1,357,700	62,000	25,100	43,800	4.3	1,130	.....	492
November.....	930,900	1,482,590	58,900	9,990	49,400	4.7	1,240	.....	590
December.....	419,400	375,650	17,300	7,700	12,100	1.2	314	.....	332
Cal. Year 1966	9,952,500	12,085,260	111,000	7,700	33,100	38	10,100	.....	450
January....1967	351,500	294,480	16,800	1,480	9,500	.94	246	.....	310
February.....	271,480	176,350	11,200	2,370	6,370	.57	149	.....	243
March.....	600,780	1,079,790	87,700	3,200	34,800	3.4	901	.....	666
April.....	944,100	1,463,300	78,200	34,900	48,800	4.7	1,220	.....	574
May.....	1,032,500	1,468,800	63,700	36,800	47,400	4.7	1,230	.....	527
June.....	900,300	2,575,100	331,000	25,400	85,800	8.2	2,150	.....	1,060
July.....	1,010,200	1,101,000	132,000	15,800	35,500	3.5	919	.....	404
August.....	1,104,400	565,900	35,700	27,900	31,200	3.1	806	.....	324
September.....	1,060,000	993,600	39,600	27,100	33,100	3.2	829	.....	347
Water Year 1967	9,647,160	13,336,260	331,000	1,480	36,500	42	11,100	.....	512
October.....	1,062,900	1,438,600	60,400	29,500	46,400	4.6	1,200	.....	501
November.....	938,400	1,522,000	63,300	17,000	50,700	4.8	1,270	.....	601
December.....	524,400	588,000	29,200	7,520	19,000	1.9	491	.....	415
Cal. Year 1967	9,800,960	13,668,920	331,000	1,480	37,400	43	11,400	.....	517
January....1968	456,260	518,200	27,200	8,420	16,700	1.6	433	.....	421
February.....	509,200	24,300	24,300	12,500	18,100	1.7	438	.....	359
March.....	745,300	1,123,900	61,700	15,600	36,300	3.6	938	.....	582
April.....	986,600	1,367,100	63,500	31,400	45,600	4.3	1,140	.....	513

0648600 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Lead (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
May.....	1,017,000	1,058,400	38,900	28,800	34,100	3.4	883	.....	385
June.....	1,013,500	867,800	34,000	22,100	28,900	2.8	724	.....	317
July.....	1,080,100	850,100	32,900	23,000	27,400	2.7	710	.....	292
August.....	1,052,000	781,800	30,600	19,300	25,200	2.5	653	.....	275
September.....	954,100	735,600	29,300	21,500	24,500	2.3	614	.....	286
Water Year 1968	10,339,760	11,376,700	63,500	7,520	31,100	36	9,500	.....	408
October.....	990,200	864,300	33,700	25,200	27,900	2.7	721	.....	323
November.....	969,100	1,340,900	55,600	28,300	44,700	4.3	1,120	.....	512
December.....	525,220	658,270	54,900	2,980	21,200	2.1	549	.....	464
Cal. Year 1968	10,298,580	10,691,570	63,500	2,980	29,200	34	8,920	.....	384
January.....1969	512,000	501,800	20,600	13,000	16,200	1.6	419	.....	363
February.....	515,500	516,400	24,600	12,500	18,400	1.6	431	.....	371
March.....	624,000	632,100	44,900	16,100	20,400	2.0	528	.....	375
April.....	1,529,200	5,890,900	668,000	64,300	156,000	19	4,920	.....	1,430
May.....	1,275,800	1,461,600	67,700	37,400	47,100	4.6	1,220	.....	424
June.....	1,139,100	1,306,500	68,700	32,900	43,600	4.2	1,090	.....	425
July.....	1,196,100	1,219,000	54,700	22,200	39,300	3.9	1,020	.....	377
August.....	1,642,000	1,735,100	66,600	49,100	56,100	5.5	1,450	.....	392
September.....	1,590,800	1,709,100	64,500	45,600	57,000	5.4	1,430	.....	398
Water Year 1969	12,509,020	17,835,570	668,000	2,980	48,900	57	14,900	.....	528
October.....	1,437,200	2,016,700	76,700	48,600	65,100	6.4	1,680	.....	520
November.....	1,212,000	2,164,700	96,200	44,500	72,200	6.9	1,810	.....	662
December.....	661,600	994,700	54,400	22,900	32,100	3.2	830	.....	557
Cal. Year 1969	13,335,300	20,152,600	668,000	12,500	55,200	64	16,800	.....	560
January.....1970	477,900	551,660	27,200	6,320	17,800	1.8	460	.....	428
February.....	527,300	587,900	40,100	14,400	21,000	1.9	491	.....	413
March.....	889,100	1,634,800	66,700	38,500	52,700	5.2	1,360	.....	681
April.....	993,600	1,232,100	54,700	27,800	41,100	3.9	1,030	.....	459
May.....	1,034,500	903,500	44,300	22,900	29,100	2.9	754	.....	323
June.....	1,118,100	935,800	39,700	21,400	31,200	3.0	781	.....	310
July.....	1,243,600	1,235,400	48,100	28,600	39,900	3.9	1,030	.....	368
August.....	1,390,200	1,405,100	53,000	38,400	45,300	4.5	1,170	.....	374
September.....	1,247,800	1,205,600	46,700	36,000	40,300	3.8	1,010	.....	359
Water Year 1970	12,232,900	14,871,960	96,200	6,320	40,700	47	12,400	.....	450
October.....	1,308,400	1,694,700	71,500	35,500	54,700	5.4	1,410	.....	480
November.....	1,242,100	2,078,500	76,200	60,500	69,300	6.6	1,730	.....	620

06486000 MISSOURI RIVER AT SIOUX CITY, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment										Concentration (mg/l)	
		Load (tcns)		Daily loads (tcns)		Tons per sq mi		Acre-feet		Maximum daily		Weighted mean	
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
December.....	697,000	842,600	14,200	14,200	27,200	27,200	2.7	703	.....	.....	.....	.....	448
Cal. Year 1970	12,169,600	14,311,660	6,320	6,320	39,200	39,200	45	11,900	.....	.....	.....	.....	436
January.....	478,700	474,100	10,200	10,200	15,300	15,300	1.5	396	.....	.....	.....	.....	367
February.....	671,500	2,346,800	17,400	17,400	83,800	83,800	7.5	1,960	.....	.....	.....	.....	1,290
March.....	939,400	1,566,100	14,900	14,900	50,500	50,500	5.0	1,310	.....	.....	.....	.....	617
April.....	1,120,500	1,956,300	48,600	48,600	65,200	65,200	6.2	1,630	.....	.....	.....	.....	647
May.....	1,395,000	2,281,700	50,700	50,700	73,600	73,600	7.3	1,900	.....	.....	.....	.....	606
June.....	1,625,800	5,640,800	41,500	41,500	188,000	188,000	18	4,710	.....	.....	.....	.....	1,290
July.....	1,527,900	1,593,600	40,600	40,600	51,400	51,400	5.1	1,330	.....	.....	.....	.....	386
August.....	1,511,500	1,434,100	31,700	31,700	46,300	46,300	4.6	1,200	.....	.....	.....	.....	351
September.....	1,469,100	1,773,400	49,500	49,500	59,100	59,100	5.6	1,480	.....	.....	.....	.....	447
Water Year 1971	13,986,900	23,682,700	10,200	10,200	64,900	64,900	75	19,800	.....	.....	.....	.....	627
October.....	1,566,700	1,947,500	17,100	17,100	62,800	62,800	6.2	1,630	.....	.....	.....	.....	460
November.....	1,611,700	1,806,900	83,100	83,100	60,200	60,200	5.7	1,510	.....	.....	.....	.....	415
December.....	900,200	842,500	12,400	12,400	27,200	27,200	2.7	703	.....	.....	.....	.....	347
Cal. Year 1971	14,818,000	23,663,800	10,200	10,200	64,800	64,800	75	19,800	.....	.....	.....	.....	591
January.....	614,100	582,400	9,520	9,520	18,800	18,800	1.9	486	.....	.....	.....	.....	351
February.....	598,600	504,550	5,320	5,320	17,400	17,400	1.6	421	.....	.....	.....	.....	312
March.....	994,600	2,207,500	18,600	18,600	71,200	71,200	7.0	1,840	.....	.....	.....	.....	822
April.....	1,291,000	3,425,000	83,200	83,200	114,000	114,000	11	2,860	.....	.....	.....	.....	984
May.....	1,421,400	2,287,000	50,200	50,200	73,800	73,800	7.3	1,910	.....	.....	.....	.....	596
June.....	1,431,900	2,097,700	52,500	52,500	69,900	69,900	6.7	1,750	.....	.....	.....	.....	543
July.....	1,469,500	2,323,300	44,300	44,300	74,900	74,900	7.4	1,940	.....	.....	.....	.....	586
August.....	1,535,500	1,527,200	91,900	91,900	49,300	49,300	4.9	1,270	.....	.....	.....	.....	368
September.....	1,477,500	2,010,100	81,600	81,600	67,000	67,000	6.4	1,680	.....	.....	.....	.....	504
Water Year 1972	14,912,700	21,565,650	188,000	188,000	58,900	58,900	69	18,000	.....	.....	.....	.....	536
October.....	1,572,200	2,473,600	119,000	119,000	79,800	79,800	7.9	2,060	.....	.....	.....	.....	583
November.....	1,451,900	3,554,900	222,000	222,000	118,000	118,000	11	2,970	.....	.....	.....	.....	907
December.....	730,900	1,012,600	51,100	51,100	32,700	32,700	3.2	845	.....	.....	.....	.....	513
Cal. Year 1972	14,589,100	24,009,850	222,000	222,000	65,600	65,600	76	20,000	.....	.....	.....	.....	610
January.....	705,800	1,281,200	21,500	21,500	41,300	41,300	4.1	1,070	.....	.....	.....	.....	672
February.....	643,600	1,241,200	32,400	32,400	44,300	44,300	3.9	1,040	.....	.....	.....	.....	714
March.....	995,300	1,865,400	19,500	19,500	60,300	60,300	5.9	1,560	.....	.....	.....	.....	696
April.....	826,400	888,400	16,300	16,300	29,600	29,600	2.8	742	.....	.....	.....	.....	398
May.....	938,700	815,200	17,100	17,100	26,300	26,300	2.6	680	.....	.....	.....	.....	322
June.....	926,500	729,500	16,200	16,200	24,300	24,300	2.3	609	.....	.....	.....	.....	292

06486000 MISSOURI RIVER AT SICUX CITY, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Icad (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)
			Daily loads (tcns)		Mean	Maximum	Minimum			
			Maximum	Minimum						
July.....	1,017,700	769,000	38,300	14,800	24,800	24,800	2.4	642	409	
August.....	997,000	767,600	36,500	13,800	24,800	24,800	2.4	641	423	
September.....	958,000	873,200	54,900	19,400	29,100	29,100	2.8	729	588	
Water Year 1973	11,764,000	16,275,800	222,000	13,800	44,600	44,600	52	13,600	1,620	

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis		
			Concentration (mg/L)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters				
Oct. 8, 1971	49400	14.5	491	65500	19	42	87	100	S
Oct. 11,	48900	15.5	619	81700	5	21	42	87	VPWC
Oct. 25,	51500	14.5	610	84800		20			S
Nov. 9,	52300	8.5	918	130000	3	13	33	86	VPWC
Dec. 7,	38500	2.0	532	55300	2	21	49	91	VPWC
Mar. 7, 1972	28100	1.0	434	32900	16	42	60	88	VPWC
Mar. 14,	29400	5.5	897	71200		65			S
Mar. 22,	40500	5.0	1640	179000		15			S
Apr. 2,	42300	5.5	864	98700		16			S
Apr. 10,	43900	9.0	1070	127000		14			S
Apr. 13,	43900	6.5	672	79700		33			S
Apr. 16,	41100	13.0	1120	124000		15			S
May 2,	46100	6.5	1390	173000	23	66	78	96	VPWC
May 5,	49800	10.0	677	91000	7	26	49	91	VPWC
May 10,	44300	11.0	556	66500		16			S
May 14,	45200	14.5	475	58000		19			S
May 28,	50800	18.0	510	70000	13	38	61	95	VPWC
June 1,	47900	18.5	469	60700		22			S
June 4,	49000	21.0	426	56400		25			S
June 7,	48200	24.0	500	65100		26			S
June 12,	50000	21.0	448	60500	3	20	41	89	VPWC
June 18,	46300	21.0	530	66300		21			S
June 24,	44600	18.0	438	52700	5	23	43	89	VPWC
June 28,	43400	20.5	1100	129000		10			S
July 3,	43300	18.0	374	43700		36	51	94	V
July 18,	50000	22.0	1080	146000		11			S
Aug. 4,	51500	19.0	389	54100		25	42	97	V
Aug. 22,	51500	16.0	501	69700		27			S
Sept. 5,	49800	22.5	457	61400		20	38	94	V
Oct. 20, 1972	53200	6.5	684	98200		21	35	87	V
Oct. 30,	53500	10.0	174	25100		58			S
Nov. 6,	52600	7.5	1100	156000		10			S
Nov. 24,	40800	5.0	877	96600		15	35	83	V
Dec. 1,	36200	3.0	530	51800		19			S
Dec. 19,	19300	1.0	631	32900		13	25	71	V

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis			
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters					
Jan. 15, 1973	23700	.5	685	43800	18	29	88	100	V	
Jan. 26,	22800	2.0	741	45600	19	19			S	
Jan. 20,	22400	1.0	693	41900	19				S	
Feb. 27,	23700	1.0	619	39600	22	39	91	100	V	
Mar. 6,	31100	3.0	1530	128000	23	30	33	42	56	VPWC
Mar. 22,	29700	6.5	466	37400						S
Apr. 6,	24000	7.5	301	19500						S
Apr. 17,	30400	10.0	486	39900						V
May 4,	32100	10.0	389	33700						V
May 21,	29900	19.5	330	26600						S
June 1,	25600	18.0	216	14900						V
June 22,	29600	22.0	244	19500						S
July 2,	33400	21.5	265	23900						S
July 6,	32600	24.5	285	25100						V
Aug. 2,	32100	22.0	393	34100						V
Aug. 16,	36600	26.5	355	35100						S
Sept. 6,	34700	21.0	413	38700						V
Sept. 17,	31200	15.5	335	28200						S

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED
 PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
July 7, 1972	48000	22.0	3		3	48	94	100							V
Aug. 4,	51500	22.0	3		1	51	99	100							V
Sept. 5,	49800	22.5	3		3	55	95	100							V
Oct. 17, 1972	46500	10.5	3	0	1	37	85	99	100						SV
Nov. 2,	52800	5.5	3	0	1	23	94	98	99	100					SV
Nov. 24,	40800	5.0	3	1	3	25	79	96	98	100					SV
Dec. 19,	19300	1.0	3	0	1	38	87	91	91	98	100				SV
Jan. 15, 1973	23700	.5	3	0	2	38	91	100							V
Feb. 20,	22400	1.0	3	0	1	33	96	99	99	100					SV
Mar. 13,	34400	7.5	3	0	2	55	98	100							V
Apr. 10,	25000	1.0	3	0	3	37	99	99	100						SV
May 4,	32100	10.0	3	0	4	50	99	100							V
June 8,	30600	21.5	3	1	6	57	96	100							V
July 6,	32600	24.5	3	0	1	36	97	100							V
Aug. 2,	32100	22.0	3	0	1	40	85	92	95	98	100				SV
Sept. 6,	34700	21.0	3	0	1	26	82	93	97	99	100				SV

06600500 FLOYD RIVER AT JAMES, ICWA

LOCATION.--Lat 42°34'36", long 96°18'43", in SE 1/4 SE 1/4 sec.30, T.90 N., R.46 W., Plymouth County, on upstream side of bridge on county highway C70, 30 ft (9 m) above gaging station, 0.2 mi (0.3 km) east of James, 15.1 mi (24.3 km) downstream from West Branch Floyd River, and at mile 9.0 (14.5 km).

DRAINAGE AREA.--882 mi² (2,284 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--7 years (1954-56, 1968-73), 334,000 tons (303,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 15,300 mg/l July 10, 1955; minimum daily, not determined.
Sediment discharge: Maximum daily, 171,000 tons (155,000 tonnes) June 22, 1954; minimum daily, 0 ton (0.00 tonne) several days in 1956, 1957.

REMARKS.--Flow affected by ice during winter months each year. Records of suspended-sediment furnished by the Corps of Engineers for the period 1954-57.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1954a	A	14,100b	*	May 25	June 22	171,000	*	June 22	
1955	A	15,300b	*	July 10	July 10	20,900	2	July 10	several days
1956	A	2,530b	*	June 27	Aug. 7	770	0	Aug. 7	several days
1969	2145	9,470	6	Feb. 26	June 25	54,100	.34	June 25	Feb. 5, 6
1970	2155	10,400	16	Feb. 9	May 28	40,400	1.2	May 28	Jan. 16-18
1971	2165	11,900	5	Feb. 13, 14	June 9	105,000	.20	June 9	Feb. 13
1972	+	8,850	15	Nov. 28	June 8	48,300	.53	June 8	Feb. 15
1973	+	7,730	11	Dec. 15, 21	July 9	44,800	1.2	July 9	Dec. 15

A Published by Corps of Engineers

a March 16 to September 30

b Maximum measured concentration

* Not determined

+ Water Resources Data for Iowa, Part 2, Water Quality Records

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
April.....1954	5,199	15,550	1,530	90	518	18	13	.....	1,110
May.....	5,092	15,284	3,690	25	493	17	13	.....	1,110
June.....	34,134	504,490	171,000	340	16,800	572	421	.....	5,470
July.....	5,550	4,217	350	56	136	4.8	3.5	.....	506
August.....	3,055	4,170	550	42	135	4.7	3.5	.....	584
September.....	2,060	3,246	310	28	108	3.7	2.7	.....	795
October.....	2,567	5,510	850	36	178	6.2	4.6	.....	101
November.....	1,760	478	32	6.0	16	.54	.40	.....	80
December.....	1,294	279	13	5.0	9.0	.32	.23	.....	78
January.....1955	1,205	252	14	3.0	8.1	.29	.21	.....	42
February.....	671	76	3.0	2.0	2.0	.09	.06	.....	1,160
March.....	5,360	16,742	5,220	5.0	540	19	14	.....	1,730
April.....	5,420	25,298	11,100	40	843	29	21	.....	831
May.....	3,509	7,874	1,890	23	254	8.9	6.6	.....	415
June.....	1,502	1,682	350	14	56	1.9	1.4	.....	4,930
July.....	1,755	23,341	20,900	16	753	26	19	.....	494
August.....	540.1	720	140	2.0	23	.82	.60	.....	153
September.....	317.2	131	8.0	2.0	4.4	.15	.11	.....	1,180
Water Year 1955	25,900.30	82,383	20,900	2.0	226	93	69	.....	224
October.....	516.7	313	99	2.0	10	.35	.26	.....	23
November.....	345.3	21	1.0	0	.70	.02	.02	.....	0
December.....	207	0	0	0	0	0	0	.....	1,330
Cal. Year 1955	21,348.30	76,450	20,900	0	209	87	64	.....	0
January.....1956	183.4	0	0	0	0	0	0	.....	407
February.....	208.5	0	0	0	0	0	0	.....	226
March.....	1,208	1,327	190	3.0	43	1.5	1.1	.....	414
April.....	983	599	84	5.0	20	.68	.50	.....	724
May.....	1,064	1,189	310	5.0	33	1.3	.99	.....	453
June.....	510.6	998	450	2.0	38	1.1	.83	.....	782
July.....	769.8	941	500	2.0	30	1.1	.79	.....	395
August.....	1,100.3	2,323	770	2.0	75	2.6	1.9	.....	89
September.....	170.1	35	2.0	1.0	1.2	.04	.03	.....	4
Water Year 1956	7,266.70	7,746	770	0	21	8.8	6.5	.....	0
October.....	187	45	2.0	1.0	1.5	.05	.04	.....	89
November.....	263.5	3	1.0	0	.10	0	0	.....	4
December.....	147.9	0	0	0	0	0	0	.....	0

Suspended sediment

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Mean	Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Maximum	Minimum				Maximum daily	Weighted mean
Cal. Year 1956	6,796.10	7,460	770	0	20	8.5	6.2		407
January.....1957	106	0	0	0	0	0	0		0
February.....	264.7	16	2.0	0	0	.02	.01		22
March.....	927	1,268	330	2.0	41	1.4	1.1		507
April.....	925	607	130	4.0	20	.69	.51		243
October.....1968	4,728	7,894.4	2,600	3.4	255	9.0	6.6	1,570	618
November.....	2,150	541.5	55	4.1	18	.61	.45	183	93
December.....	993	186.13	27	.45	6.0	.21	.16	226	69
January.....1969	443	53.65	4.3	.53	1.7	.06	.04	105	45
February.....	425	35.96	2.5	.34	1.3	.04	.03	65	31
March.....	10,306	22,898.12	4,920	.53	739	26	19	1,330	823
April.....	81,450	223,725	43,400	63	7,460	254	187	2,470	1,020
May.....	7,049	2,919	259	15	94	3.3	2.4	280	153
June.....	9,296	95,568	54,100	38	3,190	108	80	9,470	3,810
July.....	12,334	73,110	15,200	75	2,360	83	61	6,310	2,200
August.....	4,222	4,506	1,830	22	145	5.1	3.8	2,500	395
September.....	2,671	1,481.7	324	7.5	49	1.7	1.2	612	205
Water Year 1969	138,289.7	434,810.46	54,100	.34	1,190	493	363	9,470	1,160
October.....	1,791	504.8	28	9.9	16	.57	.42	179	104
November.....	1,702	572.6	49	4.5	19	.65	.48	302	125
December.....	1,185	310.3	39	2.2	10	.35	.26	376	97
Cal. Year 1969	132,874	425,685.13	54,100	.34	1,170	483	355	9,470	1,190
January.....1970	503	66.1	3.6	1.2	2.1	.07	.06	92	49
February.....	4,232	13,627.7	5,160	1.4	487	15	11	3,200	1,190
March.....	14,138	89,432	29,800	40	2,880	101	75	6,000	2,340
April.....	8,961	31,518	5,340	85	1,050	36	26	3,240	1,300
May.....	7,123	83,255	40,400	43	2,690	94	69	10,100	4,330
June.....	5,265	25,434	14,600	49	848	29	21	10,400	1,790
July.....	1,815	2,394	842	12	77	2.7	2.0	2,400	489
August.....	1,080	328.1	33	4.6	11	.37	.27	280	113
September.....	1,672	6,035.5	4,520	1.8	201	6.8	5.0	2,690	1,340
Water Year 1970	49,467	253,478.10	40,400	1.2	694	287	212	10,400	1,900
October.....	2,187	1,676.7	210	4.8	54	1.9	1.4	585	284
November.....	2,254	992.3	61	8.3	33	1.1	.83	248	163
December.....	1,174	452.7	85	2.5	15	.51	.38	348	143

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
Cal. Year 1970	50,404	255,212.10	40,400	1.2	699	289	213	10,400	1,880	
January...1971	638	94	6.0	1.4	3.0	.11	.08	111	55	
February.....	26,704	104,854.5	50,500	.20	3,740	119	88	2,080	1,450	
March.....	6,166	31,681	13,400	27	1,020	36	26	5,670	1,900	
April.....	4,641	7,155	3,280	23	239	8.1	6.0	2,340	571	
May.....	2,095	1,564	602	13	50	1.8	1.3	2,470	276	
June.....	43,396	635,313	105,000	27	21,200	720	530	11,900	5,420	
July.....	5,775	14,783	5,060	37	477	17	12	3,650	948	
August.....	1,869	896	177	13	29	1.0	.75	996	178	
September.....	1,190	342.2	23	4.0	11	.39	.29	213	107	
Water Year 1971	98,089	799,804.40	105,000	.20	2,190	907	668	11,900	3,020	
October.....	1,130	292.4	49	3.3	9.4	.33	.24	261	96	
November.....	1,342	250.1	24	1.7	8.3	.28	.21	230	69	
December.....	881	123.21	12	.91	4.0	.14	.10	124	52	
Cal. Year 1971	95,827	797,348.41	105,000	.20	2,180	904	666	11,900	3,080	
January...1972	409.2	384.9	106	1.2	12	.44	.32	3,570	348	
February.....	625.8	464.33	425	.53	16	.53	.39	525	275	
March.....	16,035	89,400	25,800	11	2,880	101	75	3,670	2,060	
April.....	2,903	1,484.6	285	8.7	49	1.7	1.2	700	189	
May.....	12,323	67,012	15,200	227	2,160	76	56	6,690	2,010	
June.....	11,284	88,937	48,300	68	2,960	101	74	8,850	2,920	
July.....	7,966	46,003	10,200	36	1,480	52	38	7,270	2,140	
August.....	3,861	4,882	708	16	157	5.5	4.1	1,750	468	
September.....	1,590	454.3	53	7.7	15	.52	.38	283	106	
Water Year 1972	60,350	299,687.84	48,300	.53	819	340	250	8,850	1,840	
October.....	1,757	504.9	38	9.4	16	.57	.42	208	106	
November.....	3,572	3,482	394	17	116	3.9	2.9	789	361	
December.....	4,865	26,314	14,300	1.2	849	30	22	3,520	2,000	
Cal. Year 1972	67,191	329,323.03	48,300	.53	900	373	275	8,850	1,820	
January...1973	11,134	22,266	8,420	15	718	25	19	1,400	741	
February.....	5,069	5,821	2,590	14	207	6.6	4.9	1,200	425	
March.....	39,531	245,260	39,200	560	7,910	278	205	3,980	2,300	
April.....	8,299	7,173	682	82	239	8.1	6.0	654	320	
May.....	5,564	3,405	503	21	110	3.9	2.8	672	227	
June.....	7,985	26,981	11,600	65	899	31	23	5,060	1,250	
July.....	13,543	101,886	44,800	69	3,290	116	85	7,730	2,790	
August.....	5,109	17,815	9,270	13	575	20	15	3,300	1,290	

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)
			Maximum	Minimum	Mean	Tons per sq mi	Acre-feet	
September.....	2,439	1,009.3	237	7.0	34	1.1	.84	627
Water Year 1973	108,867	461,917.20	44,800	1.2	1,270	524	386	7,730

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED
 PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment										Methods of analysis		
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters		Percent finer than indicated size, in millimeters		Percent finer than indicated size, in millimeters		Percent finer than indicated size, in millimeters				
Apr. 7, 1969	9640	11.0	2490	64800	26	31	35	37	46	51	52	53	80	100	VPWC
Apr. 7,	9640	11.0	2490	64800	20	26	31	36	42						VPN
June 25,	2380	19.0	16200	106000	38	46	53	66	85	95	97	98	100		VPWC
July 4,	663	21.0	4790	8570	61	71		90	95	98	100				SPWC
July 9,	1730	22.0	7040	32800	57	65	75	81	86	91	94	96	99	100	VPWC
Mar. 4, 1970	4800	1.0	2530	32800	42	46	49	59	66	82	84	96	100		VPWC
Mar. 25,	446	3.0	4150	5000	41	46	50	70	92	99	100				VPWC
Apr. 4,	681	1.0	2390	4390	37	45	55	67	81	96	98	99	100		VPWC
May 13,	271	13.5	4110	3010	48	60	76	86	92	99	100				SPWC
May 28,	1440	18.5	18000	70000	58	65	79	88	92	99	100				VPWC
June 6,	684	19.5	18600	34400	46	58	68	81	95	100					VPWC
July 16,	122	20.5	1920	632	65	73	74	80	91	95	100				SPWC
Sept. 3,	724	22.0	5620	11000	51	54	62	76	85	97	98	100			VPWC
Feb. 19, 1971	6490	.0	2100	36800	46	56	68	80	90	96	100				SPWC
Feb. 20,	1430	.0	1570	6060	54	68	70	75	85	90	100				SPWC
Mar. 30,	555	2.0	2250	3370	46	52	61	76	89	94	100				SPWC
May 24,	99	14.0	3760	1010	50	65	84	91	93	99	100				SPWC
June 5,	2910	18.0	14500	114000	51	55	66	82	92	99	100				VPWC
June 9,	7340	19.0	5340	106000	56	58	63	67	74	95	98	100			VPWC
June 30,	549	22.0	5530	8200	54	57	68	81	95	99	99	100			VPWC
Mar. 7, 1972	3370	.0	1880	17100	30	36	38	51	76	97	98	99	100		VPWC
Mar. 12,	2170	1.0	3000	17600	39	42	51	62	84	95	97	100			VPWC
Mar. 13,	3010	2.0	2920	23700	31	36	40	47	74	91	93	99	100		VPWC
Mar. 14,	1840	2.0	3520	17500	24	30	39	50	72	95	98	100			VPWC
July 6,	327	15.0	17100	15100	44	52	63	81	97	100					SPWC
Dec. 31, 1972	1700	.0	2040	9360	40	46	51	55	74	92	96	99	100		VPWC
June 19, 1973	914	19.5	3900	9620	48	58	68	79		98					SPWC
July 3,	653	22.0	2590	4570	49	60	70	80		96					SPWC
July 9,	2020	21.0	25800	141000	28	31	37	54		99	100				VPWC
July 9,	2990	22.0	6560	53000	44	56	67	75		97	98	100			VPWC

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
May 27, 1971	82	19.5	3	1	2	6	40	74	82	90	94	100			SV
Sept. 12, 1973	70	15.0	3	1	2	5	44	74	85	95	100				SV

MONONA-HARRISON DITCH BASIN
06602000 WEST FORK DITCH AT HOLLY SPRINGS, IOWA

LOCATION.--Lat 42°15'15", long 96°04'45", in SE 1/4 SE 1/4 sec. 9, T.86 N., R.45 W., Woodbury County, on State Highway 141 bridge at west edge of Holly Springs, 12.2 mi (19.6 km) upstream from Wolf Creek, 16.5 mi (26.5 km) north of Onawa, and 22 mi (35.4 km) southeast of Sioux City.

DRAINAGE AREA.--399 mi² (1,033 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--11 years (1939-40, 1957-67), 428,000 tons (388,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 33,000 mg/l June 6, 1940; minimum daily, not determined. Sediment discharge: Maximum daily, 204,000 tons (185,000 tonnes) June 14, 1967; minimum daily, 0 ton (0.0 tonne) several days in 1939-41, 1958, 1959.

REMARKS.--West Fork ditch is a dredged channel which diverts flow of West Fork Little Sioux River at Holly Springs and carries it 5.5 mi (8.8 km) south, thence southeast 6.5 mi (10.5 km) to a point 1.5 mi (2.4 km) west of Kennebec, where Wolf Creek enters from the left. From this point, ditch roughly parallels Little Sioux River and becomes known as Monona-Harrison ditch 3 mi (4.8 km) southwest of Turin. Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water W.S.P. No.	Concentrations (mg/l)				Daily suspended sediment			
	Max.	Date	Min.	Date	Max.	Date	Min.	Date
1940	33,000	June 6	*		94,800	July 4	0	several days
1958	9,030	June 4	*		4,420	June 4	0	several days
1959	12,300	June 12	*		73,600	May 30	0	several days
1960	6,940	July 13	*		81,300	May 21	1	Nov. 3
1961	20,500	Mar. 23	*		41,200	June 14	1	several days
1962	11,900	May 23	*		68,900	July 20	2	several days
1963	23,500	June 13	*		145,000	June 2	3	Sept. 17
1964	6,360	May 12	*		74,800	May 6	1	several days
1965	6,960	Mar. 31	*		110,000	Apr. 1	1	several days
1966	7,680	Feb. 9	*		62,400	Feb. 9	1	several days
1967	19,200	June 5	*		204,000	June 14	1	several days

A Published by Corps of Engineers
* Maximum measured concentration
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Minimum	Maximum						
May.....1939	1,228	33,506	5.0	21,700	1,080	84	28	.....	10,100
June.....	1,616	49,160	9.0	23,800	1,640	123	41	.....	11,300
July.....	3,615	142,081	3.0	64,300	4,580	356	119	.....	14,600
August.....	2,296	93,578	1.0	67,500	3,020	235	78	.....	15,100
September.....	131	35	0	3.0	1.2	.09	.03	.....	99
October.....	208	7	0	2.0	.23	.02	.01	.....	13
November.....	193	27	0	5.0	.90	.07	.02	.....	52
December.....	177	2	0	1.0	.06	.01	0	.....	4
January.....1940	79	30	0	1.0	.97	.08	.03	.....	141
February.....	70	48	1.0	3.0	1.0	.12	.04	.....	254
March.....	985	5,594	5.0	2,440	180	14	4.7	.....	2,100
April.....	425	2,084	2.0	440	69	5.2	1.7	.....	1,820
May.....	759	1,904	2.0	680	61	4.8	1.6	.....	929
June.....	4,389	212,216	1.0	94,800	7,070	532	177	.....	17,900
July.....	3,841	92,044	1.0	33,200	2,970	231	77	.....	8,880
August.....	3,432	98,589	2.0	52,700	3,180	247	82	.....	10,600
September.....	484	1,472	1.0	1,040	49	3.7	1.2	.....	1,130
Water Year 1940	15,042	414,017	0	94,800	1,130	1,040	346	.....	10,200
October.....	387	1,690	0	1,520	55	4.2	1.4	.....	1,620
November.....	232	188	0	30	6.3	.47	.16	.....	300
December.....	298	150	0	12	4.8	.38	.13	.....	186
Cal. Year 1940	15,381	416,009	0	94,800	1,140	1,040	347	.....	10,000
January.....1941	303	144	1.0	13	4.6	.36	.12	.....	176
February.....	3,801	2,786	2.0	680	99	7.0	2.3	.....	271
March.....	7,924	26,974	8.0	5,010	870	68	23	.....	1,260
April.....	2,614	29,470	12	12,200	982	74	25	.....	4,180
May.....	773	2,136	7.0	740	69	5.4	1.8	.....	1,020
June.....	1,757	35,582	13	6,470	1,190	89	30	.....	7,500
August.....1957	620	376	2.0	98	12	.94	.31	.....	225
September.....	1,062	3,307	1.0	2,720	110	8.3	2.8	.....	1,150
October.....	758.5	1,708	1.0	1,000	55	4.3	1.4	.....	834
November.....	1,119	931	5.0	48	31	2.3	.78	.....	308
December.....	522	208	1.0	35	6.7	.52	.17	.....	148
January.....1958	343	56	1.0	2.0	1.8	.14	.05	.....	61
February.....	1,441	10,679	1.0	3,950	381	27	8.9	.....	2,740

06602000 WEST FORK DITCH AT HOLLY SPRINGS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Maximum	Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
				Minimum	Mean					
March.....	1,037	1,606	230	15	52	4.0	1.3	.....	574
April.....	1,544	8,180	2,920	8.0	273	21	6.8	.....	1,960
May.....	645	202	66	2.0	6.5	.51	.17	.....	116
June.....	1,418	9,369	4,420	4.0	312	23	7.8	.....	2,450
July.....	554	416	130	5.0	13	1.0	.35	.....	278
August.....	271.3	120	14	2.0	3.9	.30	.10	.....	164
September.....	151.8	47	3.0	0	1.6	.12	.04	.....	115
Water Year 1958	9,804.60	33,522	4,420	0	92	84	28	.....	1,270
October.....	98.3	33	13	0	1.1	.08	.03	.....	124
November.....	121.9	24	1.0	0	.80	.06	.02	.....	73
December.....	80.6	6	1.0	0	.19	.02	.01	.....	28
Cal. Year 1958	7,705.90	30,738	4,420	0	84	77	26	.....	1,480
January..... 1959	70	0	0	0	0	0	0	.....	0
February.....	91	42	21	0	1.0	.11	.04	.....	171
March.....	902	2,520	210	21	81	6.3	2.1	.....	1,030
April.....	325.6	356	37	4.0	12	.89	.30	.....	405
May.....	10,333	244,295	73,600	5.0	7,880	612	204	.....	8,760
June.....	3,731	52,181	22,400	28	1,740	131	44	.....	5,180
July.....	1,549	6,514	3,030	24	210	16	5.4	.....	1,560
August.....	1,362	8,077	3,810	6.0	261	20	6.7	.....	2,200
September.....	426.6	368	130	2.0	12	.92	.31	.....	319
Water Year 1959	19,091.00	314,416	73,600	0	861	788	262	.....	6,100
October.....	385	215	27	4.0	6.9	.54	.18	.....	207
November.....	545	119	8.0	1.0	4.0	.30	.10	.....	81
December.....	849	520	.....	.....	17	1.3	.43	.....	227
Cal. Year 1959	20,569.20	315,207	73,600	0	864	790	263	.....	5,680
January..... 1960	735	320	.....	.....	10	.80	.27	.....	161
February.....	393	200	.....	.....	6.0	.50	.17	.....	188
March.....	14,998	190,000	.....	.....	6,130	476	159	.....	4,690
April.....	11,262	69,058	30,400	61	2,300	173	58	.....	2,270
May.....	9,878	265,546	81,300	66	8,570	666	222	.....	9,960
June.....	3,441	6,789	81,300	113	226	17	5.7	.....	731
July.....	2,063	15,037	6,920	17	485	38	13	.....	2,700
August.....	6,066	135,926	68,500	10	4,380	341	113	.....	8,300
September.....	2,086	1,823	357	14	61	4.6	1.5	.....	324
Water Year 1960	52,701	685,553	81,300	1.0	1,870	1,720	572	.....	4,820

06602000 WEST FORK DITCH AT HOLLY SPRINGS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)		
			Maximum	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
				Minimum	Maximum						Minimum
October.....	1,069	176	13	1.0	5.7	.44	.15	61		
November.....	983	53	4.0	1.0	1.8	.13	.04	20		
December.....	927	620			20	1.6	.52	248		
Cal. Year 1960	53,901	685,548	81,300	1.0	1,870	1,720	572	4,710		
January.....1961	520	240			7.7	.60	.20	171		
February.....	3,390	58,000			2,070	145	48	6,340		
March.....	16,682	230,000			7,420	576	192	5,110		
April.....	2,557	3,328	311	9.0	111	8.3	2.8	482		
May.....	2,076	1,161	124	4.0	37	2.9	.97	207		
June.....	4,487	65,414	41,200	20	2,180	164	55	5,400		
July.....	2,236	26,516	11,700	4.0	855	66	22	4,390		
August.....	3,979	39,802	12,600	18	1,280	100	33	3,700		
September.....	1,437	611	59	8.0	20	1.5	.51	157		
Water Year 1961	40,343	425,921	41,200	1.0	1,170	1,070	356	3,910		
October.....	1,537	560	123	2.0	18	1.4	.47	135		
November.....	1,269	162	18	2.0	5.4	.41	.14	47		
December.....	947	620			20	1.6	.52	242		
Cal. Year 1961	41,117	426,414	41,200	2.0	1,170	1,070	356	3,840		
January.....1962	628	225			7.3	.56	.19	133		
February.....	1,356	1,500			53	3.8	1.3	410		
March.....	25,200	480,000			15,500	1,200	401	7,050		
April.....	7,483	33,416	3,620	89	1,110	84	28	1,650		
May.....	4,946	78,555	14,200	17	2,530	197	66	5,880		
June.....	7,294	85,277	17,700	127	2,840	214	71	4,330		
July.....	8,678	166,714	68,900	207	5,380	418	139	7,120		
August.....	3,192	25,481	11,000	16	822	64	21	2,960		
September.....	4,680	38,665	13,400	56	1,290	97	32	3,060		
Water Year 1962	67,210	911,175	68,900	2.0	2,500	2,280	761	5,020		
October.....	2,315	1,524	170	15	49	3.8	1.3	244		
November.....	1,807	423	20	10	14	1.1	.35	87		
December.....	1,453	1,350			44	3.4	1.1	344		
Cal. Year 1962	69,032	913,130	68,900	10	2,500	2,290	762	4,900		
January.....1963	957	580			19	1.5	.48	224		
February.....	1,314	1,350			48	3.4	1.1	381		
March.....	4,659	24,000			774	60	20	1,910		
April.....	1,491	1,563	230	8.0	52	3.9	1.3	388		

06602000 WEST FORK DITCH AT HOLLY SPRINGS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Maximum daily			Weighted mean	
				Minimum	Mean					
May.....	1,530	1,451	518	7.0	47	3.6	1.2	.....	351
June.....	11,833	287,228	145,000	71	9,570	720	240	.....	8,990
July.....	1,356	949	106	15	31	2.4	.79	.....	259
August.....	1,167	1,962	469	13	63	4.9	1.6	.....	623
September.....	858	471	68	3.0	16	1.2	.39	.....	203
Water Year 1963	30,740	322,851	145,000	3.0	885	809	269	.....	3,890
October.....	830	160	12	2.0	5.2	.40	.13	.....	71
November.....	612	74	5.0	1.0	2.5	.19	.06	.....	45
December.....	465	165	.....	.....	5.3	.41	.14	.....	131
Cal. Year 1963	27,072	319,953	145,000	1.0	977	802	267	.....	4,380
January.....1964	520	145	.....	.....	4.7	.36	.12	.....	103
February.....	501	135	.....	.....	4.0	.34	.11	.....	100
March.....	928	1,271	121	8.0	41	3.2	1.1	.....	507
April.....	1,272	4,295	1,540	12	143	11	3.6	.....	1,250
May.....	7,027	178,734	74,800	16	5,770	448	149	.....	9,420
June.....	1,575	1,299	153	16	43	3.3	1.1	.....	305
July.....	1,274	7,043	3,990	4.0	227	18	5.9	.....	2,050
August.....	684	566	202	4.0	18	1.4	.47	.....	306
September.....	1,271	2,592	685	6.0	86	6.5	2.2	.....	755
Water Year 1964	16,959	196,479	74,800	1.0	537	492	164	.....	4,290
October.....	622	85	7.0	2.0	2.7	.21	.07	.....	51
November.....	532	34	2.0	1.0	1.1	.09	.03	.....	24
December.....	409	31	1.0	1.0	1.0	.08	.03	.....	28
Cal. Year 1964	16,615	196,230	74,800	1.0	536	492	164	.....	4,370
January.....1965	383	32	2.0	1.0	1.0	.08	.03	.....	31
February.....	537	160	.....	.....	5.0	.40	.13	.....	110
March.....	2,896	31,286	21,800	16	1,010	78	26	.....	4,000
April.....	22,602	489,644	110,000	13	16,300	1,230	409	.....	8,020
May.....	3,734	30,164	9,090	5.0	973	76	25	.....	2,990
June.....	3,680	47,507	15,300	11	1,580	119	40	.....	4,780
July.....	1,229	1,375	558	2.0	44	3.4	1.1	.....	414
August.....	552	215	24	2.0	6.9	.54	.18	.....	144
September.....	2,177	4,150	2,220	8.0	138	10	3.5	.....	706
Water Year 1965	39,353	604,683	110,000	1.0	1,660	1,520	505	.....	5,690
October.....	3,216	11,028	5,380	7.0	356	28	9.2	.....	1,270
November.....	1,068	212	14	2.0	7.1	.53	.18	.....	74

06602000 WEST FORK DITCH AT HOLLY SPRINGS, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
December.....	1,353	333	21	4.0	11	.83	.28	.....	91
Cal. Year 1965	43,427	616,106	110,000	1.0	1,690	1,540	514	.....	5,250
January....1966	680	64	6.0	1.0	2.1	.16	.05	.....	35
February.....	6,999	128,211	62,400	1.0	4,580	321	107	.....	6,780
March.....	2,225	5,857	1,980	8.0	189	15	4.9	.....	975
April.....	2,263	2,877	1,110	17	96	7.2	2.4	.....	471
May.....	1,255	239	21	3.0	7.7	.60	.20	.....	71
June.....	1,591	3,468	716	3.0	116	8.7	2.9	.....	807
July.....	720	574	171	6.0	19	1.4	.48	.....	295
August.....	992	1,518	525	3.0	49	3.8	1.3	.....	567
September.....	474	71	12	1.0	2.4	.18	.06	.....	56
Cal. Year 1966	22,836	154,452	62,400	1.0	423	387	129	.....	2,510
October.....	485	113	16	1.0	3.6	.28	.09	.....	86
November.....	376	37	2.0	1.0	1.2	.09	.03	.....	36
December.....	322	22	2.0	.20	.71	.06	.02	.....	25
Cal. Year 1966	18,382	143,051	62,400	.20	392	359	119	.....	2,880
January....1967	278.3	8	.40	.20	.26	.02	.01	.....	11
February.....	328	80	8.0	.40	2.0	.20	.07	.....	90
March.....	2,311	6,552	2,830	12	211	16	5.5	.....	1,050
April.....	698	273	33	2.0	9.1	.68	.23	.....	145
May.....	923	1,580	705	2.0	51	4.0	1.3	.....	634
June.....	20,527	635,656	204,000	12	21,200	1,590	531	.....	11,500
July.....	2,210	4,128	481	41	133	10	3.4	.....	692
August.....	1,010	774	111	2.0	25	1.9	.65	.....	284
September.....	568	97	5.0	2.0	3.2	.24	.08	.....	63
Cal. Year 1967	30,036.30	649,320	204,000	.20	1,780	1,630	542	.....	8,010

MONONA-HARRISON DITCH BASIN
 06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA

LOCATION.--Lat 41°57'52", long 95°59'30", in NW 1/4 NE 1/4 sec. 32, T.83 N., R.44 W., Monona County, at bridge on county highway E51, 4 mi (6.4 km) southwest of Turin, 5.2 mi (8.4 km) northeast of Blencoe, and 12.5 mi (20.1 km) upstream from mouth.

DRAINAGE AREA.--900 mi² (2,331 km²) since February 1958. For period April 1939 to May 7, 1942, combined area above this station and Little Sioux River was 4,470 mi² (11,577 km²) at site near Blencoe and from May 8, 1942, to January 1958, 4,460 mi² (11,551 km²).

REMARKS.--Equalizer ditch 1.5 mi (2.4 km) upstream between Monona-Harrison ditch and Little Sioux River in effect prior to January 1958. Records not equivalent. Records of suspended sediment furnished by Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1940	A	35,900	*	July 29	194,000	0	July 29	several days	
1941	A	15,800	*	June 3	42,000	0	Sept. 14	several days	
1942	A	33,300	*	July 29	355,000	0	June 20	several days	
1943	A	35,200	*	June 15	162,000	0	June 15	Oct. 24-25	
1944	A	26,200	*	June 6	545,000	11	June 11	Jan. 20-22	
1945	A	68,200	*	May 31	1,310,000	30	May 31	Jan. 18	
1946	A	51,200	*	May 19	462,000	12	Feb. 6	Dec. 19	
1947	A	87,900	*	Apr. 23	542,000	110	June 23	Sept. 29, 30	
1948	A	9,000	*	July 14	461,000	32	Mar. 16	Feb. 7-12	
1949	A	36,600	*	June 2	434,000	20	June 2	Oct. 13	
1950	A	87,800	*	June 15	788,000	7	June 18	several days	
1951	A	62,500	*	July 3	1,145,000	12	July 3	several days	
1958	A	31,700	*	May 27	32,100	3	July 2	several days	
1959	A	11,000	*	June 1	318,000	0	May 31	several days	
1960	A	12,400	*	July 13	209,000	1	Mar. 30	Nov. 2, 3	
1961	A	6,300	*	Mar. 17	128,000	3	June 14	Nov. 11	

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Concentrations (mg/l)			Loads (tons)		
		Max.	Min.	Date	Max.	Min.	Date
1962	A	21,900	*	June 8	1,060,000	6	Mar. 9-16
1963	A	21,300	*	June 26	483,000	6	several days
1964	A	6,230	*	May 8	144,000	5	several days
1965	A	10,900	*	May 25	410,000	1	several days
1966	A	6,240	*	Feb. 10	97,200	1	several days
1967	A	20,100	*	June 5	428,000	1	several days
1968	A	6,330	*	June 25	83,900	1	Jan. 19

Daily suspended sediment

A Published by Corps of Engineers
+ Maximum measured concentration
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean			Maximum daily	Weighted mean
			Maximum	Minimum					
April.....1939	12,987	38,850	4,110	490	1,300	43	32	1,110	
May.....	15,123	364,170	152,000	690	11,700	405	304	8,920	
June.....	12,282	281,460	115,000	200	9,380	313	235	8,490	
July.....	15,765	689,810	246,000	460	22,300	766	576	16,200	
August.....	16,451	344,410	102,000	230	11,100	383	287	7,750	
September.....	3,050	6,480	520	110	216	7.2	5.4	787	
October.....	2,831	46,025	30,800	13	1,480	51	38	6,020	
November.....	2,100	3,227	320	10	108	3.6	2.7	569	
December.....	2,145	1,723	150	0	56	1.9	1.4	298	
January.....1940	1,343	918	75	0	30	1.0	.77	253	
February.....	1,295	2,032	120	53	72	2.3	1.7	581	
March.....	5,241	26,115	5,340	0	842	29	22	1,850	
April.....	8,318	99,300	25,600	330	3,310	110	83	4,420	
May.....	6,507	23,025	2,330	85	743	26	19	1,310	

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
June.....	20,849	646,129	178,000	0	21,500	718	539	.....	11,500
July.....	18,702	800,570	194,000	34	25,800	890	668	.....	15,900
August.....	27,375	836,320	155,000	270	27,000	929	698	.....	11,300
September.....	7,019	48,610	15,300	52	1,620	54	41	.....	2,560
Water Year 1940	103,725	2,533,994	194,000	0	6,940	2,820	2,120	.....	9,050
October.....	1,808	3,961	1,040	3.0	128	4.4	3.3	.....	811
November.....	580	679	66	4.0	23	.75	.57	.....	434
December.....	613	596	35	10	19	.66	.50	.....	360
Cal. Year 1940	99,650	2,488,255	194,000	0	6,820	2,760	2,080	.....	9,250
January....1941	839	439	40	0	14	.49	.37	.....	194
February.....	13,592	94,075	41,000	4.0	3,240	105	79	.....	2,560
March.....	45,186	381,910	22,100	1,090	12,300	424	319	.....	3,130
April.....	29,616	358,340	41,600	950	11,900	398	299	.....	4,480
May.....	1,718	6,071	960	22	196	6.7	5.1	.....	1,310
June.....	4,714	70,017	23,200	69	2,330	78	58	.....	5,500
July.....	1,883	40,964	17,700	5.0	1,320	46	34	.....	8,060
August.....	275	1,954	1,470	1.0	63	2.2	1.6	.....	2,630
September.....	11,048	123,540	42,900	1.0	4,120	137	103	.....	4,140
Water Year 1941	111,872	1,082,546	42,900	0	2,960	1,200	904	.....	3,580
October.....	5,111	66,157	25,000	73	2,130	74	55	.....	4,790
November.....	3,069	33,848	11,000	53	1,130	38	28	.....	4,080
December.....	1,267	1,648	120	0	53	1.8	1.4	.....	482
Cal. Year 1941	118,318	1,178,963	42,900	0	3,220	1,310	984	.....	3,690
January....1942	989	1,416	160	2.0	46	1.6	1.2	.....	530
February.....	963	1,618	120	0	57	1.8	1.4	.....	622
March.....	3,364	50,708	17,700	10	1,640	56	42	.....	5,580
April.....	2,783	15,323	3,380	93	511	17	13	.....	2,040
May.....	2,059	9,392	1,080	42	303	10	7.8	.....	1,690
June.....	47,718	1,978,630	355,000	300	66,000	2,200	1,650	.....	15,400
July.....	38,709	831,340	142,000	1,820	26,800	924	694	.....	7,950
August.....	24,098	194,350	48,500	420	6,270	216	162	.....	2,990
September.....	29,138	360,580	92,900	2,180	12,000	401	301	.....	4,580
Water Year 1942	159,268	3,545,010	355,000	0	9,710	3,940	2,960	.....	8,240
October.....	17,506	26,648	2,590	0	860	30	22	.....	564
November.....	10,167	11,986	1,430	52	400	13	10	.....	437
December.....	5,730	4,624	520	28	149	5.1	3.9	.....	299

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acres	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Cal. Year 1942	183,224	3,486,615	355,000	0	9,550	3,870	2,910	.....	7,050
January....1943	4,295	3,369	230	21	109	3.7	2.8	.....	291
February.....	57,185	209,960	24,000	140	7,500	233	175	.....	1,360
March.....	37,777	174,690	28,200	100	5,640	194	146	.....	1,710
April.....	3,961	42,412	3,020	36	1,410	47	35	.....	3,970
May.....	2,392	8,309	660	69	268	9.2	6.9	.....	1,290
June.....	22,030	1,121,900	153,000	510	37,400	1,250	936	.....	18,900
July.....	54,931	837,770	162,000	2,190	27,000	931	699	.....	5,650
August.....	20,083	383,580	71,000	1,120	12,400	426	320	.....	7,070
September.....	8,506	37,040	7,500	60	1,230	41	31	.....	1,610
Water Year 1943	244,563	2,862,288	162,000	0	7,840	3,180	2,390	.....	4,330
October.....	3,793	3,103	380	29	100	3.4	2.6	.....	303
November.....	5,188	5,677	610	35	189	6.3	4.7	.....	405
December.....	5,102	5,910	450	31	191	6.6	4.9	.....	429
Cal. Year 1943	225,243	2,833,720	162,000	21	7,760	3,150	2,370	.....	4,660
January....1944	3,842	7,786	1,640	11	251	8.7	6.5	.....	751
February.....	14,445	228,679	84,900	89	8,170	254	191	.....	5,860
March.....	18,497	69,830	19,300	100	2,250	78	58	.....	1,400
April.....	6,498	39,914	3,680	84	1,330	44	33	.....	2,280
May.....	49,057	1,019,270	278,000	4,050	32,900	1,130	851	.....	7,700
June.....	101,822	2,389,160	545,000	5,300	79,600	2,650	1,990	.....	8,690
July.....	63,729	1,394,090	178,000	3,960	45,000	1,550	1,160	.....	8,100
August.....	40,912	859,360	159,000	1,760	27,700	955	717	.....	7,780
September.....	23,570	198,670	22,200	810	6,620	221	166	.....	3,120
Water Year 1944	336,455	6,221,449	545,000	11	17,000	6,910	5,190	.....	6,850
October.....	10,900	15,980	1,640	160	515	18	13	.....	543
November.....	7,361	5,965	350	71	199	6.6	5.0	.....	300
December.....	4,240	2,011	110	32	65	2.2	1.7	.....	176
Cal. Year 1944	344,873	6,230,715	545,000	11	17,100	6,920	5,200	.....	6,690
January....1945	2,390	2,375	160	30	77	2.6	2.0	.....	368
February.....	24,230	150,745	22,600	15	5,200	167	126	.....	2,300
March.....	97,250	1,715,460	490,000	1,940	55,300	1,910	1,430	.....	6,530
April.....	36,056	490,870	191,000	1,820	16,400	545	410	.....	5,040
May.....	53,118	2,447,230	1,310,000	1,560	78,900	2,720	2,040	.....	17,100
June.....	118,390	2,642,020	758,000	5,180	88,100	2,940	2,210	.....	8,270
July.....	43,257	929,900	397,000	2,350	30,000	1,030	776	.....	7,960

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-foot	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
August.....	65,808	777,840	195,000	1,470	25,100	864	649	.....	4,380
September.....	9,630	40,340	10,200	140	1,340	45	34	.....	1,550
Water Year 1945	472,630	9,220,736	1,310,000	15	25,200	10,200	7,700	.....	7,230
October.....	5,930	9,424	1,280	28	304	10	7.9	.....	589
November.....	2,906	2,149	160	24	72	2.4	1.8	.....	274
December.....	2,111	2,723	330	12	88	3.0	2.3	.....	478
Cal. Year 1945	461,076	9,211,076	1,310,000	12	25,200	10,200	7,690	.....	7,400
January.....1946	6,909	35,610	10,300	40	1,150	40	30	.....	1,910
February.....	80,524	953,990	462,000	1,020	34,100	1,060	796	.....	4,390
March.....	56,790	570,010	84,400	2,460	18,400	633	476	.....	3,720
April.....	22,108	95,620	27,400	610	3,190	106	80	.....	1,600
May.....	34,649	1,118,260	332,000	730	36,100	1,240	933	.....	12,000
June.....	27,613	289,740	46,900	690	9,660	322	242	.....	3,890
July.....	15,262	77,910	15,300	550	2,510	87	65	.....	1,890
August.....	8,451	111,920	70,400	120	3,610	124	93	.....	4,900
September.....	10,685	190,580	83,600	140	6,350	212	159	.....	6,610
Water Year 1946	273,938	3,457,936	462,000	12	9,470	3,840	2,890	.....	4,680
October.....	15,125	68,830	7,800	170	2,220	76	57	.....	1,690
November.....	18,560	62,710	5,390	550	2,090	70	52	.....	1,250
December.....	14,258	22,730	4,180	160	733	25	19	.....	590
Cal. Year 1946	310,934	3,597,910	462,000	40	9,860	4,000	3,000	.....	4,290
January.....1947	8,970	7,350	580	150	237	8.2	6.1	.....	303
February.....	25,590	52,800	8,740	270	1,890	59	44	.....	764
March.....	55,245	282,200	31,900	580	9,100	314	236	.....	1,890
April.....	66,820	1,272,100	290,000	3,740	42,400	1,410	1,060	.....	7,050
May.....	71,970	1,138,830	448,000	4,240	36,700	1,270	951	.....	5,860
June.....	89,540	2,195,840	542,000	5,390	73,200	2,440	1,830	.....	9,080
July.....	62,575	285,710	32,700	1,940	9,220	317	238	.....	1,690
August.....	12,371	25,080	1,860	360	809	28	21	.....	751
September.....	6,571	15,740	5,800	110	525	17	13	.....	887
Water Year 1947	447,595	5,429,920	542,000	110	14,900	6,030	4,530	.....	4,490
October.....	6,530	7,711	1,150	90	249	8.6	6.4	.....	437
November.....	9,292	10,330	650	140	344	11	8.6	.....	412
December.....	8,551	6,664	480	59	215	7.4	5.6	.....	289
Cal. Year 1947	424,025	5,300,355	542,000	59	14,500	5,890	4,420	.....	4,630

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Water Year 1950	295,983	7,794,861	788,000	7.0	21,400	8,660	6,510		9,750
October.....	10,620	135,078	68,600	58	4,360	150	113		4,710
November.....	6,097	2,523	150	50	84	2.8	2.1		153
December.....	4,535	1,401	68	28	45	1.6	1.2		114
Cal. Year 1950	301,572	7,910,219	788,000	7.0	21,700	8,790	6,600		9,710
January.....	3,183	747	27	17	24	.83	.62		87
February.....	8,644	75,293	55,600	12	2,690	84	63		3,230
March.....	107,910	1,534,420	403,000	490	49,500	1,700	1,280		5,270
April.....	222,190	1,691,100	457,000	19,900	56,400	1,880	1,410		2,820
May.....	148,440	1,893,320	409,000	4,240	61,100	2,100	1,580		4,720
June.....	140,620	3,629,520	634,000	5,680	121,000	4,030	3,030		9,560
July.....	137,020	2,351,650	1,150,000	6,560	75,900	2,610	1,960		6,360
August.....	154,320	3,309,480	740,000	4,990	107,000	3,680	2,760		7,940
September.....	129,640	1,437,110	301,000	4,630	47,900	1,600	1,200		4,110
Water Year 1951	1,073,219	16,061,642	1,150,000	12	44,000	26,800	13,400		5,540
January.....	2,590	174	28	6.0	5.6	.19	.15		25
February.....	3,263	7,125	3,300	5.0	254	7.9	5.9		809
March.....	2,809	1,909	750	24	62	2.1	1.6		252
April.....	3,591	8,800	3,250	27	293	9.8	7.3		908
May.....	1,577	344	41	6.0	11	.38	.29		81
June.....	2,852	46,357	30,700	11	1,550	52	39		6,020
July.....	5,249	73,995	32,100	7.0	2,390	82	62		5,220
August.....	1,517	1,816	390	11	59	2.0	1.5		443
September.....	615	208	12	3.0	6.9	.23	.17		125
October.....	496	60	3.0	1.0	1.9	.07	.05		45
November.....	541	71	4.0	1.0	2.4	.08	.06		49
December.....	354.5	25	1.0	0	.81	.03	.02		26
January.....	325	20	1.0	0	.65	.02	.02		23
February.....	389	51	10	1.0	1.0	.06	.04		49
March.....	2,421	6,023	900	22	194	6.7	5.0		921
April.....	1,820	2,855	850	21	95	3.2	2.4		581
May.....	27,235	690,540	318,000	30	22,300	767	576		9,390
June.....	17,679	250,189	154,000	55	8,340	278	209		5,240
July.....	3,113	10,296	7,880	11	332	11	8.6		1,220
August.....	2,067	2,978	1,640	6.0	96	3.3	2.5		534
September.....	1,066	354	84	3.0	12	.39	.30		123

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acres	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
Water Year 1959	57,506.5	963,462	318,000	0	2,640	1,070	804		6,210	
October	1,760	216	14	2.0	7.0	.24	.18		46	
November	1,274	270	71	1.0	9.0	.30	.23		79	
December	1,458	509	167	4.0	16	.57	.42		129	
Cal. Year 1959	60,607	964,301	318,000	0	2,640	1,070	805		5,890	
January	1,433	360			12	.40	.30		93	
February	1,204	270			9.0	.30	.23		83	
March	21,670	352,652	209,000	4.0	11,400	392	294		6,030	
April	41,506	432,614	114,000	34	14,400	481	361		3,860	
May	21,690	428,843	146,000	21	13,800	476	358		7,320	
June	8,234	9,736	1,810	82	325	11	8.1		438	
July	4,875	5,314	3,010	32	171	5.9	4.4		404	
August	15,384	64,433	35,400	20	2,080	72	54		1,550	
September	4,590	2,814	337	35	94	3.1	2.3		227	
Water Year 1960	125,078	1,298,031	209,000	1.0	3,560	1,440	1,080		3,840	
October	2,413	767	71	5.0	25	.85	.64		118	
November	1,903	176	14	3.0	5.9	.20	.15		34	
December	1,487	440			14	.49	.37		110	
Cal. Year 1960	126,389	1,298,419	209,000	3.0	3,560	1,440	1,080		3,800	
January	1,007	170			5.5	.19	.14		63	
February	5,250	27,000			931	30	23		1,900	
March	31,331	558,304	95,500	83	18,000	620	466		6,600	
April	4,894	6,283	582	77	209	7.0	5.2		475	
May	4,288	6,568	781	59	212	7.3	5.5		567	
June	8,723	273,569	128,000	66	9,120	304	228		11,600	
July	4,259	57,796	40,300	11	1,860	64	48		5,030	
August	5,121	27,100	7,040	18	874	30	23		1,960	
September	2,288	1,191	192	5.0	40	1.3	.99		193	
Water Year 1961	72,864	959,364	128,000	3.0	2,620	1,070	801		4,870	
October	3,046	973	174	7.0	31	1.1	.81		118	
November	2,826	553	34	8.0	18	.61	.46		73	
December	1,721	160			5.2	.18	.13		34	
Cal. Year 1961	74,754	959,667	128,000	5.0	2,620	1,070	801		4,750	
January	1,353	90			2.9	.10	.08		25	
February	4,130	2,600			92	2.9	2.2		233	

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
Water Year 1950	295,983	7,794,861	788,000	7.0	21,400	8,660	6,510		9,750	
October.....	10,620	135,078	68,600	58	4,360	150	113		4,710	
November.....	6,097	2,523	150	50	84	2.8	2.1		153	
December.....	4,535	1,401	68	28	45	1.6	1.2		114	
Cal. Year 1950	301,572	7,910,219	788,000	7.0	21,700	8,790	6,600		9,710	
January.....	3,183	747	27	17	24	.83	.62		87	
February.....	8,644	75,293	55,600	12	2,690	84	63		3,230	
March.....	107,910	1,534,420	403,000	490	49,500	1,700	1,280		5,270	
April.....	222,190	1,691,100	457,000	19,900	56,400	1,880	1,410		2,820	
May.....	148,440	1,893,320	409,000	4,240	61,100	2,100	1,580		4,720	
June.....	140,620	3,629,520	634,000	5,680	121,000	4,030	3,030		9,560	
July.....	137,020	2,351,650	1,150,000	6,560	45,900	2,610	1,960		6,360	
August.....	154,320	3,309,480	740,000	4,990	107,000	3,680	2,760		7,940	
September.....	129,640	1,437,110	301,000	4,630	47,900	1,600	1,200		4,110	
Water Year 1951	1,073,219	16,061,642	1,150,000	12	44,000	26,800	13,400		5,540	
January.....	2,590	174	28	6.0	5.6	.19	.15		25	
February.....	3,263	7,125	3,300	5.0	254	7.9	5.9		809	
March.....	2,809	1,909	750	24	62	2.1	1.6		252	
April.....	3,591	8,800	3,250	27	293	9.8	7.3		908	
May.....	1,577	344	41	6.0	11	.38	.29		81	
June.....	2,852	46,357	30,700	11	1,550	52	39		6,020	
July.....	5,249	73,995	32,100	7.0	2,390	82	62		5,220	
August.....	1,517	1,816	390	11	59	2.0	1.5		443	
September.....	615	208	12	3.0	6.9	.23	.17		125	
October.....	496	60	3.0	1.0	1.9	.07	.05		45	
November.....	541	71	4.0	1.0	2.4	.08	.06		49	
December.....	354.5	25	1.0	0	.81	.03	.02		26	
January.....	325	20	1.0	0	.65	.02	.02		23	
February.....	389	51	10	1.0	1.0	.06	.04		49	
March.....	2,421	6,023	900	22	194	6.7	5.0		921	
April.....	1,820	2,855	850	21	95	3.2	2.4		581	
May.....	27,235	690,540	318,000	30	22,300	767	576		9,390	
June.....	17,679	250,189	154,000	55	8,340	278	209		5,240	
July.....	3,113	10,296	7,880	11	332	11	8.6		1,220	
August.....	2,067	2,978	1,640	6.0	96	3.3	2.5		534	
September.....	1,066	354	84	3.0	12	.39	.30		123	

WATER-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Minimum	Maximum	Maximum daily			Weighted mean	
			Minimum	Maximum								
Water Year 1959	57,506.5	963,462	0	318,000	2,640	1,070	804	1,070	804	.....	6,210
October.....	1,760	216	2.0	14	7.0	.24	.18	.24	.18	.....	46
November.....	1,274	270	1.0	71	9.0	.30	.23	.30	.23	.....	79
December.....	1,458	509	4.0	167	16	.57	.42	.57	.42	.....	129
Cal. Year 1959	60,607	964,301	0	318,000	2,640	1,070	805	1,070	805	.....	5,890
January....1960	1,433	360	.....	.....	12	.40	.30	.40	.30	.....	93
February....	21,204	270	.....	.....	9.0	.30	.23	.30	.23	.....	83
March.....	21,670	352,652	4.0	209,000	11,400	392	294	392	294	.....	6,030
April.....	41,506	432,614	34	114,000	14,400	481	361	481	361	.....	3,860
May.....	21,690	428,843	21	146,000	13,800	476	358	476	358	.....	7,320
June.....	8,234	9,736	82	1,810	325	11	8.1	11	8.1	.....	438
July.....	4,875	5,314	32	3,010	171	5.9	4.4	5.9	4.4	.....	404
August.....	15,384	64,433	20	35,400	2,080	72	54	72	54	.....	1,550
September....	4,590	2,814	35	337	94	3.1	2.3	3.1	2.3	.....	227
Water Year 1960	125,078	1,298,031	1.0	209,000	3,560	1,440	1,080	1,440	1,080	.....	3,840
October.....	2,413	767	5.0	71	25	.85	.64	.85	.64	.....	118
November.....	1,903	176	3.0	14	5.9	.20	.15	.20	.15	.....	34
December.....	1,487	440	.....	.....	14	.49	.37	.49	.37	.....	110
Cal. Year 1960	126,389	1,298,419	3.0	209,000	3,560	1,440	1,080	1,440	1,080	.....	3,800
January....1961	1,007	170	.....	.....	5.5	.19	.14	.19	.14	.....	63
February....	5,250	27,000	.....	.....	931	30	23	30	23	.....	1,900
March.....	31,331	558,304	83	95,500	18,000	620	466	620	466	.....	6,600
April.....	4,894	6,283	77	582	209	7.0	5.2	7.0	5.2	.....	475
May.....	4,288	6,568	59	781	212	7.3	5.5	7.3	5.5	.....	567
June.....	8,723	273,569	66	128,000	9,120	304	228	304	228	.....	11,600
July.....	4,259	57,796	11	40,300	1,860	64	48	64	48	.....	5,030
August.....	5,121	27,100	18	7,040	874	30	23	30	23	.....	1,960
September....	2,288	1,191	5.0	192	40	1.3	.99	1.3	.99	.....	193
Water Year 1961	72,964	959,364	3.0	128,000	2,620	1,070	801	1,070	801	.....	4,870
October.....	3,046	973	7.0	174	31	1.1	.81	1.1	.81	.....	118
November.....	2,826	553	8.0	34	18	.61	.46	.61	.46	.....	73
December.....	1,721	160	.....	.....	5.2	.18	.13	.18	.13	.....	34
Cal. Year 1961	74,754	959,667	5.0	128,000	2,620	1,070	801	1,070	801	.....	4,750
January....1962	1,353	90	.....	.....	2.9	.10	.08	.10	.08	.....	25
February....	4,130	2,600	.....	.....	92	2.9	2.2	2.9	2.2	.....	233

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Maximum	Daily loads (tons)		Tons per sq mi	Acres-feet	Maximum daily	Weighted mean
				Minimum	Mean				
March.....	52,930	3,059,700	1,060,000	6.0	98,700	3,400	2,550	.....	21,400
April.....	22,024	199,877	96,700	130	6,660	222	167	.....	3,360
May.....	12,234	111,313	111,000	37	5,850	201	151	.....	5,490
June.....	29,951	1,114,319	310,000	270	37,100	1,240	930	.....	13,800
July.....	28,023	1,140,275	574,000	154	36,800	1,270	952	.....	15,100
August.....	8,069	23,750	12,100	38	766	26	20	.....	1,090
September.....	8,429	18,628	3,730	70	621	21	16	.....	819
Water Year 1962	174,736	5,742,238	1,060,000	6.0	15,700	6,380	4,790	.....	12,200
October.....	4,932	4,473	864	70	144	5.0	3.7	.....	336
November.....	4,003	2,413	116	40	80	2.7	2.0	.....	223
December.....	2,838	1,600	.....	.....	52	1.8	1.3	.....	209
Cal. Year 1962	178,916	5,749,038	1,060,000	6.0	15,800	6,390	4,800	.....	11,900
January..... 1963	1,959	750	.....	.....	24	.83	.63	.....	142
February.....	2,807	2,200	.....	.....	78	2.4	1.8	.....	290
March.....	10,211	40,327	6,260	20	1,300	45	34	.....	1,460
April.....	3,222	1,190	152	8.0	40	1.3	.99	.....	137
May.....	4,087	4,629	1,440	28	149	5.1	3.9	.....	419
June.....	31,752	937,227	483,000	25	31,200	1,040	782	.....	10,900
July.....	3,368	2,164	202	35	70	2.4	1.8	.....	238
August.....	3,411	2,977	1,020	20	96	3.3	2.5	.....	323
September.....	2,153	482	43	6.0	16	.54	.40	.....	83
Water Year 1963	74,743	1,000,432	483,000	6.0	2,740	1,110	835	.....	4,960
October.....	1,930	576	58	10	19	.64	.48	.....	111
November.....	1,589	603	28	6.0	20	.67	.50	.....	141
December.....	952	130	.....	.....	4.2	.14	.11	.....	51
Cal. Year 1963	67,441	993,255	483,000	6.0	2,720	1,100	829	.....	5,450
January..... 1964	1,246	170	.....	.....	5.5	.19	.14	.....	51
February.....	1,233	170	.....	.....	6.0	.19	.14	.....	51
March.....	2,129	295	14	6.0	9.5	.33	.25	.....	51
April.....	4,077	19,017	13,000	11	634	21	16	.....	1,730
May.....	22,000	221,879	144,000	47	7,160	247	185	.....	3,730
June.....	4,458	3,229	285	50	108	3.6	2.7	.....	268
July.....	4,074	3,699	843	16	119	4.1	3.1	.....	336
August.....	2,012	630	86	5.0	20	.70	.53	.....	116
September.....	2,270	1,282	342	5.0	43	1.4	1.1	.....	209
Water Year 1964	47,973	251,680	144,000	5.0	690	280	210	.....	1,940

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Maximum						Minimum
October.....	1,411	150	11	2.0	4.8	.17	.13	39			
November.....	1,093	89	5.0	1.0	3.0	.10	.07	30			
December.....	951	48	2.0	1.0	1.5	.05	.04	19			
Cal. Year 1964	46,957	250,658	144,000	1.0	687	279	209	1,980			
January.....1965	1,141	220	.....	.....	7.1	.24	.18	71	
February.....	1,784	820	.....	.....	28	.91	.68	170	
March.....	5,530	12,800	.....	.....	413	14	11	857	
April.....	47,641	1,199,550	410,000	71	40,000	1,330	1,000	9,330			
May.....	7,989	100,129	31,400	10	3,230	111	84	4,640			
June.....	7,869	121,806	61,600	13	4,060	135	102	5,730			
July.....	2,257	6,318	3,870	5.0	3,204	7.0	5.3	1,040			
August.....	1,500	363	18	8.0	12	.40	.30	90			
September.....	7,475	64,750	53,100	8.0	2,160	72	54	3,210			
Water Year 1965	86,641	1,507,043	410,000	1.0	4,120	1,670	1,260	6,440			
October.....	9,905	128,025	97,200	9.0	4,130	142	107	4,790			
November.....	3,581	269	16	2.0	9.0	.30	.22	28			
December.....	3,191	117	7.0	2.0	3.8	.13	.10	14			
Cal. Year 1965	99,863	1,635,167	410,000	2.0	4,470	1,820	1,360	6,060			
January.....1966	1,827	82	7.0	2.0	2.6	.09	.07	17			
February.....	10,090	162,973	85,000	2.0	5,820	181	136	5,980			
March.....	4,910	12,119	3,470	36	391	13	10	914			
April.....	4,443	6,073	2,770	5.0	202	6.7	5.1	506			
May.....	2,577	402	36	5.0	13	.45	.34	58			
June.....	6,771	33,220	19,600	7.0	1,110	37	28	1,820			
July.....	2,103	585	38	10	19	.65	.49	103			
August.....	2,682	3,613	1,920	6.0	117	4.0	3.0	499			
September.....	1,407	346	53	2.0	12	.38	.29	91			
Water Year 1966	53,487	347,824	97,200	2.0	953	386	290	2,410			
October.....	1,575	130	9.0	2.0	4.2	.14	.11	31			
November.....	1,488	111	6.0	3.0	3.7	.12	.09	28			
December.....	882	43	2.0	1.0	1.4	.05	.04	18			
Cal. Year 1966	40,755	219,697	85,000	1.0	602	244	183	2,000			
January.....1967	1,008	29	2.0	.30	.94	.03	.02	11			
February.....	994	46	3.0	1.0	1.0	.05	.04	17			
March.....	4,115	7,667	2,360	5.0	247	8.5	6.4	690			
April.....	1,789	384	41	4.0	13	.43	.32	80			

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean			Maximum daily	Weighted mean
				Minimum	Minimum						Maximum
May.....	1,766	1,677	1,010	3.0	54	1.9	1.4	.....	352
June.....	50,382	1,802,491	428,000	15	60,100	2,000	1,500	.....	13,300
July.....	5,548	27,535	18,500	34	888	31	23	.....	1,840
August.....	2,104	565	53	7.0	18	.63	.47	.....	100
September.....	1,120	326	26	5.0	11	.36	.27	.....	108
Water Year 1967	72,771	1,841,004	428,000	.30	5,040	2,050	1,540	.....	9,370
October.....	1,173	92	8.0	2.0	3.0	.10	.08	.....	29
November.....	1,358	101	6.0	1.0	3.4	.11	.08	.....	28
December.....	966	64	7.0	1.0	2.1	.07	.05	.....	25
Cal. Year 1967	72,323	1,840,977	428,000	.30	5,040	2,050	1,540	.....	9,430
January.....1968	798	18	2.0	.10	.58	.02	.02	.....	8
February.....	1,126	61	4.0	1.0	2.0	.07	.05	.....	20
March.....	1,454	205	17	1.0	6.6	.23	.17	.....	52
April.....	1,232	514	60	1.0	17	.57	.43	.....	155
May.....	1,354	453	47	5.0	15	.50	.38	.....	124
June.....	4,475	122,052	83,900	2.0	4,070	136	102	.....	10,100
July.....	2,365	3,797	1,000	12	122	4.2	3.2	.....	595
August.....	1,758	4,529	3,580	2.0	146	5.0	3.8	.....	954
September.....	2,246	4,354	2,540	2.0	145	4.8	3.6	.....	718
Water Year 1968	20,305	136,240	83,900	.10	373	151	114	.....	2,490
October.....	8,375	90,073	59,900	9.0	2,910	100	75	.....	3,980
November.....	3,002	530	47	3.0	18	.59	.44	.....	65
December.....	1,461	81	6.0	1.0	2.6	.09	.07	.....	21
Cal. Year 1968	29,646	226,667	83,900	.10	621	252	189	.....	2,830
January.....1969	1,253	52	.....	.....	1.7	.06	.04	.....	15
February.....	1,185	120	.....	.....	4.0	.13	.10	.....	38
March.....	21,638	143,986	43,300	4.0	4,640	160	120	.....	2,460
April.....	35,335	636,497	206,000	103	21,200	707	531	.....	6,670
May.....	5,709	1,143	90	15	37	1.3	.95	.....	74
June.....	17,684	420,763	255,000	14	14,000	468	351	.....	8,810

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA

LOCATION.--Lat 42°28'20", Long 95°04'49", in NE 1/4 NW 1/4 sec.1, T.88 N., R.43 W., Woodbury County, at gaging station on bridge on State Highway 31, 0.3 mi (0.5 km) upstream from Bacon Creek, 0.5 mi (0.8 km) west of Correctionville, 0.8 mi (1.3 km) downstream from Pierson Creek, and at mile 56.0 (90.1 km).

DRAINAGE AREA.--2,500 mi² (6,475 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--13 years (1940, 1951-62) 688,000 tons (624,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 31,400 mg/l June 25, 1939; minimum daily, not determined.
Sediment discharge: Maximum daily, 257,000 tons (233,000 tonnes) June 19, 1954; minimum daily, 0 ton (0.0 tonne) several days 1940-1941.

REMARKS.--Records of suspended sediment furnished by Corps of Engineers for the period 1939-40.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	
1939	A	31,400b	*	June 25	74,700	*	May 28	*	
1940	A	23,100b	*	June 6	86,500	0	June 7	several days	
1951	1198	5,080	*	June 19	62,100	*	Aug. 14	*	
1952	1251	9,620	*	July 7	111,000	25	July 7	Sept. 30	
1953	1291	7,390	*	June 8	85,500	*	June 8	*	
1954	1351	11,900	*	June 19	1257,000	*	June 19	*	
1955	1401	7,310	*	July 10	52,700	*	July 10	*	
1956	1451	1,790	*	May 31	1,930	*	May 31	*	
1957	1521	13,300	*	June 22	146,000	<.05	June 22	Feb. 18-25	
1958	1572	9,570	*	June 3	42,300	1	June 3	Sept. 27-30	
1959	1643	12,000	6	Mar. 11	220,000	*	May 31	*	
1960	1743	6,380	11	May 21	89,700	5	May 21	Dec. 19, Mar. 25, 26	
1961	1883	7,800	10	June 27	64,600	2	Aug. 9	Feb. 1-3	

0 6606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date
1943	3,620	10	Jan. 17	72,900	Mar. 28
1943	3,620	3	Jan. 17		Jan. 17

A Published by Corps of Engineers
 b Maximum measured concentration
 * Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
		Load (tons)		Daily loads (tons)				Maximum daily	Weighted mean
		Maximum	Minimum	Maximum	Mean				
May.....1939	14,771	132,059	89	74,700	4,260	53	110	.....	3,310
June.....	7,436	98,747	63	42,200	3,290	39	82	.....	4,920
July.....	7,247	36,011	29	22,400	1,160	14	30	.....	1,840
August.....	13,344	146,280	100	52,000	4,720	59	122	.....	4,060
September.....	1,963	1,810	37	100	60	.72	1.5	.....	342
October.....	1,628	1,018	0	85	33	.41	.85	.....	232
November.....	1,631	351	0	36	12	.14	.29	.....	80
December.....	1,533	384	0	60	12	.15	.32	.....	93
January.....1940	668	386	0	20	12	.15	.32	.....	214
February.....	677	677	16	58	24	.27	.57	.....	370
March.....	5,993	43,720	0	16,800	1,410	17	36	.....	2,700
April.....	12,931	84,530	140	32,500	2,820	34	71	.....	2,420
May.....	6,104	4,889	61	270	158	2.0	4.1	.....	297
June.....	14,173	239,513	55	86,500	7,980	96	200	.....	6,260
July.....	5,531	30,315	49	12,700	978	12	25	.....	2,030
August.....	11,080	95,930	120	54,500	3,090	38	80	.....	3,210
September.....	1,982	4,413	35	2,460	147	1.8	3.7	.....	825
Water Year 1940	63,931	506,126	0	86,500	1,390	202	422	.....	2,930
October.....	1,410	3,298	39	1,120	106	1.3	2.8	.....	866
November.....	1,991	2,338	20	170	78	.94	2.0	.....	435
December.....	2,702	2,772	35	140	89	1.1	2.3	.....	380

UUUUUUUU LITTLE SLAVA RIVER AT CARRINGTONVILLE, IOWA-COUNTY

Suspended sediment

Mcnth	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
Cal. Year 1940	65,242	512,781	86,500	0	205	428	.....	2,910
January... 1941	3,160	3,701	150	83	1.5	3.1	.....	434
February.....	6,602	13,737	5,060	0	5.5	11	.....	771
March.....	32,942	126,007	9,820	87	50	105	.....	1,420
April.....	26,710	184,570	35,000	1,290	74	154	.....	2,560
May.....	10,868	17,460	1,730	140	7.0	15	.....	595
June.....	12,630	99,930	20,000	150	40	83	.....	2,930
June..... 1950	23,617	293,903	190,000	31	118	245	11,500	4,610
July.....	25,109	137,355	62,800	48	55	115	12,300	2,030
August.....	10,117	49,769	36,000	42	20	42	6,100	1,820
September.....	5,021	6,419	2,050	20	2.6	5.4	1,500	473
October.....	4,996	1,556	233	10	.62	1.3	257	115
November.....	2,593	363	.....	.....	.15	.30	.....	52
December.....	1,710	227	.....	.....	.09	.19	.....	49
January..... 1951	1,115	154	.....	.....	.06	.13	.....	51
February.....	2,708	8,516	7,380	.....	3.4	7.1	2,000	1,160
March.....	46,234	159,374	47,900	.....	64	133	2,540	1,280
April.....	179,500	311,440	28,000	3,850	125	260	2,320	643
May.....	88,270	199,842	46,000	729	80	167	3,460	839
June.....	68,730	220,950	40,200	1,470	88	184	5,080	1,190
July.....	90,050	177,450	14,100	2,010	71	148	1,900	730
August.....	71,680	288,060	62,100	1,660	115	240	4,260	1,490
September.....	70,290	139,042	33,700	832	56	116	2,760	733
Water Year 1951	627,876	1,506,974	62,100	.....	603	1,260	5,080	889
October.....	34,980	19,365	3,680	253	7.7	16	910	205
November.....	20,247	5,891	369	80	2.4	4.9	159	108
December.....	18,651	8,559	511	60	3.4	7.1	.....	170
Cal. Year 1951	692,455	1,538,643	62,100	.....	615	1,280	5,080	823
January... 1952	15,670	4,674	1,500	40	1.9	3.9	.....	110
February.....	48,070	53,271	5,200	51	21	44	.....	438
March.....	78,080	348,113	44,200	200	139	291	3,410	1,650
April.....	122,660	141,068	14,400	998	56	118	720	426
May.....	31,925	18,849	1,200	306	7.5	16	465	219
June.....	22,762	53,065	12,500	230	21	44	3,150	863
July.....	39,421	216,896	111,000	225	87	181	9,720	2,040
August.....	9,766	7,305	889	63	2.9	6.1	.....	277
September.....	6,031	2,767	647	25	1.1	2.3	431	170

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
March.....	28,200	100,505	16,500	12	3,240	40	84	2,490	1,320	
April.....	26,071	75,610	18,700	155	2,520	30	63	4,540	1,070	
May.....	15,441	18,550	3,240	.....	598	7.4	15	953	445
June.....	6,611	4,370	316	50	146	1.7	3.6	452	245	
July.....	7,350	87,809	52,700	38	2,830	35	73	7,310	4,420	
August.....	1,391	680	141	.....	22	.27	.57	525	181
September.....	498.9	176	15	.....	5.9	.07	.15	147	131
Water Year 1955	125,128.90	301,155	52,700	.....	825	120	251	7,310	891
October.....	1,135	248	21	.....	8.0	.10	.21	154	81
November.....	1,091	131	.....	.....	4.4	.05	.11	.....	45
December.....	548	106	.....	.....	3.4	.04	.09	.....	72
Cal. Year 1955	94,496.90	288,997	52,700	.....	792	116	241	7,310	1,130
January.....1956	385	57	.....	.....	1.8	.02	.05	.....	55
February.....	448	240	.....	.....	8.0	.10	.20	.....	198
March.....	3,747	686	166	.....	22	.27	.57	198	68
April.....	6,526	3,448	499	12	115	1.4	2.9	420	196	
May.....	5,235	3,433	1,930	15	111	1.4	2.9	1,790	243	
June.....	1,744	2,073	985	.....	69	.83	1.7	1,580	440
July.....	1,346	479	89	.....	15	.19	.40	195	132
August.....	1,336	892	300	5.0	29	.36	.74	1,200	247	
September.....	682.6	166	13	.....	5.5	.07	.14	104	90
Water Year 1956	24,223.60	11,959	1,930	.....	33	4.8	10.0	1,790	183
October.....	258.1	66	8.0	.....	2.1	.03	.06	160	95
November.....	1,208	145	10	3.0	4.8	.06	.12	112	45	
December.....	811	56	2.0	.....	1.8	.02	.05	34	26
Cal. Year 1956	23,726.70	11,741	1,930	.....	32	4.7	9.8	1,790	183
January.....1957	534	43	2.0	.....	1.4	.02	.04	39	30
February.....	644	34	2.0	t	1.0	.01	.03	51	20	
March.....	4,777	4,117	1,330	1.0	133	1.6	3.4	605	319	
April.....	8,059	3,895	867	21	130	1.6	3.3	417	179	
May.....	7,196	38,430	16,000	15	1,240	15	32	9,190	1,980	
June.....	30,109	382,441	146,000	232	12,700	153	319	13,400	4,700	
July.....	19,731	100,267	34,900	83	3,230	40	84	5,900	1,880	
August.....	3,908	2,678	550	29	86	1.1	2.2	850	254	
September.....	5,262	5,629	3,000	.....	188	2.3	4.7	1,800	396
Water Year 1957	82,497.10	537,801	146,000	t	1,470	215	449	13,400	2,410	

0660660C LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
October.....	4,956	1,507	320	8.0	49	.60	1.3	480	113
November.....	11,456	5,484	904	38	183	2.2	4.6	775	177
December.....	8,277	1,800	172	6.0	58	.72	1.5	143	81
Cal. Year 1957	104,909	546,325	146,000	t	1,490	219	456	13,400	1,930
January.....1958	3,910	372	37	.....	12	.15	.31	99	35
February.....	4,625	31,231	21,000	.....	1,120	12	26	5,900	2,500
March.....	7,399	3,469	1,720	.....	112	1.4	2.9	1,000	174
April.....	14,473	14,703	1,300	51	490	5.9	12	750	376
May.....	8,469	4,473	423	35	144	1.8	3.7	281	196
June.....	13,229	86,257	42,300	38	2,880	35	72	9,670	2,410
July.....	3,473	1,555	250	19	50	.62	1.3	500	166
August.....	1,223	399	60	.....	13	.16	.33	260	121
September.....	433.1	82	.....	.....	2.7	.03	.07	.....	70
Water Year 1958	81,923.10	151,332	42,300	.....	415	61	126	9,670	684
October.....	406	65	5.0	.....	2.1	.03	.05	85	59
November.....	759	54	5.0	.....	1.8	.02	.05	73	26
December.....	468	36	.....	.....	1.2	.01	.03	54	29
Cal. Year 1958	58,867.10	142,696	42,300	.....	391	57	119	9,670	898
January.....1959	257.5	31	.....	.....	1.0	.01	.03	58	45
February.....	198.3	28	.....	.....	1.0	.01	.02	68	52
March.....	3,694	1,015	160	1.0	33	.41	.85	190	102
April.....	4,124	806	65	11	27	.32	.67	105	72
May.....	28,012	524,233	220,000	16	16,900	210	438	12,100	6,930
June.....	47,889	227,694	67,100	221	7,590	91	190	6,250	1,760
July.....	12,857	20,671	7,120	45	667	8.3	17	1,830	595
August.....	8,173	26,778	14,000	20	864	11	22	3,800	1,210
September.....	2,686	3,781	2,900	.....	126	1.5	3.2	2,000	521
Water Year 1959	109,523.80	805,192	220,000	.....	2,210	322	672	12,100	2,720
October.....	4,031	847	129	10	27	.34	.71	200	78
November.....	4,056	535	80	11	18	.21	.45	190	49
December.....	7,788	6,995	2,540	5.0	226	2.8	5.8	1,320	333
Cal. Year 1959	123,765.80	813,414	220,000	.....	2,230	325	679	12,100	2,430
January.....1960	9,290	5,446	437	80	176	2.2	4.5	325	217
February.....	4,400	1,767	100	27	63	.71	1.5	215	149
March.....	41,745	97,450	36,400	5.0	3,140	39	81	1,100	865
April.....	81,857	178,498	31,200	361	5,950	71	149	1,860	808

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment										Concentration (mg/l)			
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean						
			Maximum	Minimum							Mean					
May.....	89,097	308,142	89,700	157	9,940	123	257	6,380	1,280							
June.....	46,184	56,412	5,000	705	1,880	23	47	610	452							
July.....	20,588	29,375	3,640	213	948	12	25	1,380	528							
August.....	14,312	66,203	33,900	36	2,140	26	55	4,880	1,710							
September.....	13,457	9,779	1,070	14	326	3.9	8.2	505	269							
Water Year 1960	336,805	761,449	89,700	5.0	2,090	305	636	6,380	837							
October.....	12,221	4,664	718	28	150	1.9	3.9	350	141							
November.....	7,209	458	23	9.0	15	.18	.38	32	24							
December.....	4,899	318	36	4.0	10	.13	.27	45	24							
Cal. Year 1960	345,259	758,512	89,700	4.0	2,080	303	633	6,380	814							
January.....	3,170	175	9.0	3.0	5.6	.07	.15	30	20							
February.....	3,360	1,546	716	2.0	53	.62	1.3	530	170							
March.....	118,250	336,548	28,500	938	10,900	135	281	2,770	1,050							
April.....	59,692	66,422	7,580	463	2,210	27	55	675	412							
May.....	28,415	16,476	2,010	214	531	6.6	14	610	215							
June.....	28,477	167,934	47,200	252	5,600	67	140	7,800	2,180							
July.....	13,839	24,992	7,020	83	806	10.0	21	2,550	669							
August.....	22,998	104,877	64,600	31	3,380	42	88	3,720	1,690							
September.....	6,038	1,593	142	27	53	.64	1.3	155	98							
Water Year 1961	308,568	726,003	64,600	2.0	1,980	290	606	7,800	871							
October.....	7,412	3,050	1,260	24	98	1.2	2.5	1,030	152							
November.....	6,071	588	46	8.0	20	.24	.49	81	36							
December.....	5,023	632	41	6.0	20	.25	.53	105	47							
Cal. Year 1961	302,745	724,833	64,600	2.0	1,980	290	605	7,800	887							
January.....	4,045	248	15	3.0	8.0	.10	.21	46	23							
February.....	6,115	3,094	324	12	110	1.2	2.6	570	187							
March.....	78,155	257,634	72,900	14	8,310	103	215	2,550	1,220							
April.....	155,960	166,850	12,800	1,130	5,560	67	139	620	396							
May.....	31,604	56,253	8,660	159	1,810	23	47	2,100	659							
June.....	35,798	79,682	21,300	450	2,660	32	67	3,620	824							
July.....	78,880	171,060	11,200	2,120	5,520	68	143	1,650	803							
August.....	23,905	31,108	7,930	65	1,000	12	26	1,720	482							
September.....	39,202	57,158	9,680	103	1,910	23	48	1,580	540							
Water Year 1962	472,170	827,357	72,900	3.0	2,270	331	691	3,620	649							

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis	
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Percent finer than indicated size, in millimeters			
May 24, 1950	439		228	270	39	58	73	100	SPWC
June 18,.....	6730		13900	253000	45	74	84	100	SPWC
June 18,.....	6360		5120	87900	58	83	89	100	SPWC
June 18,.....	6360		5120	87900	34	74	90	100	SPN
July 6,.....	236		76	48	45	75	99	100	SPWC
July 12,.....	2400		13900	90100	37	63	99	100	SPWC
July 12,.....	2650		16400	117000	30	54	90	100	SPWC
July 12,.....	2650		16400	117000	4	26	61	89	SPN
July 12,.....	1620		9010	39400	50	83	100	100	SPWC
July 14,.....	640		730	1260	65	89	100	100	SPWC
July 16,.....	1280		10600	36600	41	77	100	100	SPWC
July 17,.....	672		1190	2160	52	81	100	100	SPWC
July 18,.....	1240		3310	11100	43	67	100	100	SPWC
July 20,.....	900		1210	2940	48	66	99	100	SPWC
July 21,.....	1580		2420	10300	35	58	97	100	SPWC
July 24,.....	1800		1950	9480	24	59	97	100	SPWC
July 26,.....	1160		886	2770	35	60	97	100	SPWC
Aug. 8,.....	395		601	641	47	71	86	100	BN
Aug. 8,.....	395		601	641	35	67	81	91	BN
Aug. 12,.....	1200		6720	21800	46	80	99	100	SPWC
Aug. 12,.....	655		3440	6080	50	85	99	100	SPWC
Sept. 22,.....	420		699	793	35	52	96	100	SPWC
Sept. 23,.....	505		1720	2350	55	83	100	100	SPWC
Sept. 23,.....	505		1560	2130	64	88	99	100	SPWC
Sept. 24,.....	460		830	1030	60	84	99	100	SPWC
Oct. 11, 1950	188	15.5	115	58	59	67	93	100	SPWC
Nov. 14,.....	90	1.0	56	14		56	64	73	BWC
Dec. 2,.....	68	.0	67	12	20	25	39	69	BWC
Jan. 12, 1951	37	.0	85	8		67	16	56	S
Apr. 4,.....	6640	4.0	870	15600	49	67	85	89	SPWC
Apr. 6,.....	13200	4.0	797	28400	22	44	74	90	BN
Apr. 6,.....	13200	4.0	797	28400	35	63	90	100	SPWC
Apr. 7,.....	16600	4.0	563	25200	53	74	90	100	SPWC
Apr. 17,.....	3980		794	8530	37	59	94	97	SPWC
June 20,.....	2500	19.0	3480	23500	44	70	96	100	SPWC
July 3,.....	3380	19.5	502	4580			78	86	S

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, Chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Suspended sediment (tons per day)	Concentration (mg/l)	Percent finer than indicated size, in millimeters				Methods of analysis				
			0.002	0.004	0.016	0.031			0.062	0.125	0.250	0.500		1.00			
July 23,.....	2960	25.0	55	75	98	99	10500	1310	39	42	49	54	58	63	75	95	SPWC
Aug. 2,.....	2210	25.0	38	62	98	100	27900	468C	44	49	58	67	79	83	93	100	SPWC
Aug. 10,.....	1160		34	64	99	100	5760	1840	50	55	68	73	81	85	99	99	SPWC
Aug. 14,.....	6300	20.0	49	62	97	99	85200	5010	37	44	60	88	97	99	100	100	S
Aug. 27,.....	1850	23.5	43	68	96	99	7140	1430	38	47	69	86	97	100	99	99	SPWC
Sept. 5,.....	1240	18.5	34	61	98	100	1130	338	46	59	80	99	100	100	100	100	SPWC
Sept. 11,.....	2770	19.0	28	45	94	98	11300	1510	47	59	86	97	100	99	99	100	SPWC
Sept. 12,.....	4870	18.5	40	62	97	99	39200	2980	39	64	73	84	89	92	94	100	SPWC
Sept. 15,.....	3920	15.5	34	51	89	94	8270	781	50	64	73	84	89	92	94	100	SPWC
Sept. 20,.....	3160	18.0	31	48	85	91	6190	726	21	69	97	98	98	97	100	100	SPWC
Cct. 2, 1951	1220	19.0	21	69	97	100	660	170	39	42	49	54	58	63	75	95	SPWC
Apr. 2, 1952	6240	6.0	40	49	54	9400	558	558	44	49	58	67	79	83	93	100	SPWC
Apr. 3,.....	9000	5.5	46	58	67	15400	634	634	50	55	68	73	81	85	99	99	SPWC
Apr. 4,.....	10400	4.0	53	68	73	12400	443	443	37	44	60	88	97	99	100	100	S
Apr. 8,.....	1140	12.0	300	923		923	300	300	38	47	69	86	97	100	99	99	SPWC
May 5,.....	556	23.5	226	339		339	226	226	39	64	73	84	89	92	94	99	SPWC
June 1,.....	1180	29.5	819	2610		2610	819	819	39	50	64	73	84	89	92	94	SPWC
July 1,.....	5400	20.0	4370	63700		63700	4370	4370									SPWC
July 7,.....	315	22.0	134	114		114	134	134									S
Aug. 6,.....	113	8.0	35	11		11	35	35									S
Oct. 7, 1952	75	.0	26				26	26									S
Dec. 3,.....																	S
Feb. 5, 1953	105	.0	18				18	18									S
Mar. 5,.....	203	.0	10				10	10									S
Mar. 20,.....	2240	7.0	1160	7020		7020	1160	1160	2	20	39	66	90	94	98	100	SPN
Mar. 20,.....	2240	7.0	1160	7020		7020	1160	1160	3	32	50	77	90	94	98	100	SPN
Apr. 2,.....	1070	6.5	283	818		818	283	283	26	41	54	73	93	96	100	100	SPWC
Apr. 2,.....	1070	6.5	283	818		818	283	283	32	39	53	77	92	96	99	100	SPWC
May 5,.....	1740	13.0	604	2840		2840	604	604	39	56	67	84	96	98	99	100	SPWC
June 2,.....	566	19.0	184	281		281	184	184	66	82	90	95	98	98	99	100	SPWC
June 10,.....	10100	24.0	1570	42800		42800	1570	1570	32	38	52	76	93	97	99	100	SPWC
July 3,.....	3180	23.5	864	7420		7420	864	864	29	42	55	74	97	98	98	100	SPWC
Aug. 4,.....	1520		1690	6940		6940	1690	1690	44	57	74	89	97	98	98	100	SPWC
Feb. 20, 1954	710	1.0	1990	3810		3810	1990	1990									SPWC

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis			
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters	Visual accumulation tube				
Mar. 16,.....	580	3.0	691	1080	35	47	93	94	96	SPWC
Apr. 13,.....	501	12.0	307	415	41		96	99	100	SPWC
May 5,.....	1150		798	2480	30	59	94	97	100	SPWC
June 4,.....	1180	13.5	1460	4650	42	70	98			SPWC
June 11,.....	3730	21.0	9840	99100	40	72	98			SPWC
June 11,.....	3950	23.5	5610	59800	50	78	97			SPWC
June 19,.....	10400		10700	300000	45	76	99			SPWC
June 20,.....	11800	23.0	2170	69100	78	93	99	95		SPWC
June 20,.....	4520	27.0	754	9200	24	47	91			SPWC
Apr. 6, 1955	1110	8.5	1010	3030	46	77	97	98		SPWC
July 7,.....	187	25.5	580	293	72	95	99			SPWC
May 11, 1956	298	16.5	19800	15900	45	82	97	98	99	SPWC
June 6,.....	249	21.5	12700	8540	38	78	93	97	100	SPWC
July 7,.....	128	22.0	11100	3840	31	61	100			SPWC
Apr. 2, 1957	695	6.5	312	585	52	76	96	98	100	SPWC
May 9,.....	490	14.0	6740	8920	56	88	100			SPWC
June 5,.....	428	26.5	416	481	33	67	93	98	100	SPWC
June 5,.....	428	26.5	416	481	14	62				SPN
June 13,.....	320	21.0	22500	19400	53	62	96	98	99	SPWC
June 16,.....	1430	19.5	17400	67200	37	70	98	99	100	SPWC
June 17,.....	1550	19.5	6600	27600	55	89	97	99	100	SPWC
June 22,.....	4560	19.0	9350	115000	49	78	98	99	100	SPWC
July 4,.....	2060	24.0	7690	42800	44	74	99	100		SPWC
July 10,.....	768	28.5	848	1760	48	76	95	96	99	SPWC
July 10,.....	768	28.5	848	1760	24	76				SPN
Feb. 27, 1958	1600	1.5	5370	23200	33	45	93	95	99	SPWC
June 3,.....	2020	19.0	10600	57800	37	75	98	99	100	SPWC
June 4,.....	864	21.0	3990	9310	47	86	99	99	100	SPWC
June 4,.....	864	21.0	3990	9310	26	54	95			SPN
June 5,.....	1220	15.5	3480	11500	53	78	97	98	100	SPWC

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters	Methods of analysis				
			Concentration (mg/l)	Concentration (mg/l)	Concentration (mg/l)							
May 10, 1959	715	14.0	14700	28400	43	69	99	100	SPWC			
May 29,	3780	18.0	7320	74700	53	80	98	99	100	SPWC		
May 31,	6960	16.5	11300	212000	52	78	96	98	99	100	SPWC	
June 3,	2230	19.5	1030	6200	38	65	95	98	100	SPWC		
June 11,	3930	25.0	34100	362000	32	56	97	99	100	SPWC		
Aug. 3,	1790	24.0	3770	18200	75	82	99	100	100	SPWC		
Aug. 5,	605	26.5	2620	4280	37	67	100	100	100	SPWC		
Mar. 29, 1960	16000	4.5	1160	50100	46	85	100	100	100	SPWC		
Apr. 7,	4970	6.5	595	7980	42	60	86	91	98	100	SPN	
May 21,	5800	12.0	6800	106000	48	74	96	97	98	100	SPWC	
May 22,	7100	14.0	1400	26800	31	70	84	87	92	99	100	SPN
May 25,	8120	18.0	2630	57700	59	79	94	96	98	100	SPWC	
Aug. 28,	916	23.0	8500	21000	32	50	99	100	100	SPWC		
Aug. 28,	4460	23.0	6110	73600	35	60	97	99	100	SPWC		
Aug. 28,	4460	23.0	6110	73600	23	56	97	99	100	SPN		
Mar. 24, 1961	4550	4.5	2530	31100	47	63	91	94	98	100	SPWC	
Mar. 24,	4550	4.5	2530	31100	27	46	80	80	80	80	SPN	
June 2,	858	20.0	2920	6760	57	90	100	100	100	100	SPWC	
June 14,	4060	20.0	4890	53600	63	89	97	98	98	100	SPWC	
June 14,	4640	19.5	3610	45200	74	78	97	98	98	100	SPWC	
June 14,	4640	19.5	3610	45200	44	69	99	99	100	100	SPN	
June 27,	2700	21.5	11900	86800	49	81	97	99	100	100	SPWC	
June 27,	1700	21.5	12800	58800	53	88	99	100	100	100	SPWC	
Aug. 1,	986	23.5	4110	10900	51	79	99	100	100	100	SPWC	
Aug. 9,	7240	19.0	2920	57100	63	80	93	96	99	100	SPWC	
June 10, 1962	1800	21.0	2440	11900	49	73	90	99	99	100	SPWC	
July 27,	2570	21.0	3940	27300	19	55	81	96	98	100	SPWC	
July 27,	2570	21.0	3940	27300	5	28	51	81	81	81	SPN	

LITTLE SIOUX RIVER BASIN
 06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA

LOCATION.--Lat 42°04'56", long 96°00'50", in SE 1/4 SW 1/4 sec. 18, T.84 N., R.44 W., Monona County, on county highway bridge, 1.1 mi (1.8 km) south of Kennebec, 1.2 mi (1.9 km) downstream from Gard Creek, 5.5 mi (8.8 km) northeast of Onawa, 6.2 mi (10.0 km) upstream from Maple River, and at mile 22.0 (35.4 km).

DRAINAGE AREA.--2,738 miz (7,091 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--17 years (1939-49, 1950-57), 2,365,000 tons (2,146,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 77,100 mg/l June 2, 1949; minimum daily, not determined. Sediment discharge: Maximum daily, 527,000 tons (478,000 tonnes) June 18, 1950; minimum daily, 0 ton (0.0 tonne) on several days in 1940-1942.

REMARKS.--Flow affected by ice during winter months each year. Records of suspended-sediment furnished by the Corps of Engineers for the period 1939-49.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1940	A	24,700b	*	July 29	July 29	156,000	0	July 29	several days
1941	A	29,900b	*	June 3	June 3	164,000	0	Sept. 14	several days
1942	A	23,600b	*	June 3	June 3	258,000	0	June 30	several days
1943	A	32,900b	*	June 13	June 13	287,000	9	June 15	Dec. 28
1944	A	36,700b	*	May 18	May 18	437,000	16	June 11	Jan. 13-15
1945	A	16,100b	*	Aug. 5	Aug. 5	143,000	120	Aug. 5	Dec. 4, 14
1946	A	23,900b	*	May 19	May 19	235,000	61	Feb. 6	Dec. 27, 28
1947	A	22,600b	*	June 22	June 22	329,000	88	June 23	Sept. 9, 10
1948	A	7,600b	*	Mar. 17	Mar. 17	145,000	16	Feb. 28	Feb. 5
1949	A	77,100b	*	June 2	June 2	181,000	18	June 2	several days
1950a	1187	42,000	*	June 18	June 18	527,000	*	June 18	*
1951	1198	24,600	*	May 1	May 1	331,000	*	May 1	*
1952	1251	21,500	*	June 27	June 27	277,000	*	July 7	*

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Daily suspended sediment									
		Concentrations (mg/l)					Loads (tons)				
		Max.	Min.	Date	Max.	Date	Min.	Date	Max.	Date	Date
1953	1291	16,100	*	June 25	137,000	June 25	*				
1954	1351	20,900	*	May 27	255,000	June 19	*				
1955	1401	11,000	*	July 10	67,100	July 10	*				
1956	1451	10,900	*	June 6	10,300	June 6	*				
1957	1521	21,400	*	June 14	132,000	June 14	*				

A Published by Corps of Engineers
a May to September
b Maximum measured concentration
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)					
			Maximum	Minimum			Mean	Maximum daily	Weighted mean			
May.....1939	16,213	213,690	46,500	240	6,890	78	178	.....	.....	4,880
June.....	8,374	173,570	83,400	120	5,790	63	145	.....	.....	7,680
July.....	9,712	392,230	161,000	130	12,700	143	327	.....	.....	15,000
August.....	13,170	285,060	99,800	130	9,200	104	238	.....	.....	8,020
September.....	2,525	3,361	220	45	112	1.2	2.8	.....	.....	493
October.....	2,043	3,468	1,250	11	112	1.3	2.9	.....	.....	629
November.....	1,951	1,932	143	16	64	.71	1.6	.....	.....	367
December.....	1,886	1,365	96	0	44	.50	1.1	.....	.....	268
January.....1940	939	424	37	0	14	.15	.35	.....	.....	167
February.....	789	1,050	55	23	36	.38	.88	.....	.....	493
March.....	7,257	109,570	28,000	47	3,530	40	91	.....	.....	5,590
April.....	13,523	124,630	40,800	440	4,150	46	104	.....	.....	3,410
May.....	7,030	16,560	1,830	120	534	6.0	14	.....	.....	7,000
June.....	15,986	302,320	82,300	90	10,100	110	252	.....	.....	14,100
July.....	11,059	420,480	156,000	100	13,600	154	351	.....	.....	14,100
August.....	14,760	416,980	101,000	130	13,500	152	348	.....	.....	10,500

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Minimum	Maximum						
September.....	2,872	12,035	11	4,860	401	4.4	10	.....	1,550
Water Year 1940	80,095	1,410,814	0	156,000	3,850	515	1,180	.....	6,520
October.....	1,846	2,112	9.0	880	68	.77	1.8	.....	424
November.....	2,577	3,169	0	810	106	1.2	2.6	.....	455
December.....	3,489	3,865	0	240	125	1.4	3.2	.....	410
Cal. Year 1940	82,127	1,413,195	0	156,000	3,860	516	1,180	.....	6,370
January.....	4,420	4,213	0	280	136	1.5	3.5	.....	353
February.....	9,913	103,314	0	46,700	3,690	38	86	.....	3,860
March.....	35,735	319,220	180	20,300	10,300	117	266	.....	3,310
April.....	27,815	328,290	2,150	65,200	10,900	120	274	.....	4,370
May.....	12,247	98,330	320	17,000	3,170	36	82	.....	2,970
June.....	13,360	224,180	230	38,500	7,470	82	187	.....	6,210
July.....	12,010	150,397	77	45,500	4,850	55	126	.....	4,640
August.....	2,300	2,425	17	580	78	.89	2.0	.....	390
September.....	12,592	328,752	8.0	164,000	11,000	120	274	.....	9,670
Water Year 1941	138,304	1,568,267	0	164,000	4,300	573	1,310	.....	4,200
October.....	12,151	248,120	280	124,000	8,000	91	207	.....	7,560
November.....	19,616	223,720	1,100	33,900	7,460	82	187	.....	4,220
December.....	14,170	26,975	0	1,690	870	9.9	23	.....	705
Cal. Year 1941	176,329	2,057,936	0	164,000	5,640	752	1,720	.....	4,320
January.....	12,565	20,844	0	2,840	672	7.6	17	.....	614
February.....	14,205	25,820	430	1,850	922	9.4	22	.....	673
March.....	22,773	208,500	700	61,900	6,730	76	174	.....	3,390
April.....	31,678	180,330	550	25,400	6,010	66	151	.....	2,110
May.....	34,623	224,680	590	25,000	7,250	82	188	.....	2,400
June.....	62,744	1,341,800	3,090	258,000	44,700	490	1,120	.....	7,920
July.....	36,272	701,360	2,480	168,000	22,600	256	585	.....	7,160
August.....	23,785	142,890	320	23,000	4,610	52	119	.....	2,230
September.....	28,417	330,260	1,720	98,700	11,000	121	276	.....	4,300
Water Year 1942	312,999	3,675,299	0	258,000	10,100	1,340	3,070	.....	4,350
October.....	15,934	21,181	59	2,100	683	7.7	18	.....	492
November.....	8,875	8,954	72	570	298	3.3	7.5	.....	374
December.....	4,520	3,103	9.0	350	100	1.1	2.6	.....	254
Cal. Year 1942	296,391	3,209,722	0	258,000	8,790	1,170	2,680	.....	4,010

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
January...1943	3,213	1,636	120	15	53	.60	1.4	.....	189
February.....	38,100	278,690	53,100	130	9,950	102	233	.....	2,710
March.....	45,440	247,970	32,000	320	8,000	91	207	.....	2,020
April.....	25,734	201,090	21,800	360	6,700	73	168	.....	2,890
May.....	17,971	56,230	12,100	120	1,810	21	47	.....	1,160
June.....	53,860	1,825,260	287,000	3,380	60,800	667	1,520	.....	12,600
July.....	111,010	1,229,950	227,000	6,260	39,700	449	1,030	.....	4,100
August.....	31,974	301,450	32,400	3,110	9,720	110	252	.....	3,490
September.....	17,104	78,580	22,000	290	2,620	29	66	.....	1,700
Water Year 1943	373,735	4,254,094	287,000	9.0	11,700	1,550	3,550	.....	4,220
October.....	7,615	3,770	250	30	122	1.4	3.1	.....	183
November.....	10,640	9,840	1,000	90	328	3.6	8.2	.....	343
December.....	11,848	12,080	1,050	50	390	4.4	10	.....	378
Cal. Year 1943	374,509	4,246,546	287,000	15	11,600	1,550	3,540	.....	4,200
January...1944	5,464	4,033	790	16	130	1.5	3.4	.....	273
February.....	17,989	162,603	64,800	83	5,610	59	136	.....	3,350
March.....	27,004	133,430	18,500	650	4,300	49	111	.....	1,830
April.....	24,944	137,350	17,600	740	4,580	50	115	.....	2,040
May.....	82,370	1,320,530	295,000	6,250	42,600	482	1,100	.....	5,940
June.....	111,607	1,607,540	437,000	3,240	53,600	587	1,340	.....	5,330
July.....	75,112	663,010	145,000	980	21,400	242	553	.....	3,270
August.....	39,619	302,910	47,200	2,040	9,770	111	253	.....	2,830
September.....	36,410	140,110	11,700	1,400	4,670	51	117	.....	1,430
Water Year 1944	450,622	4,497,206	437,000	16	12,300	1,640	3,750	.....	3,700
October.....	21,286	34,270	2,580	610	1,110	13	29	.....	596
November.....	15,477	16,910	1,010	240	564	6.2	14	.....	405
December.....	8,665	5,760	330	120	186	2.1	4.8	.....	246
Cal. Year 1944	465,947	4,528,456	437,000	16	12,400	1,650	3,780	.....	3,600
January...1945	5,070	4,770	190	120	154	1.7	4.0	.....	348
February.....	20,825	44,190	5,800	130	1,580	16	37	.....	786
March.....	116,410	660,230	70,600	890	21,300	241	551	.....	2,100
April.....	53,290	185,730	16,000	2,180	6,190	68	155	.....	1,290
May.....	58,940	374,500	121,000	2,340	12,100	137	313	.....	2,350
June.....	132,050	724,190	56,000	7,150	24,100	264	604	.....	2,030
July.....	50,710	249,700	16,300	3,310	8,050	91	208	.....	1,820
August.....	63,407	592,870	143,000	1,260	19,100	217	495	.....	3,460
September.....	12,042	21,150	2,960	330	705	7.7	18	.....	651

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
Water Year 1945	558,172	2,914,270	143,000	120	7,980	1,060	2,430	.....	1,930
October.....	8,389	9,780	540	160	315	3.6	8.2	.....	432
November.....	6,858	5,200	210	110	173	1.9	4.3	.....	281
December.....	5,548	3,734	230	61	120	1.4	3.1	.....	249
Cal. Year 1945	533,539	2,876,044	143,000	61	7,880	1,050	2,400	.....	2,000
January....1946	5,040	12,420	3,780	80	401	4.5	10	.....	913
February.....	50,195	475,430	235,000	200	17,000	174	397	.....	3,510
March.....	63,180	468,680	47,100	3,280	15,100	171	391	.....	2,750
April.....	29,089	74,640	9,230	700	2,490	27	62	.....	950
May.....	30,130	461,770	165,000	630	14,900	169	385	.....	5,680
June.....	29,589	162,180	26,600	1,030	5,410	59	135	.....	2,030
July.....	15,002	44,340	3,080	460	1,430	16	37	.....	1,090
August.....	5,097	10,890	2,940	180	351	4.0	9.1	.....	791
September.....	6,057	25,670	5,210	160	856	9.4	21	.....	1,570
Water Year 1946	254,174	1,754,734	235,000	61	4,810	641	1,460	.....	2,560
October.....	13,632	50,020	6,720	170	1,610	18	42	.....	1,360
November.....	17,830	48,330	4,910	460	1,610	18	40	.....	1,000
December.....	12,445	16,700	1,940	130	539	6.1	14	.....	497
Cal. Year 1946	277,286	1,851,070	235,000	80	5,070	676	1,550	.....	2,470
January....1947	6,310	5,900	650	110	190	2.2	4.9	.....	346
February.....	16,975	31,030	6,710	210	1,110	11	26	.....	677
March.....	46,010	266,490	35,400	360	8,600	97	222	.....	2,150
April.....	64,390	617,690	105,000	3,500	20,600	226	516	.....	3,550
May.....	84,090	501,390	107,000	2,800	16,200	183	419	.....	2,210
June.....	75,850	936,980	329,000	3,450	31,200	342	782	.....	4,580
July.....	66,590	340,910	35,100	1,600	11,000	125	285	.....	1,900
August.....	9,401	14,090	1,110	100	455	5.1	12	.....	555
September.....	4,523	7,940	1,780	88	265	2.9	6.6	.....	650
Water Year 1947	418,046	2,837,470	329,000	88	7,770	1,040	2,370	.....	2,510
October.....	4,159	2,458	270	32	79	.90	2.1	.....	219
November.....	6,903	4,182	250	81	139	1.5	3.5	.....	224
December.....	5,595	2,243	150	40	72	.82	1.9	.....	148
Cal. Year 1947	390,796	2,731,303	329,000	32	7,480	998	2,280	.....	2,590
January....1948	4,315	2,202	310	18	71	.80	1.8	.....	189
February.....	27,915	278,915	145,000	16	9,620	102	233	.....	3,700

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
March	64,360	673,040	121,000	580	21,700	246	562	.....	3,870
April	21,630	40,170	7,540	170	1,340	15	34	.....	688
May	21,132	39,940	7,420	270	1,290	15	33	.....	700
June	12,576	32,780	8,370	140	1,090	12	27	.....	965
July	12,376	29,740	4,900	310	959	11	25	.....	890
August	9,593	46,618	9,090	31	1,500	17	39	.....	1,800
September	3,066	3,528	980	26	118	1.3	2.9	.....	426
Water Year 1948	193,620	1,155,816	145,000	16	3,160	422	965	.....	2,210
October	2,135	1,470	96	31	47	.54	1.2	.....	255
November	3,296	2,597	230	42	87	.95	2.2	.....	292
December	2,481	995	55	18	32	.36	.83	.....	149
Cal. Year 1948	184,875	1,151,995	145,000	16	3,150	421	962	.....	2,310
January	5,408	4,621	1,070	19	149	1.7	3.9	.....	316
February	8,218	15,806	4,490	19	564	5.8	13	.....	712
March	64,250	733,640	77,600	1,020	23,700	268	612	.....	4,230
April	44,365	203,120	26,000	820	6,770	74	170	.....	1,700
May	19,987	124,340	17,900	400	4,010	45	104	.....	2,300
June	24,440	525,630	181,000	820	17,500	192	439	.....	7,970
July	7,353	32,960	7,500	230	1,060	12	28	.....	1,660
August	3,880	6,890	1,290	70	222	2.5	5.8	.....	658
September	6,200	44,362	11,700	57	1,480	16	37	.....	2,650
Water Year 1949	192,013	1,696,431	181,000	18	4,650	620	1,420	.....	3,270
May	3,622	34,580	19,000	540	1,120	13	29	12,100	3,540	
June	31,330	1,609,270	527,000	140	53,600	588	1,340	42,000	19,000	
July	29,909	473,780	101,000	150	15,300	173	395	20,600	5,870	
August	14,426	271,970	154,000	130	8,770	99	227	27,900	6,980	
September	6,357	11,569	2,590	27	386	4.2	9.7	1,700	674	
October	6,819	26,553	18,400	35	857	9.7	22	9,360	1,440	
November	3,626	1,222	67	23	41	.45	1.0	200	125	
December	2,263	391	.....	.....	13	.14	.33	.....	64
January	1,698	288	.....	.....	9.3	.11	.24	.....	63
February	4,335	159,673	150,000	.....	5,700	58	133	21,600	13,600
March	52,335	803,158	255,000	40	25,900	293	670	.....	5,680
April	191,040	1,074,000	200,000	8,330	35,800	392	896	18,200	2,080	
May	96,350	711,470	331,000	1,330	23,000	260	594	24,600	2,730	
June	81,360	1,076,470	169,000	2,880	35,900	393	899	19,600	4,900	
July	94,350	598,460	267,000	3,910	19,300	219	500	16,400	2,350	
August	85,510	1,053,540	158,000	2,950	34,000	385	879	12,700	4,560	

066C6700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
September.....	83,450	513,830	133,000	1,450	17,100	188	429	15,900	2,280	
Water Year 1951	703,136	6,019,055	331,000	.....	16,500	2,200	5,020	24,600	3,170
October.....	37,800	91,433	41,700	677	2,950	33	76	8,680	896	
November.....	22,059	15,968	1,370	246	532	5.8	13	845	268	
December.....	20,700	14,377	1,480	.....	464	5.3	12	570	257
Cal. Year 1951	770,987	6,112,667	331,000	.....	16,700	2,230	5,100	24,600	2,940
January.....	17,880	34,930	16,000	.....	1,130	13	29	.....	724
February.....	48,580	267,020	32,000	1,360	9,210	98	223	.....	2,040
March.....	82,320	828,449	163,000	999	26,700	303	692	11,800	3,730	
April.....	133,640	448,910	54,400	2,530	15,000	164	375	2,820	1,240	
May.....	37,560	201,087	61,300	837	6,490	73	168	18,400	1,980	
June.....	27,001	412,586	140,000	600	13,800	151	344	21,500	5,660	
July.....	48,950	789,769	277,000	736	25,500	288	659	17,500	5,980	
August.....	11,939	24,581	2,490	274	25,793	9.0	21	2,660	763	
September.....	7,622	9,296	1,520	88	310	3.4	7.8	930	452	
Water Year 1952	496,051	3,138,406	277,000	.....	8,570	1,150	2,620	21,500	2,340
October.....	4,625	1,566	.....	.....	51	.57	1.3	.....	125
November.....	4,465	967	.....	.....	32	.35	.81	.....	80
December.....	3,847	892	.....	.....	29	.33	.74	.....	86
Cal. Year 1952	428,429	3,020,053	277,000	.....	8,250	1,100	2,520	21,500	2,610
January.....	3,859	279	.....	.....	9.0	.10	.23	.....	27
February.....	4,365	768	.....	.....	27	.28	.64	.....	65
March.....	38,549	186,785	23,700	.....	6,030	68	156	4,030	1,790
April.....	28,935	32,317	2,290	265	1,080	12	27	690	414	
May.....	37,070	86,833	6,950	775	2,800	32	72	2,360	868	
June.....	127,470	934,724	137,000	618	31,200	341	780	16,100	2,720	
July.....	41,725	122,978	11,900	888	3,970	45	103	2,540	1,090	
August.....	34,929	110,832	17,200	325	3,580	40	93	2,640	1,180	
September.....	6,566	3,264	322	48	109	1.2	2.7	320	184	
Water Year 1953	336,405	1,482,205	137,000	.....	4,060	541	1,240	16,100	1,630
October.....	4,578	1,624	.....	.....	52	.59	1.4	.....	131
November.....	4,718	1,098	.....	.....	37	.40	.92	.....	86
December.....	4,835	479	.....	.....	15	.17	.40	.....	37
Cal. Year 1953	337,599	1,481,981	137,000	.....	4,060	541	1,240	16,100	1,630

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Maximum		Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)		
			Maximum	Minimum	Minimum	Maximum				Maximum daily	Weighted mean	
Water Year 1956	30,210	51,981	10,300	.....	142	19	43	10,900	637		
October.....	556	194	65	.....	6.3	.07	.16	.....	129		
November.....	1,438	556	48	.....	19	.20	.46	.....	143		
December.....	1,230	180	15	.....	5.8	.07	.15	.....	54		
Cal. Year 1956	29,557	50,930	10,300	.....	139	19	43	10,900	638		
January....1957	834	190	10	.....	6.1	.07	.16	.....	84		
February.....	949	77	6.0	.....	2.0	.03	.06	.....	30		
March.....	4,143	15,440	6,020	.....	498	5.6	13	3,540	1,380		
April.....	9,304	18,826	4,850	.....	628	6.9	16	2,180	749		
May.....	7,289	32,582	9,650	.....	1,050	12	27	4,660	1,660		
June.....	34,355	704,316	132,000	.....	23,500	257	588	21,400	7,590		
July.....	23,648	238,988	111,000	.....	7,710	87	199	14,900	3,740		
August.....	5,600	26,677	20,100	.....	861	9.7	22	6,720	1,760		
September.....	7,202	69,539	52,900	.....	2,320	25	58	12,300	3,580		
Water Year 1957	96,548	1,107,565	132,000	.....	3,030	405	924	21,400	4,250		

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis		
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters				
May 23, 1950	422		1390	1580	20	36	99	100	SPWC
June 12,	4330		78100	913000	28	52	99	100	SPWC
June 12,	4330		58900	689000	29	57	100		SPWC
June 12,	3460		54600	510000	38	70	100		SPWC
June 14,	351		1880	1780	46	68	99	100	SPWC
June 18,	5800		63200	990000	25	47	99	100	SPWC
June 18,	6080		62200	1020000	28	52	99	100	SPWC
June 18,	6140		35400	587000	34	60	99	100	SPWC
June 18,	6080		26100	428000	28	46	59	82	SPWC
June 18,	6080		26100	428000	2	9	46	86	SPN
July 6,	304		291	239	39	50	92	100	SPWC
July 12,	1100		20700	61500	30	59	97	100	SPWC
July 12,	2170		33600	197000	27	60	60	99	SPWC
July 12,	2170		33600	197000	1	4	31	89	SPN
July 13,	964		8300	21600	41	67	99	100	SPWC
July 17,	665		6360	11400	53	85	99	100	SPWC
July 19,	1740		9700	45600	26	46	98	100	SPWC
July 20,	1030		2920	8120	39	59	98	100	SPWC
July 22,	1850		3950	19700	28	45	96	100	SPWC
July 25,	2050		3070	17000	24	39	93	100	SPWC
July 30,	930		47700	120000	24	36	53	81	SPWC
July 30,	930		47700	120000	1	7	40	81	SPN
Aug. 8,	695		10300	19300	28	51	66	83	SPWC
Aug. 8,	695		10300	19300	2	6	26	91	BN
Aug. 12,	2580		37100	250000	27	49	100		SPWC
Aug. 12,	2580		29700	207000	29	49	100		SPWC
Aug. 12,	2460		36900	245000	28	50	99	100	SPWC
Sept. 21,	282		1780	1360	51	77	100		SPWC
Sept. 23,	550		1780	2640	29	48	98	100	SPWC
Sept. 24,	564		1650	2510	41	63	98	100	SPWC
Sept. 26,	454		873	1070	44	62	98	100	SPWC
Oct. 2, 1950	834		10900	24500	25	45	98	100	SPWC
Oct. 2,	930		10900	27400	29	52	99	100	SPWC
Oct. 2,	930		16500	41400	31	61	98	100	SPWC
Oct. 10,	260	13.0	260	183	31		94	100	SPWC
Dec. 2,	92	.0	120	30			35	72	S
Mar. 21, 1951	175	.0	70	33	79	90	98	100	SPWC

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis		
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters	Percent finer than 0.008	Percent finer than 0.016			
Apr. 3, 1952	5250	4.0	2340	33200	27	41	90	97	100	SPWC
Apr. 7, 1952	9700	3.5	2480	65000	26	37	73	81		SPWC
Apr. 8, 1952	10800	3.0	2240	65300	9	14	29			BN
Apr. 8, 1952	10800	3.0	2240	65300	27	36	69	76		SPWC
Apr. 9, 1952	11900	4.5	1530	49200	25	36	67	74	92	100
May 9, 1952	4150	15.0	1200	13400	28	43	87	100		SPWC
July 2, 1952	2760	21.0	1360	10100			78	88	97	100
Aug. 7, 1952	1280	24.5	915	3160	37	55	93	95	98	100
Aug. 15, 1952	6000	20.5	3920	63500	30	46	95	97	99	100
Aug. 15, 1952	5800	20.0	2800	43800	29	44	94	98	99	100
Aug. 25, 1952	2010	21.5	939	5100	27	36	93	97	100	
Sept. 6, 1952	1380	20.5	764	2850	25	28	82	87	94	100
Sept. 11, 1952	1880	18.5	3600	18300	16	48	94	98	99	100
Sept. 11, 1952	3100	19.5	4140	34700	20	34	92	96	98	100
Sept. 12, 1952	6460	18.5	12000	209000	20	34	71	96	98	99
Sept. 19, 1952	4430	18.0	941	11300	12	28	72	82	82	94
Feb. 6, 1952	820		3050	6750	4	34	61			
Feb. 6, 1952	820		3050	6750	22	31	74	97	99	100
Apr. 2, 1952	7550	5.5	2200	44800	18	22	43	62	75	93
Apr. 4, 1952	7960	3.5	1980	42600	20	30	54	76	86	98
June 3, 1952	738	20.0	522	1040	18	28	58	89	94	99
June 27, 1952	1880	24.5	20000	102000	21	43	60	85	100	
July 1, 1952	1460	27.0	5860	23100	13	17	22	30	55	94
July 7, 1952	7150		34700	670000	21	30	40	56	85	98
Aug. 5, 1952	415	22.0	408	457	30	42	50	72	91	94
Oct. 9, 1952	155	9.0	102	43				94	96	100
Nov. 14, 1952	155	5.5	97	41				77	86	97
Dec. 4, 1952	132	.0	39					92	96	98
Feb. 3, 1953	138	.0	18					92	96	100
Mar. 19, 1953	2460	5.5	2460	16300	3	6	57			
Mar. 19, 1953	2460	5.5	2460	16300	14	22	64	91	96	99
Apr. 3, 1953	1240	7.0	660	2210	2	4	60			
Apr. 3, 1953	1240	7.0	660	2210	22	27	66	85	94	98
May 7, 1953	1800	13.5	922	4480	20	26	72	88	94	99
June 1, 1953	702	21.0	344	652				88	94	98
June 10, 1953	9100	19.5	4320	106000	2	5	71			

06606700 LITTLE SIOUX RIVER NEAR KENNEBEC, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters				Methods of analysis	
			Concentration (mg/L)	Percent finer	0.002	0.004		0.008	0.016	0.031	0.062		0.125	0.250	0.500	1.00
June 10,.....	9100	19.5	4320	46	50	55	59	73	91	95	99	100	SPWC
July 1,.....	2380	25.5	1100	33	37	46	57	74	86	92	99	100	SPWC
Aug. 5,.....	1460	24.0	1780	26	38	50	66	83	92	95	97	100	SPWC
Sept. 1,.....	373	25.5	326			328			96	98	100		S
Feb. 24, 1954	908	2.0	1440		52	58			92				SPWC
Apr. 13,.....	604	11.0	460		38		68		93	96	100		SPWC
May 4,.....	874		809		23		42		82	95			SPWC
May 27,.....	1360	15.5	80600		25		48		98				SPWC
June 3,.....	1620		6080		36		63		97				SPWC
June 11,.....	2030	24.0	7640		34		65		94	98			SPWC
June 11,.....	3270	24.0	10200		30		60		95	97			SPWC
June 12,.....	3740	22.0	8370		33		66		96	98			SPWC
June 19,.....	5090	22.0	25400		28		54		98	99			SPWC
June 20,.....	9100		5370		54		72		95	98			SPWC
June 30,.....	5690	27.0	1700		24		40		88	94	100		SPWC
Apr. 5, 1955	1260	8.0	7360		48		82		97	98	99		SPWC
May 5,.....	995	16.5	950		25		51		88	95	99		SPWC
July 6,.....	1660	24.5	8590		48		82		98	99	100		SPWC
May 11, 1956	298	16.5	19800		45		82		97	98	99	100	SPWC
June 6,.....	249	21.5	12700		38		78		93	97	100		SPWC
July 7,.....	128	22.0	11100		31		61		100				SPWC
Apr. 2, 1957	773	6.5	1500		27		43		89	95	99	100	SPWC
Apr. 2,.....	773	6.5	1500		26		44						SPN
May 10,.....	630	14.5	6140		55		80		98	99	100		SPWC
June 6,.....	452	22.0	821		33		57		96	99	100		SPWC
June 6,.....	452	22.0	821		31		52						SPN
June 14,.....	3110	18.0	32200		39		74		94	97	99	100	SPWC
June 17,.....	1360	19.0	12300		36		70		98	99	99	100	SPWC
June 23,.....	4360	19.5	11400		41		70		93	96	99	100	SPWC
July 10,.....	1320	26.5	3230		41		72		91	96	99	100	SPWC
July 10,.....	1320	26.5	3230		27		72						SPN
Aug. 3,.....	1130	24.5	14800		38		59		100				SPWC
Sept. 2,.....	2260	24.5	20200		31		57		97	99	100		SPWC
Sept. 6,.....	368	16.5	8240		34		67		100				SPWC

LITTLE SIOUX RIVER BASIN
 06607200 MAPLE RIVER AT MAPLETON, IOWA

LOCATION.--Lat 42°09'28", long 95°48'27", in SE1/4 SE1/4 sec.23, T.85 N., R.43 W., Monona County, at bridge on State Highway 175, 80 ft (24 m) downstream from Chicago & North Western Railway Co. bridge, 0.5 mi (0.8 km) southwest of Mapleton, 0.8 mi (1.3 km) downstream from Wilsey Creek, 2.0 mi (3.2 km) upstream from McClarey Creek, and 16.0 mi (25.7 km) upstream from mouth.

DRAINAGE AREA.--669 mi² (1,733 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--10 years (1941-51), 2,109,000 tons (1,905,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 139,000 mg/l June 16, 1943; minimum daily, not determined.

Sediment discharge: Maximum daily, 473,000 tons (429,000 tonnes) June 18, 1950; minimum daily, 0 ton (0.0 tonne) on several days in 1942-45.

REMARKS.--Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water W.S.P. year	Concentrations (mg/l)				Daily suspended sediment			
	Max.	Date	Min.	Date	Max.	Date	Min.	Date
1942	A 61,500	June 18	*		442,000	June 2	0	Apr. 25
1943	A 139,000	June 16	*		442,000	June 16	0	Apr. 25
1944	A 83,700	Mar. 23	*		220,000	June 11	0	several days
1945	A 66,900	July 16	*		266,000	May 31	0	Sept. 21-22
1946	A 28,900	Sept. 4	*		187,000	May 24	17	Dec. 21-25
1947	A 33,100	Apr. 10	*		244,000	June 22	21	Sept. 28
1948	A 102,000	Apr. 22	*		373,000	Feb. 27	7	several days
1949	A 67,100	May 25	*		232,000	Mar. 5	5	several days
1950	A 24,600	May 9	*		473,000	June 18	1	several days
1951	A 82,300	June 19	*		310,000	July 3	5	several days

A Published by Corps of Engineers
 * Maximum measured concentration
 * Not determined

06607200 MAPLE RIVER AT MAPLETON, IOWA--CONTINUED

MONTHLY AND YEARLY SUMMARIES

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Maximum	Minimum						
October...1941	4,215	64,751	24,600	86	2,090	97	54		5,690	
November.....	6,708	68,860	10,900	270	2,300	103	57		3,800	
December.....	3,417	15,910	1,510	200	513	24	13		1,720	
January...1942	3,177	14,417	1,960	53	465	22	12		1,680	
February.....	3,381	9,951	1,400	92	355	15	8.3		1,090	
March.....	5,511	50,540	5,830	130	1,630	76	42		3,400	
April.....	3,578	10,011	1,690	0	334	15	8.4		1,040	
May.....	3,650	37,740	4,210	510	1,220	56	32		3,830	
June.....	31,768	1,954,140	442,000	1,370	65,100	2,920	1,630		22,800	
July.....	8,512	241,490	57,100	260	7,790	361	202		10,500	
August.....	3,882	40,380	15,600	100	1,300	60	34		3,850	
September.....	3,281	61,210	18,600	64	2,040	91	51		6,910	
Water Year 1942	81,080	2,569,400	442,000	0	7,040	3,840	2,140	0	11,700	
October.....	1,445	2,379	160	0	77	3.6	2.0		610	
November.....	1,168	667	110	8.0	22	1.00	.56		212	
December.....	724	1,115	100	12	36	1.7	.93		570	
Cal. Year 1942	70,077	2,424,040	442,000	0	6,640	3,620	2,020		12,800	
January...1943	706	837	61	4.0	27	1.3	.70		439	
February.....	11,704	56,080	8,650	22	2,000	84	47		1,770	
March.....	4,730	93,698	34,600	78	3,020	140	78		7,340	
April.....	2,223	23,808	4,010	48	794	36	20		3,970	
May.....	2,690	19,707	5,630	15	636	29	16		2,710	
June.....	11,210	843,862	401,000	82	28,100	1,260	704		27,900	
July.....	10,028	636,637	279,000	59	20,500	952	531		23,500	
August.....	11,964	234,950	102,000	150	7,580	351	196		7,270	
September.....	2,360	27,874	10,100	0	929	42	23		4,370	
Water Year 1943	60,952	1,941,614	401,000	0	5,320	2,900	1,620		11,800	
October.....	1,239	7	7.0	0	.23	.01	.01		2	
November.....	1,522	1,078	67	0	36	1.6	.90		262	
December.....	983	624	83	0	20	.93	.52		235	
Cal. Year 1943	61,359	1,939,162	401,000	0	5,310	2,900	1,620		11,700	
January...1944	1,165	2,070	420	0	67	3.1	1.7		658	
February.....	3,478	47,940	25,900	5.0	1,710	72	40		5,110	
March.....	8,146	299,036	93,000	27	9,650	447	250		13,600	
April.....	5,574	73,790	11,800	120	2,460	110	62		4,900	

06607200 MAPLE RIVER AT MAPLETON, IOWA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
May.....	11,894	552,010	140,000	160	825	461	.....	17,200
June.....	36,950	1,074,330	220,000	420	1,610	897	.....	10,800
July.....	15,731	369,850	70,300	230	553	309	.....	8,710
August.....	17,672	383,950	162,000	430	574	320	.....	8,050
September.....	6,047	21,540	5,830	180	32	18	.....	1,320
Water Year 1944	110,401	2,826,225	220,000	0	4,220	2,360	.....	9,480
October.....	3,972	4,743	320	87	7.1	4.0	.....	442
November.....	3,015	3,126	160	37	4.7	2.6	.....	384
December.....	2,076	1,989	140	20	3.0	1.7	.....	355
Cal. Year 1944	115,720	2,834,374	220,000	0	4,240	2,370	.....	9,070
January.....	1,740	3,160	220	47	4.7	2.6	.....	673
February.....	6,725	68,347	11,900	97	102	57	.....	3,760
March.....	25,456	449,650	120,000	490	672	375	.....	6,540
April.....	14,154	495,470	222,000	400	741	414	.....	13,000
May.....	16,923	419,580	266,000	650	627	350	.....	9,180
June.....	21,522	372,080	180,000	880	556	311	.....	6,400
July.....	18,607	669,430	204,000	550	1,000	559	.....	13,300
August.....	25,681	383,180	147,000	240	573	320	.....	5,530
September.....	5,490	34,288	4,210	0	51	29	.....	2,310
Water Year 1945	145,361	2,905,043	266,000	0	4,340	2,420	.....	7,400
October.....	3,993	5,928	790	68	8.9	4.9	.....	550
November.....	2,830	3,351	200	34	5.0	2.8	.....	439
December.....	1,925	1,692	140	17	2.5	1.4	.....	326
Cal. Year 1945	145,046	2,906,156	266,000	0	4,340	2,430	.....	7,420
January.....	2,620	2,680	220	50	4.0	2.2	.....	379
February.....	18,117	97,780	22,600	50	146	82	.....	2,000
March.....	14,853	265,760	66,900	690	397	222	.....	6,630
April.....	6,482	16,620	2,000	170	25	14	.....	950
May.....	14,546	433,180	187,000	160	648	362	.....	11,000
June.....	8,151	78,220	37,000	400	117	65	.....	3,550
July.....	4,991	19,980	2,270	270	30	17	.....	1,480
August.....	2,751	28,960	12,100	80	43	24	.....	3,900
September.....	5,164	107,360	85,600	70	160	90	.....	7,700
Water Year 1946	86,423	1,061,511	187,000	17	1,590	886	.....	4,550
October.....	2,918	11,004	2,620	61	16	9.2	.....	1,400
November.....	2,692	4,817	420	97	7.2	4.0	.....	663

06607200 MAPLE RIVER AT MAPLETON, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
December.....	2,439	3,164	510	28	102	4.7	2.6	.....	480
Cal. Year 1946	85,724	1,069,525	187,000	28	2,930	1,600	893	.....	4,620
January.....1947	1,587	1,297	97	28	42	1.9	1.1	.....	303
February.....	2,940	5,517	810	25	197	8.2	4.6	.....	695
March.....	8,072	23,712	2,140	78	765	35	20	.....	1,090
April.....	9,393	161,130	70,900	520	5,370	241	134	.....	6,350
May.....	5,591	28,630	3,930	190	924	43	24	.....	1,900
June.....	13,937	631,930	244,000	240	21,100	945	527	.....	16,800
July.....	6,449	31,380	7,570	140	1,010	47	26	.....	1,800
August.....	2,180	3,629	220	61	117	5.4	3.0	.....	617
September.....	1,385	2,187	740	21	73	3.3	1.8	.....	585
Water Year 1947	59,583	908,397	244,000	21	2,490	1,360	758	.....	5,650
October.....	1,177	808	110	10	26	1.2	.67	.....	254
November.....	1,786	1,948	110	28	65	2.9	1.6	.....	404
December.....	1,524	1,194	77	10	39	1.8	1.00	.....	290
Cal. Year 1947	56,021	893,362	244,000	10	2,450	1,340	746	.....	5,910
January.....1948	1,279	976	140	7.0	31	1.5	.81	.....	283
February.....	18,870	690,513	373,000	10	24,700	1,030	576	.....	13,600
March.....	17,353	498,120	196,000	160	16,100	745	416	.....	10,600
April.....	4,931	91,947	53,900	58	3,060	137	77	.....	6,910
May.....	4,298	19,545	5,500	75	630	29	16	.....	1,680
June.....	3,179	16,352	4,610	43	545	24	14	.....	1,910
July.....	4,276	126,274	99,100	48	4,070	189	10.5	.....	14,300
August.....	4,282	63,257	34,300	48	2,040	95	53	.....	5,470
September.....	833	894	110	13	30	1.3	.75	.....	397
Water Year 1948	62,788	1,511,828	373,000	7.0	4,140	2,260	1,260	.....	8,920
October.....	720	345	19	5.0	11	.52	.29	.....	177
November.....	705	356	21	5.0	12	.53	.30	.....	187
December.....	617	431	18	11	14	.64	.36	.....	259
Cal. Year 1948	60,343	1,509,010	373,000	5.0	4,130	2,260	1,260	.....	9,260
January.....1949	1,559	3,882	1,800	7.0	125	5.8	3.2	.....	922
February.....	3,071	30,490	12,900	7.0	1,050	46	25	.....	3,680
March.....	25,408	822,140	232,000	270	26,500	1,230	686	.....	12,000
April.....	4,430	11,237	1,440	52	375	17	9.4	.....	939
May.....	5,505	139,639	69,900	32	4,500	209	117	.....	9,390
June.....	4,476	58,524	18,100	77	1,950	87	49	.....	4,840

06607200 MAPLE RIVER AT MAPLETON, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
July.....	2,957	47,850	16,400	42	1,540	1,750	72	40	.....	5,990
August.....	1,138	3,430	1,890	14	111	1,750	5.1	2.9	.....	1,120
September.....	4,234	52,400	28,500	11	1,750	1,750	78	44	.....	4,580
Water Year 1949	54,820	1,170,724	232,000	5.0	3,200	1,750	1,750	977	.....	7,910
October.....	1,540	2,295	320	24	74	74	3.4	1.9	.....	552
November.....	1,073	887	60	10	30	30	1.3	.74	.....	306
December.....	1,110	1,394	120	13	45	45	2.1	1.2	.....	465
Cal. Year 1949	56,501	1,174,168	232,000	7.0	3,210	1,760	1,760	980	.....	7,700
January.....1950	496.5	116	10	1.0	3.7	1.0	.17	.10	.....	87
February.....	2,556.5	4,401	1,020	1.0	157	157	6.6	3.7	.....	638
March.....	14,421	25,588	4,380	60	825	825	38	21	.....	657
April.....	1,957	1,262	140	12	42	42	1.9	1.1	.....	239
May.....	4,263	75,531	32,600	16	2,440	2,440	113	63	.....	6,560
June.....	25,266	996,379	473,000	11	33,200	33,200	1,490	832	.....	14,600
July.....	10,417	145,165	64,500	95	4,680	4,680	217	121	.....	5,160
August.....	5,400	59,500	50,900	130	1,920	1,920	89	50	.....	4,080
September.....	1,696	1,967	140	38	66	66	2.9	1.6	.....	430
Water Year 1950	70,196	1,314,485	473,000	1.0	3,600	1,960	1,960	1,100	.....	6,940
October.....	1,922	4,261	2,960	16	137	137	6.4	3.6	.....	821
November.....	1,238	1,050	69	21	35	35	1.6	.88	.....	314
December.....	895	564	21	13	18	18	.84	.47	.....	233
Cal. Year 1950	70,528	1,315,784	473,000	1.0	3,600	1,970	1,970	1,100	.....	6,910
January.....1951	535	229	13	5.0	7.4	5.0	.34	.19	.....	159
February.....	2,153	21,268	20,300	5.0	759	759	32	18	.....	3,660
March.....	40,477	861,550	251,000	16	27,800	27,800	1,290	719	.....	7,880
April.....	26,852	471,980	146,000	2,030	15,700	15,700	706	394	.....	6,510
May.....	28,133	653,590	294,000	1,140	21,100	21,100	977	546	.....	8,600
June.....	23,040	663,750	163,000	1,420	22,100	22,100	992	554	.....	10,700
July.....	24,656	798,880	310,000	2,080	25,800	25,800	1,190	667	.....	12,000
August.....	38,141	951,740	342,000	520	30,700	30,700	1,420	794	.....	9,240
September.....	31,032	365,790	103,000	2,150	12,200	12,200	547	305	.....	4,370
Water Year 1951	219,074	4,794,652	342,000	5.0	13,100	7,170	7,170	4,000	.....	8,110

LITTLE SIOUX RIVER BASIN
 06607300 MAPLE RIVER AT TURIN, IOWA

LOCATION.--Lat 42°01'01", long 95°57'00", in SW1/4 NE1/4 sec.10, T.83 N., R.44 W., Monona County, at bridge on State Highway 37, 0.2 mi (0.3 km) upstream from Beaver Creek, 0.7 mi (1.1 km) east of Turin, and 2 mi (3.2 km) upstream from mouth.

DRAINAGE AREA.--725 mi² (1,878 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 73,400 mg/l May 27, 1939; minimum daily, not determined. Sediment discharge: Maximum daily, 217,000 tons (197,000 tonnes) June 4, 1940; minimum daily, 0 ton (0.00 tonne) on several days in 1939-41.

REMARKS.--Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Min.	Date	Date
1939a	A	73,400	*	May 27	July 7
1940	A	34,500	*	July 29	June 4
1941	A	16,900	*	June 30	July 1

A Published by Corps of Engineers

a March to September

+ Maximum measured concentration

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
			Maximum	Minimum					Mean
May	2,461	183,106	135,000	29	5,910	253	153	27,600
June	2,391	66,772	25,200	23	2,230	92	56	10,300
July	4,360	289,957	143,000	9.0	9,350	400	242	24,600
August	2,762	101,755	52,100	9.0	3,280	140	85	13,600
September	399	756	76	0	25	1.0	.63	702
October	636	23,588	22,600	0	761	33	20	13,700
November	341	894	71	0	30	1.2	.75	971
December	359	396	39	0	13	.55	.33	409

06607300 MAPLE RIVER AT TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January... 1940	189	216	23	3.0	7.0		.30	.18		423	
February.....	155	266	23	3.0	9.0		.37	.22		636	
March.....	3,273	123,439	61,300	47	3,980		170	103		14,000	
April.....	3,313	126,950	52,800	140	4,230		175	106		14,200	
May.....	1,101	5,295	1,050	11	171		7.3	4.4		1,780	
June.....	7,244	451,547	217,000	21	15,100		623	377		23,100	
July.....	9,365	668,841	196,000	37	21,600		923	558		26,500	
August.....	9,590	351,101	114,000	36	11,300		484	293		13,600	
September.....	2,198	23,472	12,800	59	782		32	20		3,960	
Water year 1940	37,764	1,776,005	217,000	0	4,870		2,450	1,480		17,400	
October.....	1,007	2,427	1,020	0	78		3.3	2.0		893	
November.....	1,191	1,534	190	0	51		2.1	1.3		477	
December.....	1,419	3,312	210	0	107		4.6	2.8		864	
Cal. Year 1940	40,045	1,758,400	217,000	0	4,820		2,430	1,470		16,300	
January... 1941	1,309	1,707	180	0	55		2.4	1.4		483	
February.....	3,366	17,376	3,790	0	599		24	15		1,910	
March.....	5,983	59,390	4,760	450	1,920		82	50		3,680	
April.....	3,148	36,590	5,130	340	1,220		50	31		4,300	
May.....	2,693	19,210	2,500	130	620		26	16		2,640	
June.....	3,803	142,450	42,900	120	4,750		196	119		13,900	
July.....	3,025	104,202	43,200	24	3,360		144	87		12,800	
August.....	854	16,374	15,400	6.0	528		23	14		7,100	
September.....	3,530	64,037	21,400	3.0	2,130		88	53		6,720	
Water year 1941	31,328	468,609	43,200	0	1,280		646	391		5,540	

LITTLE SIOUX RIVER BASIN
 066607500 LITTLE SIOUX RIVER AT TURIN, IOWA

LOCATION. --Lat 41°57'52", long 95°58'21", in NW 1/4 NE 1/4 sec. 33, T.83 N., R.44 W., Monona County, at bridge on county highway E51, 1.0 mi (1.6 km) east of gaging station on Monona-Harrison ditch near Turin, 2.5 mi (4.0 km) downstream from Maple River, 3.8 mi (6.1 km) south of Turin, 6.2 mi (10.0 km) northeast of Blencoe, and at mile 13.5 (21.7 km).

DRAINAGE AREA. --3,526 mi² (9,132 km²) since February 1958. For period April 1939 to May 1942, combined area above this station and Monona-Harrison ditch was 4,470 mi² (11,577 km²) at site near Blencoe and June 1942 to September 1951, 4,460 mi² (11,551 km²) at site 1,200 ft east on old river channel.

REMARKS. --Equalizer ditch 1.5 mile (2.4 km) upstream between Little Sioux River and Monona-Harrison ditch in effect prior to January 1958. Records were not equivalent. Records of suspended sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Daily suspended sediment					
		Concentrations (mg/l)		Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date
1940	A	42,300	*	July 29	154,000	0	June 4 several days
1941	A	31,000	*	Sept. 14	86,500	0	Sept. 14 several days
1942	A	25,100	*	July 29	403,000	60	June 29 Aug. 27
1943	A	27,200	*	Aug. 25	301,000	0	July 19 several days
1944	A	54,300	*	June 11	505,000	24	June 11 Jan. 12-13
1945	A	71,200	*	May 31	725,000	45	May 31 Jan. 23-24
1946	A	25,400	*	May 19	83,000	40	May 24 Sept. 3-4
1947	A	18,400	*	June 6	145,000	0	June 23 several days
1949	A	56,000	*	June 4	114,000	0	Mar. 7 several days
1950	A	127,000	*	June 12	170,000	0	June 18 several days
1951	A	116,000	*	Sept. 12	177,000	0	July 3 several days
1960	A	9,110	*	July 19	11,440,000	12	Mar. 30 several days
1961	A	35,600	*	Mar. 28	196,000	145	Aug. 10 Oct. 28
1962	A	22,900	*	May 23	630,000	27	Mar. 29 Nov. 19
1963	A	7,210	*	Aug. 6	11,040,000	74	June 2 Sept. 22
1964	A	15,700	*	May 8	317,000	39	May 26 Nov. 12-14

C6607500 LITTLE SIOUX RIVER AT TURIN, IOWA--CONTINUED

ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Concentrations (mg/L)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	Date
1965	A	7,370	*	Apr. 3	412,000	4	Apr. 7	4	Jan. 31
1966	A	16,400	*	June 9	102,000	6	June 9	6	several days
1967	A	42,700	*	June 5	1,750,000	1	June 16	1	several days
1968	A	13,100	*	Aug. 27	22,600	1	June 26	1	several days

A Published by Corps of Engineers
 † Maximum measured concentration
 * Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi.	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
May.....1939	5,853	168,485	64,800	55	5,440	38	141	.....	10,700
June.....	3,689	113,909	55,500	16	3,800	26	95	.....	11,400
July.....	4,347	289,003	143,000	1.0	9,320	65	241	.....	24,600
August.....	5,073	208,245	113,000	0	6,720	47	174	.....	15,200
September.....	0	0	0	0	0	0	0	.....	0
October.....	191.1	2,046	1,360	0	66	.46	1.7	.....	3,970
November.....	445	391	43	0	13	.09	.33	.....	325
December.....	229.3	287	49	0	9.3	.06	.24	.....	464
January.....1940	14.5	10	2.0	0	.32	0	.01	.....	255
February.....	43.8	66	8.0	0	2.0	.01	.06	.....	558
March.....	7,070	232,590	73,800	10	7,500	53	194	.....	12,200
April.....	9,037	191,730	70,900	80	6,390	43	160	.....	7,860
May.....	2,505	12,970	830	10	418	2.9	11	.....	1,920
June.....	16,275	438,330	154,000	26	14,600	99	366	.....	9,980
July.....	9,139	422,250	146,000	0	13,600	95	352	.....	17,100
August.....	4,530	146,473	71,600	0	4,720	33	122	.....	12,000
September.....	185	7,641	7,390	0	255	1.7	6.4	.....	15,300
Water Year 1940	49,664.70	1,454,784	154,000	0	3,990	329	1,210	.....	10,800

06607500 LITTLE SIOUX RIVER AT TURIN, ICWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
October.....	2,191	10,712	1,040	0	346	1,040	0	2.4	8.9	1,810	
November.....	3,669	5,093	880	0	170	880	0	1.2	4.3	514	
December.....	5,162	8,587	520	68	277	520	68	1.9	7.2	616	
Cal. Year 1940	59,821.30	1,476,452	154,000	0	4,050	154,000	0	334	1,230	9,140	
January.....1941	6,547	6,987	560	0	225	560	0	1.6	5.8	395	
February.....	31,428	31,428	10,300	36	1,080	10,300	36	7.1	26	1,800	
March.....	6,255	25,857	4,620	74	834	4,620	74	5.8	22	1,530	
April.....	6,128	79,557	13,700	77	2,650	13,700	77	18	66	4,810	
May.....	15,651	152,620	15,000	1,690	4,920	15,000	1,690	34	127	3,610	
June.....	18,673	376,330	74,500	1,290	12,500	74,500	1,290	85	314	7,460	
July.....	15,295	244,060	74,200	180	7,870	74,200	180	55	204	5,910	
August.....	3,789	26,330	14,000	26	849	14,000	26	5.9	22	2,570	
September.....	16,181	322,847	86,500	16	10,800	86,500	16	73	269	7,390	
Water Year 1941	106,006	1,290,408	86,500	0	3,530	86,500	0	292	1,080	4,510	
October.....	19,345	318,360	114,000	290	10,300	114,000	290	72	266	6,100	
November.....	29,890	330,760	50,500	2,550	11,000	50,500	2,550	75	276	4,100	
December.....	20,061	52,730	5,990	1,160	2,990	5,990	1,160	21	77	1,710	
Cal. Year 1941	164,280	2,007,866	114,000	0	5,490	114,000	0	454	1,680	4,530	
January.....1942	15,330	44,360	3,370	460	1,430	3,370	460	10	37	1,070	
February.....	20,870	72,480	3,390	1,460	2,590	3,390	1,460	16	60	1,290	
March.....	28,924	234,780	53,400	2,020	7,570	53,400	2,020	53	196	3,010	
April.....	38,628	244,940	22,700	2,990	8,160	22,700	2,990	55	204	2,350	
May.....	40,526	329,500	23,800	2,840	10,600	23,800	2,840	74	275	3,010	
June.....	54,118	2,131,590	403,000	3,670	71,100	403,000	3,670	482	1,780	14,600	
July.....	16,797	334,640	113,000	1,560	10,800	113,000	1,560	76	279	7,380	
August.....	7,783	71,420	21,100	60	2,300	21,100	60	16	60	3,400	
September.....	7,470	100,480	19,700	440	3,350	19,700	440	23	84	4,980	
Water Year 1942	299,742	4,306,040	403,000	60	11,800	403,000	60	973	3,590	5,320	
October.....	1,826	3,012	380	0	97	380	0	.68	2.5	611	
November.....	255	219	28	1.0	7.3	28	1.0	.05	.18	318	
December.....	11.1	12	1.0	0	.39	1.0	0	0	.01	400	
Cal. Year 1942	232,538.10	3,567,433	403,000	0	9,770	403,000	0	806	2,980	5,680	
January.....1943	117.0	103	9.0	0	3.3	9.0	0	.02	.09	326	
February.....	16,325	236,424	52,900	29	8,550	52,900	29	54	200	5,430	
March.....	26,725	222,850	41,100	390	7,190	41,100	390	50	186	3,090	
April.....	25,605	216,440	23,100	640	7,210	23,100	640	49	181	3,130	

06607500 LITTLE SIOUX RIVER AT TURIN, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Maximum						
January	18,852	83,090	11,500	110	2,680	19	69	.....	.....	1,630
February	47,042	1,699,270	289,000	4,800	56,600	384	1,420	.....	.....	13,400
March	70,700	1,216,090	301,000	4,350	39,200	275	1,020	.....	.....	6,370
April	27,250	289,260	87,100	2,190	9,330	65	241	.....	.....	3,930
May	14,319	84,710	36,400	240	2,820	19	71	.....	.....	2,190
Water Year 1943	249,027.10	4,054,520	301,000	0	11,100	916	3,380	.....	.....	6,030
October	5,648	3,643	210	89	118	.82	3.0	.....	.....	239
November	7,523	9,412	1,100	80	314	2.1	7.9	.....	.....	463
December	8,281	13,734	860	53	443	3.1	11	.....	.....	614
Water Year 1943	268,387	4,078,066	301,000	0	11,200	921	3,400	.....	.....	5,630
January	3,470	5,620	1,910	24	181	1.3	4.7	.....	.....	600
February	10,717	130,130	73,800	70	4,650	29	109	.....	.....	4,500
March	19,919	340,310	140,000	670	11,000	77	284	.....	.....	6,330
April	25,515	109,950	8,440	1,350	3,670	25	92	.....	.....	1,600
May	49,368	699,550	272,000	3,320	22,600	158	584	.....	.....	5,250
June	66,054	1,805,030	505,000	2,400	60,200	408	1,510	.....	.....	10,100
July	47,630	657,570	87,800	1,510	21,200	149	549	.....	.....	5,120
August	30,952	479,050	83,900	1,380	15,500	108	400	.....	.....	5,730
September	21,276	96,290	11,500	610	3,210	22	80	.....	.....	1,680
Water Year 1944	296,353	4,350,729	505,000	24	11,900	983	3,630	.....	.....	5,440
October	12,630	15,660	1,080	340	505	3.5	13	.....	.....	459
November	10,014	11,405	740	95	380	2.6	9.5	.....	.....	422
December	7,475	4,669	240	68	151	1.1	3.9	.....	.....	231
Water Year 1944	305,020	4,355,674	505,000	24	11,900	984	3,640	.....	.....	5,290
January	4,825	3,108	160	45	100	.70	2.6	.....	.....	239
February	10,260	68,616	10,200	32	2,370	16	57	.....	.....	2,480
March	61,347	487,140	46,300	1,350	15,700	110	407	.....	.....	2,940
April	28,785	306,600	85,700	2,760	10,200	69	256	.....	.....	3,940
May	37,546	1,650,230	725,000	1,900	53,200	373	1,380	.....	.....	16,300
June	70,670	1,259,430	445,000	5,870	42,000	285	1,050	.....	.....	6,600
July	29,860	339,120	124,000	2,500	10,900	77	283	.....	.....	4,210
August	42,767	316,720	87,000	970	10,200	72	264	.....	.....	2,740
September	10,324	34,280	3,240	420	1,140	7.7	29	.....	.....	1,230
Water Year 1945	326,503	4,496,578	725,000	32	12,300	1,020	3,750	.....	.....	5,100
October	9,620	14,350	930	240	463	3.2	12	.....	.....	552
November	9,731	7,880	280	240	263	1.8	6.6	.....	.....	300

C66C7500 LITTLE SIOUX RIVER AT TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
December.....	9,567	8,760	540	170	283	2.0	7.3	.....	339
Cal. Year 1945	325,302	4,496,234	725,000	32	12,300	1,020	3,750	.....	5,120
January.....1946	7,880	32,870	8,330	170	1,060	7.4	27	.....	1,540
February.....	23,333	158,160	65,400	590	5,650	36	132	.....	2,510
March.....	29,941	358,370	57,300	1,480	11,600	81	299	.....	4,430
April.....	12,993	47,680	12,600	400	1,590	11	40	.....	1,360
May.....	17,335	382,980	83,000	460	12,400	87	320	.....	8,180
June.....	13,909	129,980	19,400	270	4,330	29	108	.....	3,460
July.....	6,277	27,450	3,860	120	885	6.2	23	.....	1,620
August.....	2,418	27,920	14,700	40	901	6.3	23	.....	4,280
September.....	2,816	35,500	14,600	40	1,180	8.0	30	.....	4,670
Water Year 1946	145,820	1,231,900	83,000	40	3,380	278	1,030	.....	3,130
October.....	5,182	21,060	3,280	50	679	4.8	18	.....	1,510
November.....	8,000	26,310	2,120	180	877	5.9	22	.....	1,220
December.....	2,539	3,565	460	4.0	115	.81	3.0	.....	520
Cal. Year 1946	132,623	1,251,845	83,000	4.0	3,430	283	1,040	.....	3,500
January.....1947	630	422	32	5.0	14	.10	.35	.....	248
February.....	3,401	7,275	1,460	8.0	259	1.6	6.1	.....	792
March.....	9,594	60,089	6,500	49	1,940	14	50	.....	2,320
April.....	18,711	174,630	24,100	730	5,820	39	146	.....	3,460
May.....	24,808	223,040	59,200	970	7,190	50	186	.....	3,330
June.....	30,151	626,180	145,000	1,750	20,700	140	518	.....	7,620
July.....	20,748	102,770	15,700	120	3,320	23	86	.....	1,830
August.....	768.6	676	92	0	22	.15	.56	.....	326
September.....	40.1	62	38	0	2.1	.01	.05	.....	573
Water Year 1947	124,572.70	1,240,079	145,000	0	3,400	280	1,040	.....	3,690
October.....	16.0	0	0	0	0	0	0	.....	0
November.....	550.8	359	27	0	12	.08	.30	.....	241
December.....	101.3	63	12	0	2.0	.01	.05	.....	230
Cal. Year 1947	109,519.80	1,189,566	145,000	0	3,260	269	993	.....	4,020
January.....1948	96.0	21	4.0	0	.68	0	.02	.....	81
February.....	11,901	121,861	51,000	0	4,350	28	102	.....	3,790
March.....	26,695	424,600	146,000	19	13,700	96	354	.....	5,890
April.....	1,595.7	4,710	840	4.0	157	1.1	3.9	.....	1,090
May.....	1,445	4,160	970	0	134	.94	3.5	.....	1,070
June.....	605.5	5,333	2,330	0	178	1.2	4.5	.....	3,260

C66C7500 LITTLE SIOUX RIVER AT TURIN, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tcns)				Tons per sq mi	Acre-feet	Concentration(mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum daily	Weighted mean
October....1948	2.0	0	0	0	0	0	0	.....	0
November.....	8.7	0	0	0	0	0	0	.....	0
December.....	4.1	0	0	0	0	0	0	.....	0
January....1949	18.8	0	0	0	0	0	0	.....	0
February.....	1,880.5	3,130	870	107	107	.71	2.6	.....	616
March.....	16,956.0	359,007	114,000	54	12,900	90	333	.....	8,720
April.....	1,926.0	11,826	4,440	0	394	2.7	9.9	.....	2,270
May.....	251.1	2,754	1,980	0	89	.62	2.3	.....	4,060
June.....	1,062.8	61,098	60,300	0	2,040	14	51	.....	21,300
July.....	168.1	941	490	0	30	.21	.79	.....	2,070
August.....	431.2	8,902	3,830	0	287	2.0	7.4	.....	7,650
September.....	157.1	1,078	880	0	36	.24	.90	.....	2,540
Water Year 1949	22,866.40	488,736	114,000	0	1,340	110	405	.....	7,920
October.....	25.2	161	160	0	5.2	.04	.13	.....	2,370
November.....	3.9	0	0	0	0	0	0	.....	0
December.....	6.0	0	0	0	0	0	0	.....	0
Cal. Year 1949	22,886.70	488,897	114,000	0	1,340	110	408	.....	7,910
January....1950	2.3	0	0	0	0	0	0	.....	0
February.....	158.4	187	59	0	6.0	.04	.16	.....	437
March.....	2,230.3	41,342	13,200	0	1,330	9.3	35	.....	6,870
April.....	10.4	0	0	0	0	0	0	.....	0
May.....	52.6	2,970	2,970	0	96	.67	2.5	.....	20,900
June.....	8,593.2	346,365	170,000	0	11,500	78	289	.....	14,900
July.....	133.5	6,341	4,010	0	205	1.4	5.3	.....	17,600
August.....	637.7	5,687	5,410	0	183	1.3	4.7	.....	3,300
September.....	0	0	0	0	0	0	0	.....	0
Water Year 1950	11,853.50	403,053	170,000	0	1,100	91	336	.....	12,600
October.....	352.7	4,029	3,650	0	130	.91	3.4	.....	4,230
November.....	11.5	0	0	0	0	0	0	.....	0
December.....	0	0	0	0	0	0	0	.....	0
Cal. Year 1950	12,182.60	406,921	170,000	0	1,110	92	340	.....	12,400
January....1951	0	0	0	0	0	0	0	.....	0
February.....	2,760	13,869	6,550	0	495	3.1	12	.....	1,860
March.....	15,158.0	285,101	92,600	0	9,200	64	238	.....	6,970
April.....	26,612.4	165,386	17,800	14	5,510	37	138	.....	2,300
May.....	11,675.6	153,526	43,800	1.0	4,950	35	128	.....	4,870

06607500 LITTLE SIOUX RIVER AT TURIN, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-foot	Maximum daily	Weighted mean	Maximum daily	Weighted mean
			Maximum	Minimum							Mean
June.....	5,544	238,637	47,800	46	7,950	54	199	.....	15,900
July.....	3,821.4	214,357	177,000	0	6,920	48	179	.....	20,800
August.....	10,730.4	302,690	83,100	0	9,760	68	253	.....	10,400
September.....	5,628.2	183,038	107,000	0	6,100	41	153	.....	12,000
Water Year 1951	82,294.20	1,560,673	177,000	0	4,280	353	1,300	.....	7,020
April.....	7,108	8,670	670	80	289	2.5	7.2	.....	452
May.....	51,752	2,961,530	1,950,000	110	95,500	840	2,470	.....	21,200
June.....	80,184	3,292,380	2,120,000	1,460	110,000	934	2,750	.....	15,200
July.....	23,629	124,860	42,300	200	4,030	35	104	.....	1,960
August.....	14,338	29,837	8,030	60	962	8.5	25	.....	1,771
September.....	4,986	2,671	850	20	89	.76	2.2	.....	198
October.....	5,999	3,961	949	16	128	1.1	3.3	.....	245
November.....	6,201	1,760	89	19	59	.50	1.5	.....	105
December.....	9,215	6,336	1,420	34	204	1.8	5.3	.....	255
January.....	12,590	8,900	.....	.....	287	2.5	7.4	.....	262
February.....	4,780	1,100	.....	.....	39	.31	.92	.....	85
March.....	52,890	2,580,038	1,440,000	12	83,200	732	2,150	.....	18,100
April.....	120,260	2,316,710	430,000	6,820	77,200	657	1,930	.....	7,130
May.....	99,780	741,770	95,000	2,950	23,900	210	619	.....	2,750
June.....	67,840	426,340	88,000	4,180	14,200	121	356	.....	2,330
July.....	31,624	154,930	11,600	1,120	5,000	44	129	.....	1,810
August.....	23,931	171,262	74,300	511	5,520	49	143	.....	2,650
September.....	22,735	53,206	9,460	459	1,770	15	44	.....	867
Water Year 1960	457,845	6,466,313	1,440,000	.....	17,700	1,830	5,400	.....	5,230
October.....	17,449	16,613	2,020	145	536	4.7	14	.....	353
November.....	11,220	16,816	745	294	561	4.8	14	.....	555
December.....	8,791	12,000	.....	.....	387	3.4	10	.....	506
Cal. Year 1960	473,890	6,499,685	1,440,000	.....	17,800	1,840	5,430	.....	5,080
January.....	5,015	4,600	.....	.....	148	1.3	3.8	.....	340
February.....	8,500	15,000	.....	.....	517	4.3	13	.....	654
March.....	141,910	1,083,530	167,000	5,590	35,000	307	904	.....	2,830
April.....	79,510	436,360	89,600	2,610	14,500	124	364	.....	2,030
May.....	37,584	139,270	12,300	1,310	4,490	39	116	.....	1,370
June.....	46,142	334,190	89,300	1,720	11,100	95	279	.....	2,680
July.....	19,669	35,250	5,830	338	1,140	10.0	29	.....	664
August.....	29,695	286,647	196,000	223	9,250	81	239	.....	3,580
September.....	11,046	8,664	613	168	289	2.5	7.2	.....	291

066C7500 LITTLE SIOUX RIVER AT TURPIN, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment				Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
March.....	5,286	2,296	125	39	74	.65	1.9	.....	161
April.....	10,890	8,192	627	99	273	2.3	6.8	.....	279
May.....	43,528	643,362	317,000	327	20,800	182	537	.....	5,470
June.....	13,249	21,606	3,660	257	720	6.1	18	.....	604
July.....	9,435	10,831	1,410	80	349	3.1	9.0	.....	425
August.....	11,913	17,947	2,060	100	579	5.1	15	.....	558
September.....	38,849	361,962	36,000	114	12,100	103	302	.....	3,450
Water Year 1964	155,261	1,074,676	317,000	.....	2,940	305	897	.....	2,560
October.....	18,612	20,189	2,400	171	651	5.7	17	.....	402
November.....	8,671	3,129	158	34	104	.89	2.6	.....	134
December.....	5,995	1,584	98	7.0	51	.45	1.3	.....	98
Cal. Year 1964	174,343	1,093,558	317,000	.....	3,000	310	913	.....	2,320
January.....1965	4,750	210	8.0	4.0	6.8	.06	.18	.....	16
February.....	8,190	4,100	.....	.....	141	1.2	3.4	.....	185
March.....	64,390	700,000	.....	.....	22,600	199	584	.....	4,030
April.....	323,740	3,458,800	412,000	10,400	117,000	992	2,920	.....	4,000
May.....	66,030	707,360	111,000	3,530	22,800	201	590	.....	3,970
June.....	53,082	305,395	50,300	786	10,200	87	255	.....	2,130
July.....	15,097	30,684	7,540	164	990	8.7	26	.....	753
August.....	6,304	2,256	199	28	73	.64	1.9	.....	133
September.....	18,179	58,807	19,600	45	1,960	17	49	.....	1,200
Water Year 1965	593,040	5,332,514	412,000	.....	14,600	1,510	4,450	.....	3,330
October.....	36,764	65,763	5,740	569	2,120	19	55	.....	663
November.....	19,307	17,699	1,470	20	590	5.0	15	.....	340
December.....	17,300	5,757	393	55	186	1.6	4.8	.....	123
Cal. Year 1965	633,133	5,396,831	412,000	.....	14,700	1,530	4,500	.....	3,160
January.....1966	10,440	1,111	125	6.0	36	.32	.93	.....	39
February.....	40,680	149,371	49,500	6.0	5,330	42	125	.....	1,360
March.....	24,663	41,756	8,100	193	1,350	12	35	.....	627
April.....	42,000	168,908	15,400	708	3,630	31	91	.....	960
May.....	30,518	71,126	13,200	219	2,290	20	59	.....	863
June.....	27,515	207,184	102,000	304	6,910	59	173	.....	2,790
July.....	9,294	9,890	1,320	101	319	2.8	8.3	.....	394
August.....	9,186	36,539	22,600	47	1,180	10	30	.....	1,470
September.....	4,739	755	73	13	25	.21	.63	.....	59
Water Year 1966	272,406	715,859	102,000	6.0	1,960	203	598	.....	973

066C7500 LITTLE SIOUX RIVER AT TURIN, ICWP--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
October.....	4,533	775	33	19	25	.22	.65	.....	63
November.....	4,395	946	59	14	32	.27	.79	.....	80
December.....	2,625	261	18	3.0	8.4	.07	.22	.....	37
Cal. Year 1966	210,588	628,622	102,000	3.0	1,720	178	525	.....	1,110
January.....1967	2,156	38	3.0	1.0	1.2	.01	.03	.....	7
February.....	3,103	109	7.0	1.0	3.0	.03	.09	.....	13
March.....	20,367	23,857	1,600	3.0	770	6.8	2.0	.....	434
April.....	13,037	8,337	487	128	278	2.4	7.0	.....	237
May.....	9,236	7,711	728	57	249	2.2	6.4	.....	309
June.....	149,725	8,288,502	1,750,000	66	276,000	2,350	6,920	.....	20,500
July.....	28,926	134,455	22,200	199	4,340	38	112	.....	1,720
August.....	8,658	3,844	663	24	124	1.1	3.2	.....	164
September.....	4,485	438	24	8.0	15	.12	.37	.....	36
Water Year 1967	251,246	8,469,273	1,750,000	1.0	23,200	2,400	7,070	.....	12,500
October.....	3,875	275	14	7.0	8.9	.08	.23	.....	26
November.....	3,960	320	14	6.0	11	.09	.27	.....	30
December.....	3,063	353	23	2.0	11	.10	.29	.....	43
Cal. Year 1967	250,591	8,468,239	1,750,000	1.0	23,200	2,400	7,070	.....	12,500
January.....1968	1,432	66	4.0	1.0	2.1	.02	.66	.....	17
February.....	2,356	64	6.0	1.0	2.0	.02	.05	.....	10
March.....	5,712	1,044	80	3.0	34	.30	.87	.....	68
April.....	4,704	1,463	131	24	49	.41	1.2	.....	115
May.....	3,673	1,086	222	10	35	.31	.91	.....	110
June.....	9,460	84,281	22,600	5.0	2,810	24	70	.....	3,300
July.....	5,612	12,036	4,050	19	388	3.4	10	.....	794
August.....	6,042	28,934	21,800	5.0	933	8.2	24	.....	1,770
September.....	11,151	45,015	14,200	8.0	1,500	13	38	.....	1,500
Water Year 1968	61,040	174,937	22,600	1.0	479	50	146	.....	1,060
October.....	44,190	214,114	36,600	181	6,910	61	179	.....	1,790
November.....	24,734	22,310	3,410	210	744	6.3	19	.....	334
December.....	12,483	1,653	184	19	53	.47	1.4	.....	49
Cal. Year 1968	131,549	412,066	36,600	1.0	1,130	117	344	.....	1,160
January.....1969	8,330	516	23	12	17	.15	.43	.....	23
February.....	7,840	817	95	13	28	.23	.68	.....	39
March.....	63,870	459,180	59,500	53	14,800	130	383	.....	2,660
April.....	288,310	2,541,900	270,000	7,760	84,700	721	2,120	.....	3,270

C6607500 LITTLE SIOUX RIVER AT TURIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Lead (tcns)	Daily loads (tcns)			Tons per sq mi	Acre-feet	Concentration (mg/L)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
May.....	70,020	126,764	8,320	837	4,090	36	106	.....	671
June.....	80,876	488,604	174,000	588	15,300	139	408	.....	2,240

SOLDIER RIVER BASIN
0660P500 SOLDIER RIVER AT PISGAH, ICWA

LOCATION.--Lat 41°49'52", Long 95°55'50", in NW 1/4 NE 1/4 sec.14, T.81 N., R.44 W., Harrison County, at gaging station, on bridge on county highway F20, at west edge of Pisgah, 0.4 mi (0.6 km) downstream from Cobb Creek, 0.5 mi (0.8 km) upstream from Mogger Ditch, and 13.1 mi (21.1 km) upstream from mouth.

DRAINAGE AREA.--407 mi² (1,054 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--11 years (1940-51), 4,189,000 tons (3,300,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 236,000 mg/l Apr. 29, 1951; minimum daily, not determined.

Sediment discharge: Maximum daily, 3,240,000 tons (2,940,000 tonnes) June 4, 1940; minimum daily, 0 ton (0.00 tonne) on several days in 1940, 1942-44.

REMARKS.--No important diversions or storage above station. Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXPENSES

Water year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		*Max.	Min.	Date	*Max.	Min.	Date	Date	
1940a	A	233,000	*	June 23	3,240,000	0	June 4	several days	
1941	A	215,000	*	June 26	260,000	1	June 2	several days	
1942	A	183,000	*	Apr. 16	1,130,000	0	June 2	Jan. 8, 10	
1943	A	231,000	*	June 1	1,920,000	0	June 13	several days	
1944	A	168,000	*	June 4	846,000	0	June 12	several days	
1945	A	135,000	*	May 27	1,600,000	1	May 21	several days	
1946	A	180,000	*	May 18	610,000	5	May 24	several days	
1947	A	132,000	*	Apr. 10	397,000	8	June 12	Sept. 8-10	
1948	A	94,400	*	June 22	797,000	3	Feb. 27	several days	
1949	A	81,700	*	July 20	221,000	2	Mar. 4	several days	
1950	A	194,000	*	May 8	1,329,000	1	June 12	several days	
1951	A	236,000	*	Apr. 29	911,000	1	Mar. 28	several days	

A Published by Corps of Engineers
a March 5 to September 30
* Maximum measured concentration
* Not determined

06608500 SOLDIER RIVER AT PISGAH, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
April.....1940	914	48,342	43,700	10	1,610	119	40				
May.....	613	76,107	46,900	2.0	2,460	187	64				
June.....	16,492	3,750,276	3,240,000	0	125,000	9,210	3,130				
July.....	13,095	1,843,671	718,000	2.0	59,500	4,530	1,340				
August.....	12,123	1,827,953	510,000	15	59,000	4,490	1,530				
September.....	606	1,724	1,510	1.0	57	4.2	1.4				
October.....	398	1,757	660	1.0	57	4.3	1.5				
November.....	753	1,285	680	1.0	43	3.2	1.1				
December.....	898	169	14	1.0	5.5	.42	.14				
January.....1941	960	237	19	1.0	7.6	.58	.20				
February.....	2,625	60,067	37,800	7.0	2,150	148	50				
March.....	2,898	97,559	42,000	9.0	3,150	240	81				
April.....	996	18,411	10,100	6.0	614	45	15				
May.....	654	2,309	1,130	7.0	74	5.7	1.9				
June.....	5,072	972,076	260,000	4.0	32,400	2,390	811				
July.....	876	53,432	38,100	2.0	1,720	131	45				
August.....	943	86,631	85,600	2.0	2,790	213	72				
September.....	1,928	323,874	248,000	1.0	10,800	796	270				
Water Year 1941	19,001	1,617,807	260,000	1.0	4,430	3,970	1,350				
October.....	2,727	214,088	84,200	3.0	6,910	526	179				
November.....	1,378	10,141	5,700	24	338	25	8.5				
December.....	753	1,016	280	4.0	33	2.5	.85				
Cal. Year 1941	21,810	1,839,841	260,000	1.0	5,040	4,520	1,540				
January.....1942	1,117	1,165	210	0	38	2.9	.97				
February.....	1,029	890	88	9.0	31	2.2	.74				
March.....	2,274	56,510	23,000	22	1,820	139	47				
April.....	1,897	260,380	253,000	20	8,680	640	217				
May.....	3,456	458,986	318,000	65	14,800	1,130	383				
June.....	21,794	2,761,370	1,130,000	220	92,000	6,780	2,300				
July.....	6,077	1,075,384	560,000	63	34,700	2,640	898				
August.....	2,846	422,275	254,000	4.0	13,600	1,040	352				
September.....	2,675	313,697	124,000	3.0	10,500	771	262				
Water Year 1942	48,023	5,575,902	1,130,000	0	15,300	13,700	4,650				
October.....	687	331	100	2.0	11	.81	.28				
November.....	593	159	57	0	5.3	.39	.13				
December.....	393	113	12	0	3.6	.28	.09				

06608500 SOLDIER RIVER AT PISGAH, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
Cal. Year 1942	44,838	5,351,260	1,130,000	0	14,700	13,100	4,470			44,200	
January...1943	402	174	40	1.0	5.6	.43				160	
February.....	6,841	301,008	227,000	1.0	10,800	740	251			16,300	
March.....	2,333	74,255	44,700	4.0	2,400	182	62			11,800	
April.....	620	10,652	2,140	2.0	355	26	8.9			6,360	
May.....	1,226	158,479	130,000	1.0	5,110	389	132			47,900	
June.....	5,669	2,010,680	1,020,000	2.0	67,000	4,940	1,680			131,000	
July.....	5,237	1,013,846	437,000	1.0	32,700	2,490	846			71,700	
August.....	3,795	406,076	336,000	1.0	13,100	998	339			39,600	
September.....	906	29,403	21,800	1.0	980	72	25			12,000	
Water Year 1943	28,702	4,005,176	1,020,000	0	11,000	9,840	3,340			51,700	
October.....	348	126	91	1.0	4.1	.31	.11			134	
November.....	574	219	26	1.0	7.3	.54	.18			141	
December.....	338	73	9.0	0	2.4	.18	.06			80	
Cal. Year 1943	28,289	4,004,991	1,020,000	0	11,000	9,840	3,340			52,400	
January.....1944	781	1,652	1,280	1.0	53	4.1	1.4			783	
February.....	1,647	30,825	21,400	1.0	1,060	76	26			6,930	
March.....	2,995	108,762	55,600	4.0	3,510	267	91			13,400	
April.....	1,663	122,331	110,000	32	4,080	301	102			27,200	
May.....	6,130	821,560	382,000	110	26,500	2,020	686			49,600	
June.....	17,167	2,282,550	846,000	120	76,100	5,610	1,910			49,200	
July.....	3,791	321,220	149,000	110	10,400	789	268			31,400	
August.....	5,038	888,995	746,000	10	28,700	2,180	742			65,400	
September.....	1,018	2,801	660	4.0	93	6.9	2.3			1,020	
Water Year 1944	41,490	4,581,114	846,000	0	12,500	11,300	3,820			40,900	
October.....	864	289	21	4.0	9.3	.71	.24			124	
November.....	935	3,527	1,250	4.0	118	8.7	2.9			1,400	
December.....	563	194	21	2.0	6.3	.48	.16			128	
Cal. Year 1944	42,592	4,584,706	846,000	1.0	12,500	11,300	3,830			39,900	
January...1945	194	81	6.0	1.0	2.6	.20	.07			155	
February.....	5,374	120,600	56,000	1.0	4,310	296	101			8,310	
March.....	20,690	757,960	264,000	190	24,500	1,860	633			13,600	
April.....	6,801	313,120	206,000	120	10,400	769	261			17,100	
May.....	15,583	3,090,570	1,600,000	290	99,700	7,590	2,580			73,500	
June.....	7,840	538,710	188,000	290	18,000	1,320	450			25,400	

06608500 SOLDIER RIVER AT PISGAH, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)		
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
July.....	5,954	426,670	242,000	210	13,800	1,050	356	.....	.....	26,500
August.....	2,768	77,506	48,100	22	2,500	190	65	.....	.....	10,400
September.....	2,580	67,879	21,900	16	2,260	167	57	.....	.....	9,740
Water Year 1945	70,146	5,397,106	1,600,000	1.0	14,800	13,300	4,500	.....	.....	28,500
October.....	1,258	1,578	210	5.0	51	3.9	1.3	.....	.....	465
November.....	1,184	733	65	5.0	24	1.8	.61	.....	.....	229
December.....	1,224	1,343	390	5.0	43	3.3	1.1	.....	.....	406
Cal. Year 1945	71,450	5,396,750	1,600,000	1.0	14,800	13,300	4,500	.....	.....	28,000
January.....1946	5,079	61,558	51,800	26	1,990	151	51	.....	.....	4,490
February.....	9,524	111,250	94,600	140	3,970	273	93	.....	.....	4,330
March.....	3,900	123,080	49,800	160	3,970	302	103	.....	.....	11,700
April.....	993	2,669	130	59	89	6.6	2.2	.....	.....	995
May.....	5,407	1,134,242	610,000	31	36,600	2,790	947	.....	.....	77,700
June.....	7,148	1,315,109	579,000	57	43,800	3,230	1,100	.....	.....	68,100
July.....	3,376	249,328	188,000	20	8,040	613	208	.....	.....	27,400
August.....	4,771	304,111	137,000	15	9,810	747	254	.....	.....	23,600
September.....	8,475	808,268	510,000	16	26,900	1,990	675	.....	.....	35,300
Water Year 1946	52,339	4,113,269	610,000	5.0	11,300	10,100	3,430	.....	.....	29,100
October.....	3,771	57,516	26,200	65	1,860	141	48	.....	.....	5,650
November.....	2,856	7,584	960	55	253	19	6.3	.....	.....	984
December.....	1,935	3,574	790	19	115	8.8	3.0	.....	.....	684
Cal. Year 1946	57,235	4,178,289	610,000	15	11,400	10,300	3,490	.....	.....	27,000
January.....1947	1,299	857	65	11	28	2.1	.72	.....	.....	244
February.....	1,723	4,523	1,940	14	161	11	3.8	.....	.....	972
March.....	3,837	69,654	16,900	28	2,250	171	58	.....	.....	6,720
April.....	4,013	230,450	175,000	240	7,680	566	192	.....	.....	21,300
May.....	2,841	28,250	4,110	190	911	69	24	.....	.....	3,680
June.....	10,312	1,225,550	397,000	380	40,900	3,010	1,020	.....	.....	44,000
July.....	4,019	78,107	46,800	87	2,520	192	65	.....	.....	7,200
August.....	1,697	2,285	250	20	74	5.6	1.9	.....	.....	499
September.....	1,109	4,167	2,990	8.0	139	10	3.5	.....	.....	1,390
Water Year 1947	39,412	1,712,517	397,000	8.0	4,690	4,210	1,430	.....	.....	16,100
October.....	1,226	915	110	11	30	2.2	.76	.....	.....	276
November.....	1,621	1,328	120	20	44	3.3	1.1	.....	.....	303
December.....	1,424	904	140	7.0	29	2.2	.75	.....	.....	235

06608500 SOLDIER RIVER AT PISGAH, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Maximum		Mean	Tons per sq mi	Acre-feet	Maximum daily		Weighted mean
			Minimum	Daily loads (tons)						
Cal. Year 1947	35,121	1,646,990	397,000	7.0	4,510	4,050	1,370	17,400		
January....1948	1,496	2,454	1,080	3.0	79	6.0	2.0	608		
February.....	8,397	918,810	797,000	6.0	31,700	2,260	767	40,500		
March.....	12,571	922,021	287,000	21	29,700	2,270	770	27,200		
April.....	2,082	21,975	5,400	48	733	54	18	3,910		
May.....	1,361	2,792	820	13	90	6.9	2.3	760		
June.....	1,674	113,872	93,700	11	3,800	280	95	25,200		
July.....	4,869	690,239	530,000	11	22,300	1,700	576	52,500		
August.....	2,912	289,358	236,000	6.0	9,330	711	242	36,800		
September.....	493	520	62	5.0	17	1.3	.43	391		
Water Year 1948	40,126	2,965,188	797,000	3.0	18,100	7,290	2,480	27,400		
October.....	730	3,270	2,440	8.0	105	8.0	2.7	1,660		
November.....	1,163	7,985	2,490	11	266	20	6.7	2,540		
December.....	603	163	19	2.0	5.3	.40	.14	100		
Cal. Year 1948	38,351	2,973,459	797,000	2.0	8,120	7,310	2,480	28,700		
January....1949	2,430	10,592	3,240	2.0	342	26	8.8	1,610		
February.....	2,633	31,105	8,750	11	1,110	76	26	4,380		
March.....	17,805	606,460	221,000	120	19,600	1,490	506	12,600		
April.....	2,942	12,012	1,130	82	400	30	10	1,510		
May.....	3,498	98,395	68,700	63	3,170	242	82	10,400		
June.....	3,801	281,652	196,000	16	9,390	692	235	27,400		
July.....	4,261	413,440	145,000	18	13,300	1,020	345	35,900		
August.....	2,790	213,427	115,000	8.0	6,880	524	178	28,300		
September.....	1,546	71,440	36,400	3.0	2,380	176	60	17,100		
Water Year 1949	44,202	1,749,941	221,000	2.0	4,790	4,300	1,460	14,700		
October.....	1,628	70,353	51,300	8.0	2,270	173	59	16,000		
November.....	554	434	34	2.0	14	1.1	.36	290		
December.....	628	1,553	420	8.0	50	3.8	1.3	916		
Cal. Year 1949	44,516	1,810,863	221,000	2.0	4,960	4,450	1,510	15,100		
January....1950	237	226	44	1.0	7.3	.56	.19	353		
February.....	9,471	389,604	348,000	3.0	13,900	957	325	15,200		
March.....	13,171	262,080	102,000	290	8,450	644	219	7,370		
April.....	1,353	5,573	1,260	18	186	14	4.7	1,530		
May.....	4,817	613,694	218,000	97	19,800	1,510	512	47,200		
June.....	17,876	2,793,736	1,330,000	11	93,100	6,860	2,330	57,900		

06608500 SOLDIER RIVER AT PISGAH, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
July.....	4,858	290,204	115,000	23	9,360	713	242	.....	22,100
August.....	5,705	357,073	201,000	18	11,500	877	298	.....	23,200
September.....	1,145	25,510	23,700	4.0	850	63	21	.....	8,250
Water Year 1950	61,443	4,810,040	1,330,000	1.0	13,200	11,800	4,010	.....	29,000
October.....	1,723	87,147	82,400	3.0	2,810	214	73	.....	18,700
November.....	655	418	31	1.0	14	1.0	.35	.....	236
December.....	506	138	5.0	4.0	4.5	.34	.12	.....	101
Cal. Year 1950	61,517	4,825,403	1,330,000	1.0	13,200	11,900	4,030	.....	29,100
January.... 1951	431	103	4.0	1.0	3.3	.25	.09	.....	89
February.....	8,040	714,531	158,000	1.0	25,500	1,760	596	.....	32,900
March.....	25,239	2,160,301	911,000	20	69,700	5,310	1,800	.....	31,700
April.....	9,863	994,110	384,000	260	33,100	2,440	830	.....	37,300
May.....	10,282	1,228,031	870,000	81	39,600	3,020	1,030	.....	44,200
June.....	20,998	1,834,320	474,000	130	61,100	4,510	1,530	.....	32,400
July.....	10,778	931,522	787,000	82	30,000	2,290	778	.....	32,000
August.....	17,424	1,238,590	560,000	280	40,000	3,040	1,030	.....	26,300
September.....	10,974	357,937	160,000	53	11,900	879	299	.....	12,100
Water Year 1951	116,913	9,547,148	911,000	1.0	26,200	23,500	7,970	.....	30,200

ALLEN CREEK BASIN
06609200 STEER CREEK NEAR MAGNOLIA, IOWA

LOCATION.--Lat 41°45'08", long 95°56'15", in NW 1/4 SE 1/4 sec.11, T.80 N., R.44 W., Harrison County, at gaging station at bridge on county highway, 5.2 mi (8.4 km) northwest of Magnolia and 5.5 mi (8.8 km) upstream from Allen Creek Ditch.

DRAINAGE AREA.--9.26 mi² (24.0 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--6 years (1963-69), 14,480 tons (13,140 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 55,100 mg/l May 22, 1965; minimum daily, no flow for many days in July, August, September, 1968.
Sediment discharge: Maximum daily, 28,000 tons (25,400 tonnes) May 22, 1965; minimum daily, 0 ton (0.0 tonne) on many days July, August, September, 1968.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date
1964	1963	27,500	Apr. 2	6	Oct. 30
1965	1963	54,600	May 22	13	Oct. 4
1966	1993	8,180	Mar. 22	11	July 24
1967	2013	19,600	June 27	6	Dec. 15
1968	2095	2,460	July 30	0	many days
1969	2145	14,700	July 16	8	Dec. 25
				4,900	Aug. 20
				<.05	many days
				28,000	May 22
				<.05	many days
				340	May 22
				<.05	many days
				9,000	June 13
				<.05	many days
				57	July 30
				0	many days
				467	July 9
				.01	Oct. 1, 4, Dec. 25

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					
			Daily loads (tons)		Tons per sq mi	Acree feet		
			Maximum	Minimum			Mean	
October.....1963	18.6	2	.40	t	.06	0	110	40
November.....	16.1	1.4	.10	t	.05	0	57	32
December.....	26.1	5.4	.30	t	.17	0	140	77
January.....1964	21.8	2.9	.10	t	.09	0	66	49

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
February.....	28.7	3.6	.20	.10	.12	.39	0	65	47	
March.....	13.6	2.4	.20	t	.08	.26	0	220	65	
April.....	64.8	4,646.3	4,500	t	155	502	3.9	27,500	26,600	
May.....	73.3	187.2	120	.20	6.0	20	.16	2,200	6,946	
June.....	80.7	1,351.8	780	.10	45	146	1.1	10,400	6,200	
July.....	39.4	502.2	490	t	16	54	.42	3,300	4,720	
August.....	53.7	4,916.2	4,900	t	159	531	4.1	11,100	33,900	
September.....	22	23.2	13	t	.77	2.5	.02	480	391	
Water Year 1964	458.80	11,644.60	4,900	t	32	1,260	9.7	27,500	9,400	
October.....	14.7	2	.10	t	.06	.22	0	74	50	
November.....	14.9	2	.30	t	.07	.22	0	110	50	
December.....	18.3	3.4	.30	t	.11	.37	0	280	69	
Cal. Year 1964	445.90	11,643.20	4,900	t	32	1,260	9.7	27,500	9,670	
January.....1965	18.1	5.3	1.2	t	.17	.57	0	260	108	
February.....	124.9	363	140	.10	12	39	.30	4,400	1,080	
March.....	222.4	2,751.9	1,400	.40	89	297	2.3	13,100	4,580	
April.....	98.7	916	370	.60	31	99	.76	9,290	3,440	
May.....	224	31,124.1	28,000	.10	1,000	3,360	26	54,600	51,500	
June.....	81.1	1,078.5	1,000	.40	36	116	.90	19,200	4,930	
July.....	69	767.8	500	.10	25	83	.64	2,700	4,120	
August.....	27.5	106.6	50	t	3.4	12	.09	1,900	1,440	
September.....	163.6	1,474.7	460	.10	49	159	1.2	2,700	3,340	
Water Year 1965	1,077.20	38,595.30	28,000	t	106	4,170	32	54,600	13,300	
October.....	103.4	43.5	8.8	.20	1.4	4.7	.04	570	156	
November.....	68.3	9.2	.90	.10	.31	.99	.01	150	50	
December.....	65.9	38.9	20	.10	1.3	4.2	.03	780	219	
Cal. Year 1965	1,266.90	38,679.50	29,000	t	106	4,180	32	54,600	11,300	
January.....1966	41.2	9.7	.80	.10	.31	1.0	.01	240	87	
February.....	50.7	67.3	12	.20	2.4	7.3	.06	2,400	492	
March.....	77.8	449.8	85	.50	15	49	.38	8,180	2,140	
April.....	53.8	20.6	2.6	.10	.69	2.2	.02	400	142	
May.....	49.2	436.3	340	t	14	47	.36	3,300	3,280	
June.....	60.2	51.2	11	.10	1.7	5.5	.04	1,090	315	
July.....	35	57.9	31	t	1.9	6.3	.05	990	613	
August.....	15	26.1	8.5	t	.84	2.8	.02	650	644	
September.....	14.8	29.1	27	t	.97	3.1	.02	730	728	
Water Year 1966	635.30	1,239.60	340	t	3.4	134	1.0	8,180	723	

06609200 STEER CREEK NEAR MAGNOLIA, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum		Mean	Daily			Weighted mean	
			Minimum	Maximum						
October.....	10.7	2.2	.10	t	.07	.24	0	100	76	
November.....	13.4	2.3	.20	t	.08	.25	0	200	64	
December.....	53.8	5	.50	t	.16	.54	0	210	34	
1. Year 1966	475.60	1,157.50	340	t	3.2	125	.97	8,180	901	
January....1967	25.2	4	.40	t	.13	.43	0	150	59	
February.....	36.2	6.9	.70	t	.25	.75	.01	120	71	
March.....	38.1	14.9	5.0	t	.48	1.6	.01	700	145	
April.....	22.2	9.8	5.6	t	.33	1.1	.01	660	163	
May.....	12.9	4.9	2.8	t	.16	.53	0	390	141	
June.....	242.7	30,616.3	9,000	t	1,020	3,310	2.6	19,600	46,700	
July.....	41.6	1,242.6	1,020	t	40	134	1.0	7,610	11,100	
August.....	21.1	4.2	.90	t	.14	.45	0	230	74	
September.....	6.9	9.1	4.7	t	.30	.98	.01	770	488	
1. Year 1967	524.80	31,922.20	9,000	t	87	3,450	27	19,600	22,500	
October.....	8.24	21	14	t	.68	2.3	.02	750	944	
November.....	16.69	2.3	.10	t	.08	.25	0	65	51	
December.....	11.68	2.5	.20	t	.08	.27	0	100	79	
Cal. Year 1967	483.51	31,938.50	9,000	t	88	3,450	27	19,600	24,500	
January....1968	13.34	2.9	.40	t	.09	.31	0	130	81	
February.....	5.2	.5	.10	t	.02	.05	0	67	36	
March.....	15.02	3.9	.30	t	.13	.42	0	160	96	
April.....	17.25	28.6	26	t	.95	3.1	.02	2,300	614	
May.....	10.01	3	.60	t	.10	.32	0	300	111	
June.....	9.68	33.8	17	t	1.1	3.7	.03	1,260	1,290	
July.....	19.05	114.3	57	t	3.7	12	.10	2,460	2,220	
August.....	8.58	74.5	36	t	2.4	8.0	.06	1,430	3,220	
September.....	13.06	47.4	21	t	1.6	5.1	.04	2,190	1,340	
Cal. Year 1968	147.80	334.70	57	t	.91	36	.28	2,460	839	
October.....	34.01	77.66	57	t	2.5	8.4	.06	950	846	
November.....	23.5	4.79	.47	t	.16	.52	0	137	76	
December.....	33.01	4.07	.38	t	.13	.44	0	117	46	
Cal. Year 1968	201.71	395.42	57	t	1.1	43	.33	2,460	726	
January....1969	27.12	4.18	.65	t	.13	.45	0	150	57	
February.....	32.14	9.88	3.1	t	.35	1.1	.01	181	114	
March.....	136.3	984.21	416	t	32	106	.82	11,000	2,670	

06609200 STEER CREEK NEAR MAGNOLIA, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
April.....	88.9	111.01	21	.48	3.7	12	.09	2,120	462		
May.....	77.95	38.31	13	.12	1.2	4.1	.03	1,320	182		
June.....	54.3	353.03	196	.07	12	38	.29	12,700	2,410		
July.....	70.6	1,212.15	467	.19	39	131	1.0	14,700	6,360		
August.....	55.2	206.3	145	.09	6.7	22	.17	2,950	1,380		
September.....	25.22	163.64	159	.04	5.5	18	.14	4,820	2,400		
Water year 1969	658.25	3,169.23	467	.01	8.7	342	2.6	14,700	1,780		

06609200 STEER CREEK NEAR MAGNOLIA, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment										Methods of analysis	
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters									
Mar. 19, 1964	*.2	1.5	380	11300	46	20	43	49	55	91	96	100	100	VPWC
Apr. 2,	19	7.0	221000	94	18	20	24	33	63	98	100	100	100	VPWC
June 22,	*4.7	24.5	7400				45	64	86	97				VPWC
Mar. 31, 1965	61	18.0	32600	5370	21	25	56	38	70	98	99	100	100	VPWC
June 4,	23		36700	2280	33	42		74	96	100				SPWC
July 26, 1966	5.2	23.0	7990	110	20	21	28	40	73	99	100	100	100	SPWC
June 27, 1967	17	20.0	117000	5370	22	24	31	42	74	99	100	100	100	VPWC
Apr. 3, 1968	2.7	13.0	1160	8	38	51	63	84	93	100				SPWC
May 7,	1.8	13.0	680	3	46	60	70	88	97	100				SPWC
June 29, .....	.89	27.0	470	1	90	92	94	95	97	100				SPWC
July 31, .....	.89	19.0	1110	3	92	96	99	99	99	100				SPWC
Aug. 27,	1.1	17.0	930	3	77	81	86	87	94	100				SPWC
Sept. 16,	4.1	17.0	2940	33	53	61	84	90	99	100				SPWC
Apr. 17, 1969	5.0	9.0	1130	15	36	43	48	68	86	93	100	100	100	SPWC
June 28,	8.4	19.0	14000	318	41	53	65	82	98	99	100	100	100	SPWC
July 9,	6.9	21.0	3640	68	32	43	49	59	86	98	100	100	100	VPWC
July 25,	13	23.0	24500	877	21	27	35	47	78	99	100	100	100	VPWC
Sept. 5,	30	21.0	2470	200	35	40	42	54	82	95	99	100	100	VPWC

* Daily mean discharge

BOYER RIVER BASIN

06609280 BOYER RIVER AT DELOIT, ICWA

LOCATION.--Lat 42°05'40", long 95°18'42", near center of North line section 18 T.84 N., R.38 W., Crawford County on county road bridge .5 mi (80 km) southeast of Post Office at DeLoit, Iowa.

DRAINAGE AREA.--292 mi² (756 km²).

EXTREMES.--Period of record: April 1969 to September 1973. Sediment concentrations: Maximum measured, 24,000 mg/l June 13, 1972; minimum daily, not determined.
Sediment discharge: Maximum daily, 219,000 tons (199,000 tonnes) July 24, 1972; minimum daily, 0.0 ton (0.0 tonne) several days 1972.

REMARKS.--Records of suspended-sediment have been furnished by Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Daily suspended sediment		Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date	Max.	Date
1970	A	14,280	Aug. 4	*	Aug. 4	51,000	May 14
1971	A	21,630	June 10	*	June 10	106,000	Feb. 19
1972	A	24,000	June 13	*	June 13	219,000	July 24
1973	A	23,600	June 18	*	June 18	55,100	Mar. 1

A Records published by Corps of Engineers.

* Maximum measured concentration.

* Not determined.

MONTHLY AND YEARLY SUMMARIES

Mcnth	Water discharge (cfs-days)	Lead (tons)	Suspended sediment				Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
			Maximum	Minimum					Mean
April.....1969	405,935	129,000	108	13,500	1,760	339	.....
May.....	4,444	421	61	143	19	3.7	.....
June.....	183,556	64,900	57	6,120	798	153	.....
July.....	25,517	8,340	105	823	111	21	.....
August.....	2,047	294	18	66	8.9	1.7	.....
September.....	1,048	191	4.7	35	4.6	.87	.....

06609280 BOYER RIVER AT DELOIT, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tcns)		Mean	Maximum daily			Weighted mean	
				Minimum	Mean						
October.....	284	29	1.5	9.2	1.2	.24					
November.....	364	29	4.2	12	1.6	.30					
December.....	84	4.0	1.8	2.7	.37	.07					
January.....1970	40	1.8	.90	1.3	.17	.03					
February.....	397	83	.90	14	1.7	.33					
March.....	10,493	4,790	23	338	46	8.8					
April.....	4,744	605	40	158	21	4.0					
May.....	57,057	51,000	18	1,840	248	48					
June.....	498	45	2.7	17	2.2	.42					
July.....	279	46	2.0	9.0	1.2	.23					
August.....	6,268	5,790	.40	202	27	5.2					
September.....	86	26	.30	2.9	.37	.07					
Water Year 1970	80,594	51,000	.30	221	350	67					
October.....	1,063	586	.40	34	4.6	.89					
November.....	393	41	3.3	13	1.7	.33					
December.....	185	16	2.5	6.0	.80	.15					
Cal. Year 1970	81,503	51,000	.30	223	354	68					
January.....1971	43	2.6	.80	1.4	.19	.04					
February.....	199,217	106,000	1.0	7,110	866	166					
March.....	131,450	55,700	53	4,240	572	110					
April.....	1,937	298	10	65	8.4	1.6					
May.....	4,096	1,830	4.8	132	18	3.4					
June.....	83,823	43,300	7.1	2,790	364	70					
July.....	9,286	4,670	1.6	300	40	7.8					
August.....	43	5.7	.40	1.4	.19	.04					
September.....	22	1.8	.30	.73	.10	.02					
Water Year 1971	431,558	106,000	.30	1,180	1,880	360					
October.....	2,421	1,320	0.1	78	11	2.0					
November.....	286	117	1.1	9.5	1.2	.24					
December.....	332	19	3.7	11	1.4	.28					
Cal. Year 1971	432,956	106,000	.10	1,190	1,880	361					
January.....1972	28	3.0	0	.90	.12	.02					
February.....	38,762	22,500	0	1,060	129	25					
March.....	25,512	9,930	6.6	952	128	25					
April.....	734	232	1.1	24	3.2	.61					
May.....	31,586	9,870	90	1,030	139	27					
June.....	344,887	102,000	45	11,500	1,500	288					

C6609280 BOYER RIVER AT LEICHT, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Lead (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
July.....	524,719	219,000	62	16,900	2,280	438	.....	.....
August.....	6,213	1,510	32	200	27	5.2	.....	.....
September.....	35,600	24,500	28	1,190	155	30	.....	.....
Water Year 1972	1,015,480	219,000	0	2,760	4,380	840	.....	.....
October.....	6,164	2,140	25	199	27	5.1	.....	.....
November.....	11,192	2,330	53	373	49	9.3	.....	.....
December.....	20,747	13,400	23	669	90	17	.....	.....
Cal. Year 1972	1,050,544	219,000	0	2,850	4,530	869	.....	.....
January.....1973	22,469	8,320	38	725	98	19	.....	.....
February.....	13,563	6,780	38	481	61	12	.....	.....
March.....	212,194	55,100	333	6,860	925	178	.....	.....
April.....	36,953	5,060	139	1,230	161	31	.....	.....
May.....	54,270	10,100	166	1,750	236	45	.....	.....
June.....	70,522	44,500	307	2,350	307	59	.....	.....
July.....	97,413	36,000	175	3,140	424	81	.....	.....
August.....	3,091	598	17	100	13	2.6	.....	.....
September.....	35,874	28,100	17	1,200	156	30	.....	.....
Water Year 1973	584,852	55,100	17	1,600	2,000	488	.....	.....

ROYER RIVER BASIN
06609345 EAST ROYER RIVER ABOVE DENISON, IOWA

LOCATION.--Lat 42°00'33", long 95°20'04", near center of north line of section 13 T.89 W., R.39 N., Crawford County, on county road "W" bridge across East Boyer River at east city limits of Denison, Iowa.

DRAINAGE AREA.--129 mi² (334 km²).

AVERAGE ANNUAL SUSPENDED SEDIMENT DISCHARGE.--5 years (1968-73), 369,100 tons (334,800 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 27,200 mg/l September 1972; minimum daily, not determined.

Sediment discharge: Maximum daily, 635,000 tons (576,000 tonnes) September 26, 1973; minimum daily, 0.0 ton (0.0 tonne) several days 1969, 72.

REMARKS.--Records of suspended-sediment have been furnished by Corps of Engineers.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Date	Max.	Min.	Date	Date
1969	A	4,770	*	Aug. 7		59,900	0	Mar. 18	Jan. 29-31
1970	A	4,810	*	Mar. 25		5,300	0.6	May 14	Aug. 26
1971	A	22,000	*	June 7		23,800	0.2	Mar. 13	Sept. 15, 28
1972	A	27,200	*	Sept. 10		22,600	0	Sept. 11	several
1973	A	17,000	*	June 18		635,000	11	Sept. 26	several

A Records published by Corps of Engineers.

+ Maximum measured concentration.

* Not determined.

06609345 EAST BOYER RIVER ABOVE DENISON, ICWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Mcnth	Water discharge (cfs-days)	Lead (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Suspended sediment									
October...1968		3,577	1,460	2.4	115	28	3.0		
November.....		1,850	316	22	62	14	1.5		
December.....		295	35	1.2	9.5	2.3	.25		
January...1969		120	30	0	3.9	.93	.10		
February.....		50			1.8	.39	.04		
March.....		194,901	59,900	.10	6,290	1,510	163		
April.....		62,667	27,700	41	2,070	481	52		
May.....		1,404	92	20	45	11	1.2		
June.....		4,632	2,740	5.7	154	36	3.9		
July.....		23,415	9,680	8.2	755	182	20		
August.....		18,712	9,500	4.2	604	145	16		
September.....		271	34	4.0	9.0	2.1	.23		
Water Year 1969		311,294	59,900	0	853	2,410	260		
October.....		245	35	4.0	7.9	1.9	.20		
November.....		174	30	1.9	5.8	1.3	.15		
December.....		86	5.2	1.5	2.8	.67	.07		
Cal. Year 1969		306,077	59,900	0	839	2,370	255		
January...1970		68	11	.80	2.2	.53	.06		
February.....		280	35	.80	10	2.2	.23		
March.....		4,716	2,020	15	152	37	3.9		
April.....		2,682	609	6.4	89	21	2.2		
May.....		6,566	5,300	2.1	212	51	5.5		
June.....		783	208	3.3	26	6.1	.65		
July.....		191	31	1.1	6.2	1.5	.16		
August.....		442	125	.60	14	3.4	.37		
September.....		116	22	.80	3.9	.90	.10		
Water Year 1970		16,349	5,300	.60	45	127	14		
October.....		723	470	1.9	23	5.6	.60		
November.....		240	53	1.8	8.0	1.9	.20		
December.....		37	8.4	.60	1.2	.29	.03		
Cal. Year 1970		16,844	5,300	.60	46	131	14		
January...1971		17	.90	.30	.55	.13	.01		
February.....		18,743	15,000	.30	669	145	16		
March.....		36,064	23,800	4.3	1,160	280	30		
April.....		443	176	1.2	15	3.4	.37		
May.....		455	173	1.6	15	3.5	.38		

066C9345 EAST BOYER RIVER ABOVE DENISON, ICWF--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
June.....	23,418	20,000	.50	781	182	20				
July.....	1,816	1,550	.70	59	14	1.5				
August.....	1,487	1,400	.30	48	12	1.2				
September.....	18	1.7	.20	.60	.14	.02				
Water year 1971	83,461	23,800	.20	229	647	70				
October.....	2,371	950	0	76	18	2.0				
November.....	124	50	.30	4.1	.96	.10				
December.....	11	1.0	0	.35	.09	.01				
Cal. Year 1971	84,967	23,800	0	233	659	71				
January..... 1972	29	3.5	.10	.94	.22	.02				
February.....	47,354	13,100	.30	1,690	367	40				
March.....	773	127	4.5	25	6.0	.65				
April.....	329	115	.60	11	2.6	.27				
May.....	2,121	301	18	68	16	1.8				
June.....	55,677	80,600	12	3,190	742	80				
July.....	6,897	5,520	5.0	222	53	5.8				
August.....	215	48	1.0	6.9	1.7	.18				
September.....	383,343	226,000	1.5	12,800	2,970	320				
Water Year 1972	539,244	226,000	0	1,480	4,180	450				
October.....	2,224	839	11	72	17	1.9				
November.....	4,257	665	47	142	33	3.6				
December.....	7,168	2,710	19	231	56	6.0				
Cal. Year 1972	550,387	226,000	.10	1,510	4,270	459				
January..... 1973	6,694	2,440	22	216	52	5.6				
February.....	6,566	1,890	32	227	51	5.5				
March.....	21,983	4,490	141	709	170	18				
April.....	26,249	5,280	28	875	203	22				
May.....	25,043	5,350	78	808	194	21				
June.....	23,206	16,700	40	774	180	19				
July.....	104,354	63,100	56	3,370	809	87				
August.....	4,647	2,130	30	150	36	3.9				
September.....	662,682	635,000	11	22,100	5,140	553				
Water year 1973	895,093	635,000	11	2,450	6,940	747				

BOYER RIVER BASIN
 06609500 BOYER RIVER AT LOGAN, IOWA

LOCATION.--Lat 41°38'33", long 95°46'57", in SE 1/4 NW 1/4 sec.19, T.79 N., R.42 W., Harrison County, at highway bridge 300 ft (91 m) downstream from Illinois Central Railroad bridge at Logan, 0.4 mi (0.6 km) downstream from Elk Grove Creek, 10.5 mi (16.9 km) upstream from Willow Creek, and 15.8 mi (25.4 km) upstream from mouth.

DRAINAGE AREA.--871 mi² (2,256 km²).

AVERAGE ANNUAL SUPSENDED--SEDIMENT DISCHARGE.--12 years (1939-51), 7,495,000 tons (6,799,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 174,000 mg/l May 9, 1950; minimum daily, not determined. Sediment discharge: Maximum daily, 3,150,000 tons (2,859,000 tonnes) June 12, 1944; minimum daily, 0 tons (0.0 tonne), several days in 1940.

REMARKS.--Records of suspended sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1940	A	105,000	*	May 7	1,480,000	0	June 4	Several days	
1941	A	128,000	*	June 2	745,000	2	June 11	several days	
1942	A	146,000	*	June 1	1,530,000	1	June 28	Jan. 8, 9	
1943	A	153,000	*	June 13	1,680,000	5	May 15	several days	
1944	A	111,000	*	June 8	3,150,000	2	June 12	several days	
1945	A	112,000	*	May 27	1,880,000	10	June 1	several days	
1946	A	77,900	*	June 29	378,000	40	Aug. 21	Nov. 22, 23	
1947	A	86,900	*	July 5	802,000	15	June 12	Jan. 8	
1948	A	51,900	*	Mar. 31	244,000	6	Mar. 18	several days	
1949	A	110,000	*	July 20	794,000	6	Sept. 11	several days	
1950	A	174,000	*	May 9	1,440,000	1	June 18	several days	
1951	A	93,600	*	May 31	2,760,000	2	Mar. 28	several days	

A Published by Corps of Engineers
 † Maximum measured concentration
 * Not determined

06609500 BOYER RIVER AT LCGAN, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Minimum						Maximum
April.....1939	2,322	3,723	720	9.0	124	4.3	3.1	.....	.....	594
May.....	3,492	375,691	253,000	6.0	12,100	431	314	.....	.....	39,800
June.....	4,746	700,641	373,000	9.0	23,400	804	585	.....	.....	54,700
July.....	12,154	1,098,236	417,000	15	35,400	1,260	917	.....	.....	33,500
August.....	6,010	1,113,200	447,000	10	35,900	1,280	929	.....	.....	68,600
September.....	349	102	10	2.0	3.4	.12	.09	.....	.....	108
October.....	445	2,051	1,080	1.0	66	2.4	1.7	.....	.....	1,710
November.....	250	104	9.0	1.0	3.5	.12	.09	.....	.....	154
December.....	252	178	8.0	1.0	2.5	.09	.07	.....	.....	115
January.....1940	95	42	5.0	0	1.4	.05	.04	.....	.....	164
February.....	103	55	7.0	0	1.0	.06	.05	.....	.....	198
March.....	8,693	364,725	95,700	44	11,800	419	304	.....	.....	15,500
April.....	2,489	22,424	5,120	12	747	26	19	.....	.....	3,340
May.....	3,062	358,830	264,000	19	11,600	412	300	.....	.....	43,400
June.....	15,763	2,290,527	1,480,000	5.0	76,400	2,630	1,910	.....	.....	53,800
July.....	12,176	900,994	823,000	6.0	29,100	1,030	752	.....	.....	27,400
August.....	12,010	1,148,764	283,000	18	37,100	1,320	959	.....	.....	35,400
September.....	1,458	4,049	2,240	5.0	135	4.6	3.4	.....	.....	1,030
Water Year 1940	56,796	5,092,643	1,480,000	0	14,000	5,850	4,250	.....	.....	33,200
October.....	772	600	160	2.0	19	.69	.50	.....	.....	288
November.....	1,320	1,049	120	3.0	35	1.2	.88	.....	.....	294
December.....	1,203	396	31	5.0	13	.45	.33	.....	.....	122
Cal. Year 1940	59,144	5,092,455	1,480,000	0	14,000	5,850	4,250	.....	.....	31,900
January.....1941	1,234	495	33	9.0	16	.57	.41	.....	.....	149
February.....	5,165	68,600	25,600	13	2,370	79	57	.....	.....	4,920
March.....	5,690	51,962	13,600	65	1,680	60	43	.....	.....	3,380
April.....	2,545	4,961	1,530	31	165	5.7	4.1	.....	.....	722
May.....	1,463	4,916	2,090	9.0	159	5.6	4.1	.....	.....	1,240
June.....	12,537	1,651,613	745,000	20	55,100	1,900	1,380	.....	.....	48,800
July.....	2,197	34,932	20,200	7.0	1,130	40	29	.....	.....	5,890
August.....	1,618	135,019	112,000	4.0	4,360	155	113	.....	.....	30,900
September.....	1,958	340,376	182,000	2.0	11,300	391	284	.....	.....	64,400
Water Year 1941	37,702	2,294,919	745,000	2.0	6,270	2,630	1,920	.....	.....	22,500
October.....	2,015	133,767	76,900	5.0	4,320	154	112	.....	.....	24,600
November.....	3,197	54,440	19,700	110	1,810	63	45	.....	.....	6,310
December.....	2,108	77,625	42,400	12	2,500	89	65	.....	.....	13,600

06609500 BOYER RIVER AT LOGAN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum	Maximum daily			Weighted mean	
			Maximum	Minimum								
Cal. Year 1941	41,727	2,558,706	745,000	2.0	6,990	2,940	2,140	.....	22,700	.....	22,700
January.....1942	3,708	14,450	2,720	1.0	466	17	12	.....	1,440	.....	1,440
February.....	3,686	5,316	1,070	16	189	6.1	4.4	.....	534	.....	534
March.....	6,866	76,360	27,000	40	2,460	88	64	.....	4,120	.....	4,120
April.....	3,661	208,460	95,600	100	6,950	239	174	.....	21,100	.....	21,100
May.....	7,790	602,690	282,000	310	19,400	692	503	.....	28,700	.....	28,700
June.....	32,437	4,716,740	1,530,000	640	157,000	5,420	3,940	.....	53,900	.....	53,900
July.....	19,915	1,757,680	1,070,000	470	56,700	2,020	1,470	.....	32,700	.....	32,700
August.....	7,221	442,831	268,000	24	14,300	508	370	.....	22,700	.....	22,700
September.....	6,827	423,068	214,000	40	14,100	486	353	.....	23,000	.....	23,000
Water Year 1942	99,431	8,513,427	1,530,000	1.0	23,300	9,770	7,110	.....	31,700	.....	31,700
October.....	2,422	18,507	12,400	9.0	597	21	15	.....	2,830	.....	2,830
November.....	1,706	507	30	7.0	17	.58	.42	.....	110	.....	110
December.....	1,038	356	22	5.0	11	.41	.30	.....	127	.....	127
Cal. Year 1942	97,277	8,266,965	1,530,000	1.0	22,600	9,490	6,900	.....	31,500	.....	31,500
January.....1943	835	408	39	5.0	13	.47	.34	.....	181	.....	181
February.....	21,303	542,127	164,000	7.0	19,400	622	453	.....	9,430	.....	9,430
March.....	5,904	93,364	33,700	22	3,010	107	78	.....	5,860	.....	5,860
April.....	2,365	15,497	1,580	12	517	18	13	.....	2,430	.....	2,430
May.....	13,545	2,917,085	1,680,000	14	94,100	3,350	2,430	.....	79,800	.....	79,800
June.....	17,690	3,441,750	1,340,000	310	115,000	3,950	2,870	.....	72,100	.....	72,100
July.....	7,728	676,421	221,000	83	21,800	777	565	.....	32,400	.....	32,400
August.....	25,631	2,168,465	546,000	75	70,000	2,490	1,810	.....	31,300	.....	31,300
September.....	3,607	96,206	66,200	16	3,210	110	80	.....	9,880	.....	9,880
Water Year 1943	103,774	9,970,693	1,680,000	5.0	27,300	11,400	8,320	.....	35,600	.....	35,600
October.....	1,588	313	48	6.0	10	.36	.26	.....	73	.....	73
November.....	2,039	960	86	7.0	32	1.1	.80	.....	174	.....	174
December.....	1,310	815	140	3.0	26	.94	.68	.....	230	.....	230
Cal. Year 1943	103,545	9,953,411	1,680,000	3.0	27,300	11,400	8,310	.....	35,600	.....	35,600
January.....1944	1,672	5,416	2,430	2.0	175	6.2	4.5	.....	1,200	.....	1,200
February.....	3,141	58,432	26,400	2.0	2,090	67	49	.....	6,890	.....	6,890
March.....	6,763	286,327	149,327	70	9,240	329	239	.....	15,700	.....	15,700
April.....	7,722	126,550	20,300	140	4,220	145	106	.....	6,070	.....	6,070
May.....	16,377	929,730	229,000	1,660	29,700	1,060	769	.....	20,800	.....	20,800
June.....	55,677	10,129,630	3,150,000	550	338,000	11,600	8,460	.....	67,400	.....	67,400
July.....	17,667	443,210	119,000	470	14,300	509	370	.....	9,290	.....	9,290

06609500 BOYER RIVER AT LOGAN, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Maximum daily	Weighted mean
			Maximum	Minimum						
August.....	21,665	424,960	152,000	120	13,700	488	355	.....	7,260
September.....	4,698	23,820	3,940	150	794	27	20	.....	1,880
Water Year 1944	140,319	12,421,163	3,150,000	2.0	33,900	14,300	10,400	.....	32,800
October.....	3,625	4,685	560	14	151	5.4	3.9	.....	479
November.....	3,229	1,623	290	13	54	1.9	1.4	.....	186
December.....	2,246	1,049	70	11	34	1.2	.88	.....	173
Cal. Year 1944	144,482	12,426,432	3,150,000	2.0	34,000	14,300	10,400	.....	31,900
January....1945	1,815	980	97	10	32	1.1	.82	.....	200
February.....	9,760	119,379	29,700	10	4,120	137	100	.....	4,530
March.....	29,384	1,000,070	325,000	420	32,300	1,150	835	.....	12,600
April.....	35,759	1,203,100	826,000	330	40,100	3,900	1,000	.....	12,500
May.....	43,173	3,396,070	1,190,000	1,410	110,000	3,900	2,830	.....	29,100
June.....	53,212	5,307,540	1,880,000	1,400	177,000	6,090	4,430	.....	36,900
July.....	40,816	1,597,090	740,000	830	51,500	1,830	1,330	.....	14,500
August.....	16,779	315,290	111,000	220	10,200	362	263	.....	6,960
September.....	5,960	17,110	4,680	100	570	20	14	.....	1,060
Water Year 1945	245,758	12,963,986	1,880,000	10	35,500	14,900	10,800	.....	19,500
October.....	4,870	4,431	540	60	143	5.1	3.7	.....	337
November.....	3,824	2,653	270	40	88	3.0	2.2	.....	257
December.....	3,364	3,458	570	71	112	4.0	2.9	.....	381
Cal. Year 1945	248,716	12,967,171	1,880,000	10	35,500	14,900	10,800	.....	19,300
January....1946	11,696	32,183	11,100	72	1,040	37	27	.....	1,020
February.....	18,838	345,750	285,000	230	12,300	397	289	.....	6,800
March.....	16,205	370,190	71,400	460	11,900	425	309	.....	8,460
April.....	6,069	23,820	8,200	110	794	27	20	.....	1,450
May.....	14,537	680,090	203,000	180	21,900	781	568	.....	17,300
June.....	14,506	769,230	365,000	280	25,600	883	642	.....	19,600
July.....	8,628	215,320	112,000	180	6,950	247	180	.....	9,240
August.....	10,682	786,940	378,000	80	25,400	903	657	.....	27,300
September.....	9,835	591,054	334,000	48	19,700	679	493	.....	22,300
Water Year 1946	123,054	3,825,119	378,000	40	10,500	4,390	3,190	.....	11,500
October.....	7,412	227,240	124,000	120	7,330	261	190	.....	11,400
November.....	4,295	8,410	500	120	280	9.7	7.0	.....	725
December.....	3,029	10,212	3,060	35	329	12	8.5	.....	1,250
Cal. Year 1946	125,732	4,060,439	378,000	35	11,100	4,660	3,390	.....	12,000

06609500 BOYER RIVER AT LOGAN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acres-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January... 1947	1,745	1,156	150	15	37	1.3	.96			245	
February.....	4,166	30,030	5,060	53	1,070	34	25			2,670	
March.....	11,535	202,590	37,000	280	6,540	233	169			6,500	
April.....	12,711	522,400	285,000	610	17,400	600	436			15,200	
May.....	8,112	80,980	16,000	450	2,610	93	68			3,700	
June.....	46,945	3,457,880	802,000	9,980	115,000	3,970	2,890			27,300	
July.....	13,588	223,030	61,300	760	7,190	256	186			6,080	
August.....	4,233	9,610	1,450	90	310	11	8.0			841	
September.....	2,379	2,758	270	38	92	3.2	2.3			429	
Water Year 1947	120,150	4,776,296	802,000	15	13,100	5,480	3,990			14,700	
October.....	2,422	2,535	630	17	82	2.9	2.1			388	
November.....	3,578	6,807	1,500	58	227	7.8	5.7			705	
December.....	2,678	1,465	120	11	47	1.7	1.2			203	
Cal. Year 1947	114,092	4,541,241	802,000	11	12,400	5,210	3,790			14,700	
January... 1948	2,278	2,503	760	8.0	81	2.9	2.1			407	
February.....	15,374	119,066	72,100	20	4,250	137	99			2,870	
March.....	34,411	1,124,970	244,000	280	36,300	1,290	939			12,100	
April.....	7,629	94,534	33,500	74	3,150	109	79			4,590	
May.....	4,545	11,122	1,660	40	359	13	9.3			906	
June.....	2,737	23,970	11,500	24	799	28	20			3,240	
July.....	7,020	463,461	289,000	26	15,000	532	387			24,500	
August.....	3,848	82,069	31,800	7.0	2,650	94	69			7,900	
September.....	897	1,595	1,180	6.0	53	1.8	1.3			659	
Water Year 1948	87,417	1,934,097	289,000	6.0	5,300	2,220	1,610			8,190	
October.....	790	779	300	6.0	25	.89	.65			365	
November.....	1,462	2,837	460	15	95	3.3	2.4			719	
December.....	962	702	38	12	23	.81	.59			270	
Cal. Year 1948	81,953	1,927,608	289,000	6.0	5,280	2,210	1,610			8,710	
January... 1949	3,480	13,107	5,480	12	423	15	11			1,390	
February.....	4,863	51,788	15,300	50	1,790	59	43			3,940	
March.....	43,514	1,364,060	459,000	350	44,000	1,570	1,140			11,600	
April.....	5,914	27,000	3,480	190	900	31	23			1,690	
May.....	7,559	206,585	131,000	91	6,660	237	172			10,100	
June.....	9,770	487,350	167,000	190	16,200	560	407			18,500	
July.....	5,309	397,189	236,000	27	12,800	456	332			27,700	
August.....	4,121	324,934	195,000	10	10,500	373	271			29,200	
September.....	8,583	1,029,761	794,000	18	34,300	1,180	860			44,400	

0660950C BOYER RIVER AT LCGAN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Minimum
Water Year 1949	96,327	3,906,092	794,000	6.0	10,700	4,480	3,260	.....	15,000
October.....	2,512	58,063	32,900	12	1,870	67	48	.....	8,560
November.....	1,234	449	42	2.0	15	.52	.37	.....	135
December.....	1,064	586	45	15	19	.67	.49	.....	204
Cal. Year 1949	97,923	3,960,872	794,000	2.0	10,800	4,550	3,310	.....	15,000
January....1950	546	204	30	1.0	6.6	.23	.17	.....	138
February.....	12,702	225,911	168,000	15	8,070	259	189	.....	6,590
March.....	21,414	384,750	116,000	130	12,400	442	321	.....	6,650
April.....	1,365	1,145	110	18	38	1.3	.96	.....	311
May.....	14,433	1,070,787	620,000	56	34,500	1,230	894	.....	27,500
June.....	33,501	3,442,496	1,440,000	66	115,000	3,950	2,870	.....	38,100
July.....	11,244	359,537	116,000	73	11,600	413	300	.....	11,800
August.....	11,369	750,064	732,000	33	24,200	861	626	.....	24,400
September.....	1,869	724	200	12	24	.83	.60	.....	143
Water Year 1950	113,253	6,294,716	1,440,000	1.0	17,200	7,230	5,250	.....	20,600
October.....	2,931	74,314	65,800	12	2,400	85	62	.....	9,390
November.....	1,325	620	37	10	21	.71	.52	.....	173
December.....	1,177	496	25	8.0	16	.57	.41	.....	156
Cal. Year 1950	113,876	6,311,048	1,440,000	1.0	17,300	7,250	5,270	.....	20,500
January....1951	598	142	7.0	3.0	4.6	.16	.12	.....	88
February.....	9,240	79,765	56,000	2.0	2,850	92	67	.....	3,200
March.....	55,294	5,833,776	2,760,000	72	188,000	6,700	4,870	.....	39,100
April.....	23,643	1,010,310	774,000	2,280	33,700	1,160	843	.....	15,800
May.....	39,610	3,298,550	2,070,000	580	106,000	3,790	2,750	.....	30,800
June.....	52,923	2,850,490	860,000	3,370	95,000	3,270	2,380	.....	19,900
July.....	33,718	2,018,390	1,740,000	480	65,100	2,320	1,680	.....	22,200
August.....	50,713	2,642,470	645,000	450	85,200	3,030	2,210	.....	19,300
September.....	23,250	133,320	45,600	290	4,440	153	111	.....	2,120
Water Year 1951	294,422	17,942,643	2,760,000	2.0	49,200	20,600	15,000	.....	22,600

06609500 BOYER RIVER AT LOGAN, IOWA--CONTINUED

PERIODIC SEDIMENT

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Percent finer than indicated size, in millimeters	Suspended sediment discharge (tons per day)	
Apr. 23, 1945	11600		23300		730000	
July 18,.....	6850		13200		240000	
June 1, 1965	477	21.5	1000		1290	
July 13,.....	198		570		304	
Aug. 4,.....	106		110		31	
Sept. 9,.....	1270	20.0	10100		34300	
Oct. 5, 1965	423	12.0	560		640	
Nov. 2,.....	277	10.5	130		97	
Dec. 7,.....	200	2.0	180		97	
Jan. 4, 1966	230	1.0	340		211	
Mar. 8,.....	150	.0	160		65	
Apr. 5,.....	246	4.5	610		405	
May 4,.....	143	10.0	120		46	
June 9,.....	1880	14.5	47900		243000	
July 12,.....	125	26.5	140		47	
Aug. 9,.....	104	23.0	140		39	
Sept. 13,.....	54	21.0	19		2.8	
Oct. 4, 1966	50	10.0	22		3.0	
Nov. 8,.....	61	3.5	95		16	
Mar. 15, 1967	97	2.0	150		39	
Apr. 4,.....	68	13.5	40		7.3	
May 5,.....	45	10.0	46		5.6	
May 31,.....	86	11.0	110		26	
July 5,.....	286	20.0	260		201	
Aug. 3,.....	131	24.5	220		78	
Sept. 6,.....	47	22.0	70		8.9	
Nov. 3, 1967	63	3.0	160		27	
Dec. 4,.....	43	1.0	29		3.4	
Jan. 5, 1968	13	.0	22		.77	
Feb. 2,.....	60	.0	24		3.9	

06609500 BOYER RIVER AT LOGAN, IOWA--CONTINUED
 PERIODIC SEDIMENT

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis
			Concentration (mg/l)	Suspended sediment (tons per day)	Percent finer than indicated size, in millimeters		
Mar. 1,.....	41	1.0	10	1.1			
May 1,.....	49	21.0	180	24			
June 5,.....	25	23.0	130	8.8			
June 24,.....	666	23.0	11500	20700			
July 1,.....	229	24.0	1850	1140			
Aug. 5,.....	34	27.0	90	8.3			
Sept. 3,.....	43	22.0	250	29			
Oct. 1, 1968	179	16.0	338	163			
Oct. 31,.....	215	9.0	240	139			
Dec. 3,.....	193	3.0	204	106			
Feb. 5, 1969	93	1.0	13	3.3			
Apr. 10,.....	878	9.0	1320	3130			
May 7,.....	510	18.0	1510	2080			
June 5,.....	196	23.0	114	60			
July 2,.....	358	23.0	477	461			
Aug. 5,.....	227	23.0	684	419			
Sept. 3,.....	133	24.0	63	23			
Nov. 4, 1969	108	5.0	78	23			
Dec. 12,.....	78	.0	46	9.7			
Jan. 16, 1970	40	.0	56	6.0			
Feb. 3,.....	48	.0	25	3.2			
Mar. 2,.....	220	1.5	298	177			
Apr. 1,.....	272	4.5	1120	823			
May 6,.....	143	13.0	162	63			
June 2,.....	146	17.0	208	82			
July 7,.....	59	24.0	119	19			
Aug. 7,.....	81	23.0	283	62			
Aug. 26,.....	28	22.0	65	4.9			
Oct. 6, 1970	30	10.0	31	2.5			
Nov. 3,.....	72	4.5	125	24			
Nov. 30,.....	74	1.0	101	20			

BOYER RIVER BASIN
06609590 THOMPSON CREEK NEAR WOODRINE, IOWA

LOCATION.--Lat 41°44'15", long 95°48'20", in SW 1/4 SW 1/4 sec.13, T.80 N., R.43 W., Harrison County, 225 ft (69 m) downstream from gaging station on upstream side of county highway bridge, 0.8 mi (1.3 km) upstream from Willow Creek and 5.1 mi (8.2 km) west of Woodbine.

DRAINAGE AREA.--6.97 mi² (18.1 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--6 years (1963-69), 14,000 tons (12,700 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 34,900 mg/l May 25, 1965; minimum daily, 3 mg/l Aug. 1, 1964.

Sediment discharge: Maximum daily, 5,510 tons (5,000 tonnes) June 14, 1967; minimum daily, 0.01 ton (0.009 tonne) Oct. 1, 1968.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Min.	Date	Date
1964	1993	19,200	3	Apr. 20	Aug. 1
				3,500	May 23
1965	1993	34,700	5	May 25	Aug. 16
				3,000	July 19
1966	1993	14,100	5	May 11	Sept. 22-25
				340	July 26
1967	2013	22,200	4	June 5	June 14
				5,510	June 14
1968	2095	6,380	5	June 25	Oct. 1, Aug. 1
				520	June 29
1969	2145	33,400	13	Mar. 18	Oct. 1
				1,440	Mar. 18

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment			
		Load (tons)	Daily loads (tons)	Tons per sq mi	Concentration (mg/l)
		Maximum	Minimum	Mean	Maximum daily
October, 1963	22.7	2	.....	.06	.29
November,	26.7	2.4	.10	.08	.34
December,	24.5	3.4	.30	.11	.49
					0
					0
					0
					54
					120
					33
					33
					51

06609590 THOMPSON CREEK NEAR WOODBINE, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	t							
January....1964	20	2.8	.20	t	.09		.40	0	90	52	
February.....	18.9	3.2	.20	t	.11		.46	0	120	63	
March.....	21.6	15.9	4.2	.10	.51		2.3		1,400	273	
April.....	100.9	5,462.4	1,900	.20	182		784	4.6	19,200	20,100	
May.....	145.7	5,250.1	3,500	.10	169		753	4.4	10,100	13,300	
June.....	80.2	362.6	190	.10	12		52	.30	3,000	1,670	
July.....	101.8	705.3	590	t	23		101	.59	2,400	2,570	
August.....	169.9	6,240.1	2,900	t	201		895	5.2	4,900	13,600	
September.....	34.7	30.8	14	t	1.0		4.4	.03	2,200	329	
Water Year 1964	767.60	18,081.00	3,500	t	49		2,590	15	19,200	8,720	
October.....	18.7	1.3	.10	t	.04		.19	0	76	26	
November.....	26.1	7.1	3.3	t	.24		1.0	.01	950	101	
December.....	22.1	3.4	.30	t	.11		.49	0	110	57	
Cal. Year 1964	760.60	18,085.00	3,500	t	49		2,590	15	19,200	8,810	
January....1965	22.1	2.8	.20	t	.09		.40	0	90	47	
February.....	98.1	84.1	19	t	3.0		12	.07	900	318	
March.....	274.9	5,222.9	2,800	.30	168		749	4.4	10,700	7,040	
April.....	143.8	3,465.6	970	1.4	116		497	2.9	18,200	8,930	
May.....	110	1,545.8	1,000	.30	50		222	1.3	34,700	5,200	
June.....	63.5	218.3	160	.10	7.3		31	.18	3,000	1,270	
July.....	47.1	3,059.2	3,000	t	99		439	2.6	17,100	24,100	
August.....	35.5	120.9	110	t	3.9		17	.10	2,300	1,260	
September.....	162.6	1,644.3	560	.10	55		236	1.4	11,100	3,750	
Water Year 1965	1,024.50	15,375.70	3,000	t	42		2,210	13	34,700	5,560	
October.....	95.1	48.3	14	.30	1.6		6.9	.04	1,440	188	
November.....	65.4	14	1.6	.10	.47		2.0	.01	260	79	
December.....	52.1	43.8	6.8	.30	1.4		6.3	.04	1,470	311	
Cal. Year 1965	1,170.20	15,470.00	3,000	t	42		2,220	13	34,700	4,900	
January....1966	34.6	16	2.8	.10	.52		2.3	.01	570	171	
February.....	41.5	112.7	53	t	4.0		16	.09	6,500	1,010	
March.....	55.7	496.5	64	2.1	16		71	.41	14,100	3,300	
April.....	37.3	83.4	8.1	.80	2.8		12	.07	2,000	828	
May.....	41.4	210.2	81	.70	6.8		30	.18	12,100	1,880	
June.....	40.7	94	26	.30	3.1		13	.08	3,600	855	
July.....	33.5	378.6	340	.10	12		54	.32	5,400	4,190	
August.....	23.8	4.6	1.5	t	.15		.66	0	490	72	
September.....	17.2	204.4	140	t	6.8		29	.17	2,400	4,400	

06609590 THOMPSON CREEK NEAR WOODBINE, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	t							
Water Year 1966	538.30	1,706.50	340	t	4.7	245	1.4	14,100	1,170		
October.....	18.1	2.3	.20	t	.07	.33	0	150	47		
November.....	20.7	1.6	.20	t	.05	.23	0	150	29		
December.....	47.2	14.6	3.2	t	.47	2.1	.01	330	115		
Cal. Year 1966	411.70	1,618.90	340	t	4.4	232	1.4	14,100	1,460		
January....1967	18.2	5	.90	t	.16	.72	0	350	102		
February.....	27.1	10.8	2.5	t	.39	1.5	.01	460	148		
March.....	38.5	55.9	11	.10	1.8	8.0	.05	4,400	538		
April.....	36.5	81.1	12	.20	2.7	12	.07	2,300	823		
May.....	16.3	129.7	120	t	4.2	19	.11	2,640	2,950		
June.....	273	38,375.2	5,510	.30	1,280	5,510	32	22,200	52,100		
July.....	36.2	665.9	510	.10	21	96	.56	4,270	6,810		
August.....	14.5	4.8	3.4	t	.15	.69	0	370	123		
September.....	14.6	26.2	15	t	.87	3.8	.02	780	665		
Water Year 1967	560.90	39,373.10	5,510	t	108	5,650	33	22,200	26,000		
October.....	14.22	9.3	3.3	t	.30	1.3	.01	870	242		
November.....	20.42	3.7	.30	t	.12	.53	0	150	67		
December.....	11.15	2.3	.20	t	.07	.33	0	120	76		
Cal. Year 1967	520.69	39,369.90	5,510	t	108	5,650	33	22,200	28,000		
January....1968	8.74	1.9	.10	t	.06	.27	0	480	81		
February.....	4.91	.4	t	t	.01	.06	0	56	30		
March.....	18.32	61.2	6.5	t	2.0	8.8	.05	2,400	1,240		
April.....	36.38	176.3	59	.30	5.9	25	.15	2,500	1,790		
May.....	18.73	20.8	5.5	.10	.67	3.0	.02	2,050	411		
June.....	55.25	1,203.7	520	t	40	173	1.0	6,380	8,070		
July.....	24.66	357.6	140	t	12	51	.30	2,700	5,370		
August.....	32.28	264.9	130	t	8.5	38	.22	1,060	3,040		
September.....	19.42	70.7	55	t	2.4	10	.06	1,100	1,350		
Water Year 1968	264.48	2,172.80	520	t	5.9	312	1.8	6,380	3,040		
October.....	52.9	1,363.82	735	.01	44	196	1.1	6,420	9,550		
November.....	28.61	11.24	1.3	.08	.37	1.6	.01	358	146		
December.....	23.89	8.31	.91	.03	.27	1.2	.01	424	129		
Cal. Year 1968	324.09	3,540.87	735	t	9.7	508	3.0	6,420	4,050		
January....1969	20.68	18.41	3.7	.05	.59	2.6	.02	1,510	330		
February.....	28.29	33.74	10	.04	1.2	4.8	.03	581	442		

06609590 THOMPSON CREEK NEAR WOODBINE, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Maximum	Mean			Maximum daily	Weighted mean
			Maximum	Minimum						
arch.....	124.9	4,170.85	1,440	.68	135	598	3.5	33,400	12,400	
pril.....	83.2	497.58	114	.46	17	71	.42	6,900	2,220	
may.....	56.1	79.29	21	.34	2.6	11	.07	1,610	523	
une.....	132.21	322.57	99	.09	11	46	.27	1,640	904	
uly.....	87.67	763.14	618	.07	25	109	.64	10,400	3,220	
ugust.....	25.83	9.65	1.9	.02	.31	1.4	.01	411	138	
eptember.....	38.21	10.43	1.2	.07	.35	1.5	.01	287	101	
later Year 1969	702.49	7,289.03	1,440	.01	20	1,050	6.1	33,400	3,840	

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Concentration (mg/l)	Suspended sediment discharge (tons per day)	Suspended sediment										Methods of analysis		
					Percent finer than indicated size, in millimeters												
Aug. 4, 1964	4.4	19.0	3700	43	58	68	80	90	97	99	100						SPWC
July 14, 1966	2.2	25.5	11900	71	40	49	79	93	98	100							VPWC
June 5, 1967	5.6	18.0	14800	224	36	42	54	67	91	99	100						VPWC
June 9,.....	3.2	18.5	12300	106	36	44	53	68	90	100							VPWC
June 27,.....	11.0	21.0	37700	1120	31	37	44	57	91	100							VPWC
June 28,.....	5.9	20.0	37500	597	33	37	46	60	89	100							VPWC
July 25,.....	28	23.5	33900	2560	30	47	65	92	100								VPWC
July 25,.....	28	23.5	33900	2560	5	13	23	50	92								VPN
June 25, 1968	6.5	20.0	6440	110	42	46	48	57	84	99	100						VPWC
Sept. 4,.....	2.0	18.0	1010	5.5	36	40	47	49	74	98	100						VPWC
Mar. 19, 1969	7.0	.0	30800	593	20	23	29	58	72	97	99						VPWC
Apr. 5,.....	5.6	8.0	6540	99	32	36	41	43	84	99	100						VPWC
July 17,.....	11	24.0	10700	318	37	41	47	60	83	98	99						VPWC
July 25,.....	30	26.0	10900	883	38	42	46	60	91	97	98						VPWC

06609590 THOMPSON CREEK NEAR WOODBINE, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				12	13	24	39	89	99	100					
APR. 2, 1968	.61	3.0		.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	S

BOYER RIVER BASIN
06609600 WILLOW CREEK NEAR LOGAN, IOWA

LOCATION.--Lat 41°37'54", long 95°27'50", in NW1/4 sec.30, T.79 N., R.43 W., Harrison County, at bridge, at gaging station on county highway F50, 5.5 mi (8.8 km) west of Logan, and 7.5 mi (12.1 km) upstream from mouth.

DRAINAGE AREA.--129 mi² (334 km²).

EXTREMES.--Period of record: April 1968 to September 1971, 1973. Sediment concentrations: Maximum measured, 62,200 mg/l June 10, 1971; minimum daily, not determined.

Sediment discharge: Maximum daily, 170,000 tons (154,000 tonnes) Mar. 18, 1969; minimum daily, 0.0 ton (0.0 tonne) Jan. 21-24, 1971.

REMARKS.--Records of suspended-sediment, published as Willow Creek near Missouri Valley, Iowa, were furnished by Corps of Engineers prior to Sept. 30, 1971. Water year 1972 published as partial-record station.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)		Date	
		Max.	Min.	Max.	Min.	Date	Date
1968	A	33,000*	*	28,600	0.3	June 25	June 15-19
1969	A	32,000*	*	170,000	0.4	Mar. 18	Oct. 1
1970	A	5,330b	*	4,780	0.2	Mar. 3	May 25
1971	A	62,200b	*	34,200	0.0	June 30	Jan. 21-24
1973	+	14,200	45	18,100	2.7	Feb. 24	Sept. 7

A Published by Corps of Engineers
+ Water Resources Data for Iowa, Part 2, Water Quality Records
b Maximum measured concentration.
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tcns)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
April.....1968	374.8	176	15	.90	5.9	1.4	.15	.....	174
May.....	273.6	23	1.2	.40	.74	.18	.02	.....	31
June.....	747.4	33,622	28,600	.30	1,120	261	28	.....	16,700
July.....	807.8	9,476	7,100	.90	306	73	7.9	.....	4,340

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment						Concentration (mg/l)		
			Daily loads (tcns)		Mean	Tons per sq mi	Acres	Maximum daily	Weighted mean		
			Maximum	Minimum							
August.....	933.6	2,302	1,870	1.6	74	18	1.9	.....	913	
September.....	488.7	684	295	.60	23	5.3	.57	.....	518	
October.....1968	597.9	6,052	5,690	.40	195	47	5.1	.....	2,250	
November.....	327.6	73	6.3	1.0	2.4	.57	.06	.....	83	
December.....	309.1	72	4.4	.90	2.3	.56	.06	.....	86	
January.....1969	286	60	.....	.....	1.9	.47	.05	.....	78
February.....	335	199	132	1.4	6.0	1.5	.17	.....	220	
March.....	4,969	249,230	170,000	6.8	8,040	1,930	208	.....	18,600	
April.....	1,601	5,062	398	71	169	39	4.2	.....	1,170	
May.....	1,193	1,615	238	10	52	13	1.3	.....	501	
June.....	1,144	1,846	555	2.6	62	14	1.5	.....	598	
July.....	1,693	4,575	1,430	4.4	148	35	3.8	.....	1,000	
August.....	711.5	15,546	10,700	1.1	501	121	13	.....	8,090	
September.....	636	615	498	1.3	21	4.8	.51	.....	358	
Water Year 1969	14,203.10	284,945	170,000	.....	779	2,210	238	.....	7,430
October.....	.....	113	20	1.5	3.6	.88	.09	.....	.....
November.....	.....	117	12	1.5	3.9	.91	.10	.....	.....
December.....	.....	59	5.2	1.2	1.9	.46	.05	.....	.....
Cal. Year 1969	.....	279,037	170,000	1.1	764	2,160	233	.....	.....
January.....1970	.....	25	1.2	.30	.81	.19	.02	.....	.....
February.....	.....	707	101	.60	25	5.5	.59	.....	.....
March.....	.....	8,102	4,780	15	261	63	6.8	.....	.....
April.....	.....	519	42	2.9	17	4.0	.43	.....	.....
May.....	.....	1,411	954	1.6	46	11	1.2	.....	.....
June.....	.....	2,179	1,280	.40	73	17	1.8	.....	.....
July.....	.....	15	1.1	.30	.48	.12	.01	.....	.....
August.....	.....	88	74	.20	2.8	.68	.07	.....	.....
September.....	.....	153	78	.30	5.1	1.2	.13	.....	.....
Water Year 1970	.....	13,488	4,780	.20	37	105	11	.....	.....
October.....	.....	484	206	.40	16	3.8	.40	.....	.....
November.....	.....	79	14	.40	2.6	.61	.07	.....	.....
December.....	.....	28	5.4	.50	.90	.22	.02	.....	.....
Cal. Year 1970	.....	13,750	4,780	.20	38	107	12	.....	.....
January.....1971	.....	7	.....	0	.23	.05	.01	.....	.....
February.....	.....	40,168	20,700	.10	1,430	311	34	.....	.....
March.....	.....	52,464	23,300	13	1,690	407	44	.....	.....

C6609600 WILLOW CREEK NEAR ICGAN, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Lead (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
April		174	24	1.6	5.8	1.3			.15	
May		336	77	.90	11	2.6			.28	
June		64,354	34,200	1.1	2,150	499			54	
July		43,553	29,500	.70	1,400	338			36	
August		64	14	.10	2.1	.50			.05	
September		29	3.2	.10	.97	.22			.02	
Water Year 1971		201,740	34,200	0	553	1,560			168	
October	976	561.6	291	5.0	18	4.4			.47	213
November	1,680	1,398	154	23	47	11			1.2	308
December	873	767.2	192	3.7	25	5.9			.64	325
January	1,554	2,720	960	15	88	21			2.3	648
February	1,816	30,361.2	18,100	7.9	1,050	235			25	14,200
March	4,354	23,556	10,600	116	760	183			20	6,200
April	3,228	7,841	2,680	75	261	61			6.5	3,190
May	2,871	5,261	1,210	25	170	41			4.4	2,450
June	2,362	2,493.2	363	8.4	83	19			2.1	790
July	2,493	7,661	2,160	15	254	61			6.6	3,990
August	1,035	1,030.0	232	3.1	33	8.0			.86	2,600
September	2,036	4,761.2	3,990	2.7	159	37			4.0	1,610
Water Year 1973	25,278	88,611.2	18,100	2.7	243	687			74	14,200

06609600 WILLOW CREEK NEAR LOGAN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment		Methods of analysis
			Concentration (mg/l)	Percent finer than indicated size, in millimeters	
July 30,.....	12	30.5	163	5.3	
Aug. 1,.....	19	21.5	121	6.2	
Aug. 3,.....	10	28.5	98	2.6	
Aug. 6,.....	12	29.5	57	1.8	
Aug. 16,.....	11	29.5	27	.80	
Aug. 17,.....	8.6	32.0	106	2.5	
Aug. 23,.....	10	24.0	127	3.4	
Aug. 26,.....	12	22.0	81	2.6	
Aug. 30,.....	12	21.0	61	2.0	
Sept. 3,.....	11	20.5	62	1.8	
Sept. 6,.....	10	20.5	61	1.6	
Sept. 7,.....	9.6	20.0	44	1.1	
Sept. 11,.....	2140	20.0	6880	39800	
Sept. 12,.....	9040	20.0	7530	184000	

PERIODIC SEDIMENT

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Methods of analysis
July 30,.....	12	30.5	163	5.3		
Aug. 1,.....	19	21.5	121	6.2		
Aug. 3,.....	10	28.5	98	2.6		
Aug. 6,.....	12	29.5	57	1.8		
Aug. 16,.....	11	29.5	27	.80		
Aug. 17,.....	8.6	32.0	106	2.5		
Aug. 23,.....	10	24.0	127	3.4		
Aug. 26,.....	12	22.0	81	2.6		
Aug. 30,.....	12	21.0	61	2.0		
Sept. 3,.....	11	20.5	62	1.8		
Sept. 6,.....	10	20.5	61	1.6		
Sept. 7,.....	9.6	20.0	44	1.1		
Sept. 11,.....	2140	20.0	6880	39800		
Sept. 12,.....	9040	20.0	7530	184000		

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size					Methods of analysis					
				Percent finer than indicated size, in millimeters										
Sept. 4, 1973	23	20.5	3	1	2	11	74	94	97	99	100	SV		
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0

MISSOURI RIVER MAIN STEM

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA

LOCATION.--Lat 41°15'32", long 95°55'20", in SE 1/4 NW 1/4 sec.23, T.15 N., R.13 E., Douglas County, at Interstate 480 highway bridge in Omaha, and at mile 615.9 (991.0 km) (revised).

DRAINAGE AREA.--322,800 mi² (836,052 km²), approximately.

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--36 years (1930-31, 1940-73) 81,090,000 tons (73,560,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 41,900 mg/l May 1, 1951; minimum daily, not determined. Sediment discharge: Maximum daily, 8,500,000 tons (7,711,000 tonnes) June 16, 1941; minimum daily, 1,780 tons (1,615 tonnes) Dec. 10, 11, 1958.

REMARKS.--Records of suspended-sediment for period July 1929 to June 1932 compiled from House Document No. 238, (1935), and furnished by Corps of Engineers for the period 1955-71. Flow partially regulated by Fort Peck Reservoir until closure of Fort Randall Dam in July 1952, and the closure of Gavins Point Dam July 1955. Samples for this station have also been collected at Bellevue, Nebr. at River mile 601.4 (967.7 km).

ANNUAL EXTREMES.

Water Year	W.S.P. no.	Daily suspended sediment				Loads (tons)				
		Concentrations (mg/l)		Date		Date		Date		
		Max.	Min.	Date	Max.	Min.	Date	Max.	Min.	Date
1940	A	33,700b	*	July 9	5,350,000	3,300	June 5	3,300		Jan. 6-20
1941	A	20,200b	*	June 30	8,500,000	5,300	June 16	5,300		Jan. 27
1942	A	23,800b	*	June 20	6,600,000	4,300	May 6	4,300		Jan. 1
1943	A	16,700b	*	June 17	5,100,000	9,920	Apr. 10	9,920		Dec. 8-20
1944	A	22,700b	*	June 13	7,300,000	16,000	June 13	16,000		Dec. 17-31
1945	A	27,400b	*	July 17	4,620,000	19,700	July 17	19,700		Dec. 19-31
1946	A	25,700b	*	June 29	4,000,000	6,640	June 29	6,640		Dec. 16-25
1947	A	18,800b	*	June 23	4,600,000	2,950	June 23	2,950		Dec. 30-31
1948	A	9,000b	*	Mar. 27	2,460,000	6,800	Mar. 27	6,800		Dec. 10
1949	A	16,900b	*	June 21	2,724,000	6,500	Apr. 6	6,500		Jan. 1, 2
1950	A	13,600b	*	May 15	3,080,000	3,450	Apr. 5	3,450		Dec. 27
1951	A	41,900b	*	May 1	8,362,000	3,970	May 1	3,970		Dec. 8
1952	A	22,600b	*	July 8	3,596,000	7,100	Apr. 8	7,100		Jan. 1

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water Year	W.S.P. No.	Daily suspended sediment					
		Concentrations (mg/l)			Loads (tons)		
		Max.	Min.	Date	Max.	Min.	Date
1953	A	9,450b	*	June 9	1,989,000	4,700	June 10 Dec. 29
1954	A	9,130b	*	May 28	1,493,000	2,600	June 21 Jan. 16-18
1955	A	3,360b	*	July 12	407,000	4,090	July 11 Jan. 15
1956	A	4,110b	*	July 12	560,000	2,320	July 13 Nov. 29
1957	A	12,400b	*	June 17	2,651,000	1,810	June 16 Dec. 9
1958	A	1,910b	*	Apr. 7	258,000	3,290	July 2 Dec. 14
1959	A	17,500b	*	May 29	1,480,000	1,780	May 29 Dec. 10,11
1960	A	6,380b	*	June 17	1,430,000	8,490	Apr. 1 Dec. 1
1961	A	12,700b	*	July 28	742,000	11,900	June 15 Nov. 27
1962	A	13,500b	*	May 21	1,830,000	8,550	Mar. 29 Nov. 20-22
1963	A	20,700b	*	June 6	2,580,000	5,650	June 6 Mar. 2
1964	A	26,000b	*	May 26	3,100,000	38,400	May 26 Oct. 24
1965	A	24,400b	*	May 26	3,170,000	32,000	May 26 July 23
1966	A	3,710b	*	June 10	472,000	9,900	Oct. 1 Mar. 7
1967	A	6,920b	*	June 17	1,880,000	2,700	June 16 Jan. 10
1968	A	3,220b	*	June 26	417,000	9,500	June 25 Dec. 24
1969	A	2,620b	*	June 26	1,050,000	2,200	Apr. 12 Dec. 16
1970	A	2,030	*	May 14	220,000	6,400	May 14 Jan. 10
1971	A	3,080	*	June 9	667,000	7,310	June 11 Jan. 9

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Concentrations (mg/l)			Loads (tons)		
		Max.	Min.	Date	Max.	Min.	Date
1972	+	1,410	199	Dec. 21	254,000	4,860	Jan. 18
1973	+	6,730	256	Feb. 16	761,000	14,700	Feb. 16

A Records published by Corps of Engineers

b Maximum measured concentration

+ Water Resources Data for Iowa, Part 2, Water Quality Records

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tcns)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
July.....1929	1,704,800	26,400,000	.....	.....	852,000	82	22,000	.....	5,740
August.....	694,700	4,370,000	.....	.....	141,000	14	3,650	.....	2,330
September.....	428,500	1,710,000	.....	.....	57,000	5.3	1,430	.....	1,480
October.....	511,400	2,300,000	.....	.....	74,200	7.1	1,920	.....	1,670
November.....	461,370	2,080,000	.....	.....	69,300	6.4	1,740	.....	1,670
December.....	245,450	604,000	.....	.....	19,500	1.9	504	.....	911
January....1930	312,600	912,000	.....	.....	29,400	2.8	761	.....	1,080
February....	502,500	2,890,000	.....	.....	103,000	9.0	2,410	.....	2,130
March.....	1,600,700	23,300,000	.....	.....	752,000	72	19,400	.....	5,390
April.....	1,321,600	16,000,000	.....	.....	533,000	50	13,400	.....	4,480
May.....	1,314,100	18,700,000	.....	.....	603,000	58	15,600	.....	5,270
June.....	1,254,000	14,100,000	.....	.....	470,000	44	11,800	.....	4,160
July.....	859,400	4,500,000	.....	.....	145,000	14	3,760	.....	1,940
August.....	602,200	3,770,000	.....	.....	122,000	12	3,150	.....	2,320
September.....	622,300	6,450,000	.....	.....	215,000	20	5,380	.....	3,840
Water Year 1930	9,607,620	95,606,000	.....	.....	262,000	296	79,800	.....	3,690
October.....	521,500	4,420,000	.....	.....	143,000	14	3,690	.....	3,140
November.....	463,690	2,470,000	.....	.....	82,300	7.7	2,060	.....	1,970
December.....	251,930	414,000	.....	.....	13,400	1.3	346	.....	609

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment										Concentration (mg/l)	
		Load (tons)		Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum		Mean		Maximum daily	Weighted mean
		Maximum	Minimum	Maximum	Minimum			Maximum	Minimum				
September.....	508,100	2,922,000	234,000	35,000	97,400	9.1	2,440	.....	.....	.....	.....	.....	2,130
Water Year 1940	5,959,550	78,339,700	5,350,000	3,300	214,000	243	65,400	.....	.....	.....	.....	.....	4,870
October.....	408,410	7,180,900	1,750,000	18,900	232,000	22	5,990	.....	.....	.....	.....	.....	6,510
November.....	274,630	3,142,600	520,000	12,600	105,000	9.7	2,620	.....	.....	.....	.....	.....	4,240
December.....	248,930	1,004,800	76,000	7,600	32,400	3.1	839	.....	.....	.....	.....	.....	1,490
Cal. Year 1940	5,896,170	86,749,500	5,350,000	3,300	237,000	269	72,400	.....	.....	.....	.....	.....	5,450
January... 1941	254,170	511,300	62,500	5,300	16,500	1.6	427	.....	.....	.....	.....	.....	745
February.....	264,500	395,700	23,500	10,500	14,100	1.2	330	.....	.....	.....	.....	.....	554
March.....	491,700	3,975,900	340,000	12,800	128,000	12	3,320	.....	.....	.....	.....	.....	2,990
April.....	899,000	19,511,000	1,420,000	124,000	650,000	60	16,300	.....	.....	.....	.....	.....	8,040
May.....	681,400	9,425,000	540,000	161,000	304,000	29	7,870	.....	.....	.....	.....	.....	5,120
June.....	1,614,300	55,690,000	8,500,000	395,000	1,860,000	173	46,500	.....	.....	.....	.....	.....	12,800
July.....	892,800	12,736,000	1,100,000	92,000	411,000	39	10,600	.....	.....	.....	.....	.....	5,280
August.....	688,500	7,703,000	690,000	71,000	248,000	24	6,430	.....	.....	.....	.....	.....	4,140
September.....	818,000	18,193,000	2,100,000	143,000	606,000	56	15,200	.....	.....	.....	.....	.....	8,240
Water Year 1941	7,536,340	139,469,200	8,500,000	5,300	382,000	432	116,000	.....	.....	.....	.....	.....	6,850
October.....	727,700	9,746,000	930,000	161,000	314,000	30	8,130	.....	.....	.....	.....	.....	4,960
November.....	557,700	4,664,000	291,000	58,000	155,000	14	3,890	.....	.....	.....	.....	.....	3,100
December.....	303,280	884,700	61,500	6,300	28,500	2.7	738	.....	.....	.....	.....	.....	1,080
Cal. Year 1941	8,193,050	143,435,600	8,500,000	5,300	393,000	444	120,000	.....	.....	.....	.....	.....	6,480
January... 1942	234,290	352,800	18,600	4,300	11,400	1.1	294	.....	.....	.....	.....	.....	558
February.....	255,860	360,400	19,200	5,600	12,900	1.1	301	.....	.....	.....	.....	.....	522
March.....	731,810	9,467,800	1,520,000	11,000	305,000	29	7,900	.....	.....	.....	.....	.....	4,790
April.....	905,300	14,938,000	2,240,000	113,000	498,000	46	12,500	.....	.....	.....	.....	.....	6,110
May.....	2,487,200	86,053,000	6,600,000	140,000	2,780,000	267	71,800	.....	.....	.....	.....	.....	12,800
June.....	2,371,600	69,620,000	4,700,000	730,000	2,320,000	216	58,100	.....	.....	.....	.....	.....	10,900
July.....	1,338,400	21,359,000	2,770,000	335,000	689,000	66	17,800	.....	.....	.....	.....	.....	5,910
August.....	851,400	8,044,000	1,010,000	100,000	259,000	25	6,710	.....	.....	.....	.....	.....	3,500
September.....	742,100	4,932,000	340,000	67,000	164,000	15	4,120	.....	.....	.....	.....	.....	2,460
Water Year 1942	11,506,640	230,421,700	6,600,000	4,300	631,000	714	192,000	.....	.....	.....	.....	.....	7,420
October.....	696,400	3,310,000	186,000	61,000	107,000	10	2,760	.....	.....	.....	.....	.....	1,760
November.....	675,100	3,309,000	152,000	42,000	110,000	10	2,760	.....	.....	.....	.....	.....	1,820
December.....	251,500	398,760	41,500	9,920	12,900	1.2	333	.....	.....	.....	.....	.....	587
Cal. Year 1942	11,540,960	222,144,760	6,600,000	4,300	609,000	688	185,000	.....	.....	.....	.....	.....	7,130

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)				Daily loads (tcns)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
		Maximum		Minimum		Mean	Maximum daily			Weighted mean	
		Maximum	Minimum	Maximum	Minimum						
January...1943	291,900	440,600	18,700	11,700	14,200	1.4	368	.....	.....	559
February.....	394,440	821,100	100,000	10,600	29,300	2.5	685	.....	.....	771
March.....	854,400	7,324,300	960,000	49,300	236,000	23	6,110	.....	.....	3,170
April.....	2,819,700	43,779,000	5,100,000	222,000	1,460,000	136	36,500	.....	.....	5,750
May.....	976,400	10,098,000	2,060,000	130,000	326,000	31	8,430	.....	.....	3,830
June.....	2,096,900	58,545,000	4,630,000	355,000	1,950,000	181	48,900	.....	.....	10,300
July.....	2,298,900	35,190,000	2,120,000	348,000	1,140,000	109	29,400	.....	.....	5,670
August.....	1,001,200	8,905,000	515,000	124,000	287,000	28	7,430	.....	.....	3,290
September.....	932,600	7,497,000	378,000	114,000	250,000	23	6,260	.....	.....	2,980
Water Year 1943	13,289,440	179,617,760	5,100,000	9,920	492,000	556	150,000	.....	.....	5,010
October.....	866,900	4,110,000	237,000	102,000	133,000	13	3,430	.....	.....	1,760
November.....	867,500	4,018,500	180,000	90,000	134,000	12	3,350	.....	.....	1,720
December.....	523,700	1,398,500	101,000	16,000	45,100	4.3	1,170	.....	.....	989
Cal. Year 1943	13,924,540	182,127,000	5,100,000	10,600	499,000	564	152,000	.....	.....	4,840
January.....1944	474,400	1,035,900	76,000	16,800	33,400	3.2	865	.....	.....	809
February.....	535,100	2,080,900	282,000	20,000	71,800	6.4	1,740	.....	.....	1,440
March.....	740,700	8,259,500	990,000	32,000	266,000	26	6,890	.....	.....	4,130
April.....	2,309,500	40,950,000	5,150,000	200,000	1,370,000	127	34,200	.....	.....	6,570
May.....	1,159,500	18,962,000	1,800,000	217,000	612,000	59	15,800	.....	.....	6,060
June.....	3,012,000	79,155,000	7,300,000	875,000	2,640,000	245	66,100	.....	.....	9,730
July.....	2,607,500	66,470,000	5,000,000	230,000	2,140,000	206	55,500	.....	.....	9,440
August.....	1,226,400	20,160,000	2,300,000	173,000	650,000	62	16,800	.....	.....	6,090
September.....	873,500	5,078,000	365,000	72,000	169,000	16	4,240	.....	.....	2,150
Water Year 1944	15,197,100	251,678,300	7,300,000	16,000	688,000	780	210,000	.....	.....	6,130
October.....	802,700	3,255,500	200,000	79,500	105,000	10	2,720	.....	.....	1,500
November.....	859,700	4,628,000	229,000	103,000	154,000	14	3,860	.....	.....	1,990
December.....	421,300	938,300	97,000	19,700	30,300	2.9	783	.....	.....	825
Cal. Year 1944	15,022,700	250,973,100	7,300,000	16,800	686,000	777	209,000	.....	.....	6,190
January.....1945	469,000	719,200	23,200	23,200	23,200	2.2	600	.....	.....	568
February.....	727,000	2,366,000	190,000	28,000	84,500	7.3	1,970	.....	.....	1,210
March.....	2,017,500	31,232,500	2,380,000	69,000	1,010,000	97	26,100	.....	.....	5,730
April.....	1,089,200	14,557,000	1,450,000	125,000	485,000	45	12,200	.....	.....	4,950
May.....	767,900	14,200,000	2,500,000	68,000	458,000	44	11,900	.....	.....	6,850
June.....	1,733,600	42,365,000	3,830,000	570,000	1,410,000	131	35,400	.....	.....	9,050
July.....	1,632,200	28,413,000	4,620,000	328,000	917,000	88	23,700	.....	.....	6,450
August.....	1,037,700	10,002,000	760,000	147,000	323,000	31	8,350	.....	.....	3,570
September.....	723,200	3,860,500	250,000	66,000	129,000	12	3,220	.....	.....	1,980

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Water Year 1945	12,281,000	156,537,000	4,620,000	19,700	429,000	485	131,000	.....	4,720
October.....	906,000	5,503,000	280,000	140,000	178,000	17	4,590	.....	2,250
November.....	607,830	2,502,900	150,000	12,000	83,400	7.8	2,090	.....	1,530
December.....	298,580	699,200	90,000	6,640	22,600	2.2	584	.....	867
Cal. Year 1945	12,009,710	156,420,300	4,620,000	6,640	429,000	485	131,000	.....	4,820
January....1946	336,000	495,600	20,200	14,600	16,000	1.5	414	.....	546
February.....	430,900	1,674,400	121,000	20,300	59,800	5.2	1,400	.....	1,440
March.....	959,800	7,694,000	537,000	60,000	248,000	24	6,420	.....	2,970
April.....	765,900	5,726,500	780,000	56,500	191,000	18	4,780	.....	2,770
May.....	760,200	15,058,500	1,370,000	54,000	486,000	47	12,600	.....	7,340
June.....	1,272,800	35,100,000	4,100,000	305,000	1,170,000	109	29,300	.....	10,200
July.....	1,271,600	18,411,000	1,640,000	280,000	594,000	57	15,400	.....	5,360
August.....	678,300	5,511,500	400,000	70,000	178,000	17	4,600	.....	3,010
September.....	905,200	10,725,000	925,000	122,000	358,000	33	8,950	.....	4,390
Water Year 1946	9,193,110	109,101,600	4,100,000	6,640	299,000	338	91,100	.....	4,400
October.....	1,065,100	12,903,000	910,000	259,000	416,000	40	10,800	.....	4,490
November.....	699,500	4,051,000	269,000	44,000	135,000	13	3,380	.....	2,140
December.....	260,820	654,000	40,400	2,950	21,100	2.0	546	.....	929
Cal. Year 1946	9,406,120	118,004,500	4,100,000	2,950	323,000	366	98,500	.....	4,650
January....1947	359,800	538,220	60,500	4,860	30,300	2.9	783	.....	966
February.....	436,300	1,461,500	87,000	28,700	52,200	4.5	1,220	.....	1,240
March.....	797,400	5,772,000	890,000	74,000	186,000	18	4,820	.....	2,680
April.....	2,359,100	38,300,000	3,030,000	515,000	1,280,000	119	32,000	.....	6,010
May.....	1,595,600	17,271,000	1,860,000	242,000	557,000	54	14,400	.....	4,010
June.....	2,373,800	51,545,000	4,600,000	450,000	1,720,000	160	43,000	.....	8,040
July.....	2,302,400	31,778,000	2,300,000	242,000	1,030,000	98	26,500	.....	5,110
August.....	1,253,600	7,304,000	400,000	166,000	236,000	23	6,100	.....	2,160
September.....	988,900	4,196,000	173,000	107,000	140,000	13	3,500	.....	1,570
Water Year 1947	14,492,320	176,173,720	4,600,000	2,950	483,000	546	147,000	.....	4,500
October.....	1,115,600	5,767,000	251,000	139,000	186,000	18	4,810	.....	1,910
November.....	876,500	4,738,000	265,000	24,000	158,000	15	3,950	.....	2,000
December.....	365,160	698,200	61,000	6,800	22,500	2.2	583	.....	708
Cal. Year 1947	14,824,160	169,768,920	4,600,000	4,860	465,000	526	142,000	.....	4,240
January....1948	395,360	746,200	54,000	12,500	24,100	2.3	623	.....	699
February.....	527,500	1,346,200	212,000	17,600	46,400	4.2	1,120	.....	945

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment										Concentration (mg/l)	
		Lead (tcns)		Daily loads (tcns)		Mean		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum						
March.....	1,465,700	20,010,000	2,460,000	56,000	645,000	62	16,700	.....	.....	.....	.....	5,060
April.....	1,816,800	19,004,000	1,630,000	167,000	633,000	59	15,900	.....	.....	.....	.....	3,870
May.....	1,116,900	10,373,000	705,000	128,000	335,000	32	8,660	.....	.....	.....	.....	3,440
June.....	2,267,800	35,334,000	2,210,000	320,000	1,180,000	109	29,500	.....	.....	.....	.....	5,770
July.....	2,062,800	32,205,000	1,990,000	520,000	1,040,000	100	26,900	.....	.....	.....	.....	5,780
August.....	1,350,000	15,107,000	1,040,000	202,000	487,000	47	12,600	.....	.....	.....	.....	4,140
September.....	949,300	4,746,000	238,000	110,000	158,000	15	3,960	.....	.....	.....	.....	1,850
Water Year 1948	14,309,420	150,074,600	2,460,000	6,800	410,000	465	125,000	.....	.....	.....	.....	3,880
October.....	1,179,400	6,769,000	329,000	132,000	218,000	21	5,650	.....	.....	.....	.....	2,130
November.....	1,028,700	6,837,700	381,000	86,400	228,000	21	5,710	.....	.....	.....	.....	2,460
December.....	346,110	1,153,650	121,000	7,500	37,200	3.6	963	.....	.....	.....	.....	1,230
Cal. Year 1948	14,506,370	153,631,750	2,460,000	7,500	420,000	476	128,000	.....	.....	.....	.....	3,920
January.....1949	374,160	730,700	49,000	6,500	23,600	2.3	610	.....	.....	.....	.....	723
February.....	479,500	986,400	90,000	20,000	35,200	3.1	823	.....	.....	.....	.....	762
March.....	1,674,300	22,285,000	2,700,000	100,000	719,000	69	18,600	.....	.....	.....	.....	4,930
April.....	2,761,400	37,394,000	2,720,000	199,000	1,250,000	116	31,200	.....	.....	.....	.....	5,020
May.....	1,164,100	8,068,000	506,000	161,000	260,000	25	6,730	.....	.....	.....	.....	2,570
June.....	1,381,100	16,248,000	1,120,000	226,000	542,000	50	13,600	.....	.....	.....	.....	4,360
July.....	1,088,200	9,024,000	450,000	145,000	291,000	28	7,530	.....	.....	.....	.....	3,070
August.....	922,900	4,823,000	248,000	162,000	156,000	15	4,030	.....	.....	.....	.....	1,940
September.....	914,600	6,231,000	958,000	101,000	208,000	19	5,200	.....	.....	.....	.....	2,520
Water Year 1949	13,314,470	120,550,450	2,720,000	6,500	330,000	373	101,000	.....	.....	.....	.....	3,350
October.....	905,100	4,244,800	188,000	84,300	137,000	13	3,540	.....	.....	.....	.....	1,740
November.....	703,800	2,693,000	210,000	44,600	89,800	8.3	2,250	.....	.....	.....	.....	1,420
December.....	305,190	583,910	44,600	3,600	18,800	1.8	487	.....	.....	.....	.....	709
Cal. Year 1949	12,674,350	113,311,810	2,720,000	3,600	310,000	351	94,600	.....	.....	.....	.....	3,310
January.....1950	267,300	331,250	14,400	6,800	10,700	1.0	276	.....	.....	.....	.....	459
February.....	295,300	321,550	20,000	7,850	11,500	1.00	268	.....	.....	.....	.....	403
March.....	1,001,300	9,844,200	2,440,000	55,600	318,000	30	8,220	.....	.....	.....	.....	3,640
April.....	3,336,100	55,670,000	3,080,000	913,000	1,860,000	172	46,500	.....	.....	.....	.....	6,180
May.....	1,699,400	30,951,000	3,410,000	191,000	998,000	96	25,800	.....	.....	.....	.....	6,750
June.....	1,458,900	18,246,000	2,990,000	160,000	608,000	57	15,200	.....	.....	.....	.....	4,630
July.....	1,669,800	18,226,000	1,750,000	249,000	588,000	56	15,200	.....	.....	.....	.....	4,040
August.....	1,139,000	11,144,000	862,000	144,000	359,000	35	9,300	.....	.....	.....	.....	3,620
September.....	1,026,400	7,296,000	445,000	118,000	243,000	23	6,090	.....	.....	.....	.....	2,630
Water Year 1950	13,807,590	159,551,710	3,410,000	3,600	437,000	494	133,000	.....	.....	.....	.....	4,280

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tcns)	Daily loads (tcns)			Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
October.....	1,095,400	7,177,000	516,000	149,000	232,000	22	5,990	.....	2,430
November.....	932,170	5,438,790	297,000	9,690	181,000	17	4,540	.....	2,160
December.....	361,360	1,175,180	100,000	3,970	37,900	3.6	981	.....	1,200
Cal. Year 1950	14,282,430	165,820,970	3,410,000	3,970	454,000	514	138,000	.....	4,300
January.....	571,200	1,751,000	73,500	28,000	56,500	5.4	1,460	.....	1,140
February.....	469,300	1,470,100	363,000	21,000	52,500	4.6	1,230	.....	1,160
March.....	983,100	15,587,800	3,600,000	39,900	503,000	48	13,000	.....	5,870
April.....	2,655,500	43,795,000	3,040,000	491,000	1,460,000	136	36,600	.....	6,110
May.....	1,517,700	24,355,000	8,360,000	201,000	786,000	75	20,300	.....	5,940
June.....	2,026,900	49,665,000	4,500,000	622,000	1,660,000	154	41,500	.....	9,080
July.....	1,796,700	25,054,000	3,720,000	292,000	808,000	78	20,900	.....	5,160
August.....	1,678,300	25,521,000	2,520,000	157,000	823,000	79	21,300	.....	5,630
September.....	1,625,400	18,467,000	1,630,000	255,000	616,000	57	15,400	.....	4,210
Water Year 1951	15,713,030	219,456,870	8,360,000	3,970	601,000	680	183,000	.....	5,170
October.....	1,419,400	11,079,000	895,000	265,000	357,000	34	9,250	.....	2,890
November.....	1,197,600	8,512,000	371,000	167,000	284,000	26	7,100	.....	2,630
December.....	490,900	3,564,300	1,230,000	8,500	115,000	11	2,980	.....	2,690
Cal. Year 1951	16,432,000	228,821,200	8,360,000	8,500	627,000	709	191,000	.....	5,160
January.....	458,540	1,211,550	72,000	7,100	39,100	3.8	1,010	.....	979
February.....	921,900	5,168,000	397,000	85,000	178,000	16	4,310	.....	2,080
March.....	1,099,600	9,752,000	1,910,000	123,000	315,000	30	8,140	.....	3,280
April.....	5,663,200	62,346,000	3,600,000	821,000	2,080,000	193	52,000	.....	4,080
May.....	1,911,500	13,036,000	691,000	303,000	421,000	40	10,900	.....	2,530
June.....	1,674,800	17,078,000	3,060,000	216,000	569,000	53	14,300	.....	3,780
July.....	1,292,600	15,553,000	3,120,000	112,000	502,000	48	13,000	.....	4,460
August.....	950,600	5,472,000	258,000	117,000	177,000	17	4,570	.....	2,130
September.....	908,300	5,191,000	220,000	137,000	173,000	16	4,330	.....	2,120
Water Year 1952	17,988,940	157,962,850	3,600,000	7,100	432,000	489	132,000	.....	3,250
October.....	940,100	4,516,000	181,000	112,000	146,000	14	3,770	.....	1,780
November.....	801,100	3,601,900	181,000	13,500	120,000	11	3,010	.....	1,670
December.....	308,400	322,950	23,000	4,700	10,400	1.0	270	.....	388
Cal. Year 1952	16,930,640	143,248,400	3,600,000	4,700	391,000	444	120,000	.....	3,130
January.....	404,600	596,250	45,000	6,350	19,200	1.8	498	.....	546
February.....	489,000	1,593,500	80,200	32,800	56,900	4.9	1,330	.....	1,210
March.....	1,267,700	13,183,900	1,120,000	47,500	425,000	41	11,000	.....	3,850
April.....	1,016,700	5,880,300	544,000	65,400	196,000	18	4,910	.....	2,140

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum daily			Weighted mean	
			Maximum	Minimum						
May.....	1,347,500	12,187,000	1,240,000	154,000	393,000	38	10,200	.....	3,350
June.....	2,143,500	25,127,000	1,990,000	182,000	838,000	78	21,000	.....	4,340
July.....	1,360,300	6,277,700	791,000	81,300	203,000	19	5,240	.....	1,710
August.....	1,075,400	3,999,000	421,000	57,200	129,000	12	3,340	.....	1,380
September.....	1,017,200	3,249,900	153,000	68,500	108,000	10	2,710	.....	1,180
Water Year 1953	12,171,500	80,535,400	1,990,000	4,700	221,000	249	67,200	.....	2,450
October.....	1,005,200	2,676,500	108,000	68,200	86,100	8.3	2,230	.....	984
November.....	615,100	1,180,100	91,900	15,800	39,300	3.7	985	.....	711
December.....	432,300	906,840	68,000	2,770	29,300	2.8	757	.....	777
Cal. Year 1953	12,174,500	76,851,990	1,990,000	2,770	211,000	238	64,100	.....	2,340
January.....	282,800	232,750	12,500	2,600	7,510	7.2	194	.....	305
February.....	462,700	1,231,800	158,000	9,400	44,000	3.8	1,030	.....	986
March.....	836,700	3,840,700	346,000	16,600	124,000	12	3,210	.....	1,700
April.....	858,500	3,801,000	794,000	50,900	127,000	12	3,170	.....	1,640
May.....	925,600	4,973,200	916,000	49,700	160,000	15	4,150	.....	1,990
June.....	1,275,700	9,390,400	1,490,000	80,800	313,000	29	7,840	.....	2,730
July.....	1,036,700	3,880,400	258,000	89,600	125,000	12	3,240	.....	1,390
August.....	1,001,600	2,581,300	107,000	64,800	83,300	8.0	2,150	.....	955
September.....	963,300	2,602,600	131,000	69,700	86,800	8.1	2,170	.....	1,000
Water Year 1954	9,696,200	37,291,590	1,490,000	2,600	102,000	116	31,100	.....	1,420
October.....	1,002,500	3,105,000	150,000	19,400	100,000	9.6	2,590	.....	1,150
November.....	435,200	658,600	37,700	11,600	22,000	2.0	550	.....	560
December.....	394,100	478,060	25,300	5,990	15,400	1.5	399	.....	449
Cal. Year 1954	9,475,400	36,775,810	1,490,000	2,600	101,000	114	30,700	.....	1,440
January.....	281,070	304,610	19,800	4,090	9,330	9.4	254	.....	401
February.....	291,560	357,110	20,800	5,670	12,800	1.1	298	.....	454
March.....	665,700	2,306,230	212,000	7,560	74,400	7.1	1,930	.....	1,280
April.....	876,700	4,322,000	265,000	111,000	144,000	13	3,610	.....	1,830
May.....	933,000	3,011,800	149,000	76,300	97,200	9.3	2,510	.....	1,200
June.....	908,800	2,431,600	105,000	48,800	81,100	7.5	2,030	.....	991
July.....	978,000	3,666,200	407,000	42,300	118,000	11	3,060	.....	1,390
August.....	888,400	2,246,200	107,000	10,400	72,500	7.0	1,870	.....	936
September.....	1,032,000	2,605,000	113,000	67,700	86,800	8.1	2,170	.....	935
Water Year 1955	8,687,030	25,492,410	407,000	4,090	69,800	79	21,300	.....	1,090
October.....	996,300	2,715,200	99,800	76,000	87,600	8.4	2,270	.....	1,010
November.....	418,370	953,690	91,000	2,320	31,800	3.0	796	.....	844

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
Suspended sediment									
December.....	280,460	342,780	18,000	2,770	11,100	1.1	286	.....	453
Cal. Year 1955	8,550,360	25,262,420	407,000	2,320	69,200	78	21,100	.....	1,090

January....1956	285,800	236,060	11,000	5,740	7,610	.73	197	.....	306
February.....	283,740	208,060	10,200	5,130	7,170	.64	174	.....	272
March.....	772,900	2,737,000	198,000	10,300	88,300	8.5	2,280	.....	1,310
April.....	907,400	2,864,200	134,000	64,500	95,500	8.9	2,390	.....	1,170
May.....	937,200	3,095,900	266,000	71,500	99,900	9.6	2,580	.....	1,220
June.....	916,800	2,127,300	93,600	53,900	70,900	6.6	1,780	.....	859
July.....	955,800	3,169,800	560,000	42,400	102,000	9.8	2,650	.....	1,230
August.....	1,035,300	2,312,500	172,000	42,500	74,600	7.2	1,930	.....	827
September.....	1,007,700	2,550,000	132,000	60,400	85,000	7.9	2,130	.....	937
Water Year 1956	8,797,770	23,312,490	560,000	2,320	63,700	72	19,500	.....	981

October.....	865,800	2,555,100	130,000	19,500	82,400	7.9	2,130	.....	1,090
November.....	403,810	485,910	23,800	7,020	16,200	1.5	406	.....	446
December.....	273,750	228,680	11,800	1,810	7,380	.71	191	.....	309
Cal. Year 1956	8,646,000	22,570,510	560,000	1,810	61,700	70	18,800	.....	967

January....1957	264,160	224,150	12,600	2,070	7,230	.69	187	.....	314
February.....	251,470	336,010	18,600	9,200	12,000	1.0	280	.....	495
March.....	315,420	395,170	26,200	7,780	12,700	1.2	330	.....	464
April.....	494,450	1,333,810	105,000	9,120	44,500	4.1	1,110	.....	999
May.....	868,700	3,340,100	189,000	46,900	108,000	10	2,790	.....	1,420
June.....	949,300	9,998,400	2,650,000	44,300	333,000	31	8,350	.....	3,900
July.....	962,800	4,158,200	304,000	65,800	134,000	13	3,470	.....	1,600
August.....	949,100	2,278,100	97,900	58,900	73,500	7.1	1,900	.....	889
September.....	879,300	2,659,100	181,000	54,500	88,600	8.2	2,220	.....	1,120
Water Year 1957	7,478,060	27,592,730	2,650,000	1,810	76,700	87	23,400	.....	1,390

October.....	934,800	3,008,500	137,000	34,700	97,000	9.3	2,510	.....	1,190
November.....	446,900	753,900	44,200	14,700	25,100	2.3	629	.....	625
December.....	288,990	369,820	17,700	3,290	11,900	1.1	309	.....	474
Cal. Year 1957	7,605,390	28,855,260	2,650,000	2,070	79,100	89	24,100	.....	1,410

January....1958	296,930	328,810	19,100	3,310	10,600	1.0	274	.....	410
February.....	291,140	719,350	197,000	7,000	25,700	2.2	600	.....	915
March.....	374,700	875,420	166,000	9,730	28,200	2.7	731	.....	865
April.....	752,300	2,490,400	138,000	59,200	83,000	7.7	2,080	.....	1,230
May.....	822,900	2,278,500	101,000	36,100	73,500	7.1	1,900	.....	1,030
June.....	843,900	2,001,000	122,000	45,200	66,700	6.2	1,670	.....	878

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tcns)			Tons per sq mi	ACRE-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
July.....	841,700	2,581,900	258,000	43,200	83,300	8.0	2,160	.....	1,140
August.....	845,700	1,903,800	81,200	36,700	61,400	5.9	1,590	.....	834
September.....	848,700	1,793,400	73,300	45,300	59,800	5.6	1,500	.....	783
Water Year 1958	7,588,660	19,104,800	258,000	3,290	52,300	59	15,900	.....	932
October.....	912,400	2,177,300	98,700	53,700	70,200	6.7	1,820	.....	884
November.....	372,960	528,050	65,800	5,960	17,600	1.6	441	.....	524
December.....	286,780	407,450	33,500	1,780	13,100	1.3	340	.....	526
Cal. Year 1958	7,490,110	18,085,380	258,000	1,780	49,500	56	15,100	.....	894
January.....	303,450	388,200	18,600	3,500	12,500	1.2	324	.....	474
February.....	296,460	278,210	16,800	4,500	9,340	.86	232	.....	348
March.....	394,700	661,240	66,900	9,270	21,300	2.0	552	.....	620
April.....	738,800	2,343,600	150,000	29,300	78,100	7.3	1,960	.....	1,170
May.....	890,200	8,349,400	1,480,000	43,500	269,000	26	6,970	.....	3,470
June.....	908,600	6,016,900	1,160,000	59,400	201,000	19	5,020	.....	2,450
July.....	877,300	2,506,500	293,000	40,400	80,900	7.8	2,090	.....	1,060
August.....	941,900	2,946,800	246,000	52,900	95,100	9.1	2,460	.....	1,160
September.....	930,800	2,200,000	115,000	50,200	73,300	6.8	1,840	.....	875
Water Year 1959	7,854,350	28,803,650	1,480,000	1,780	78,900	89	24,000	.....	1,360
October.....	881,000	2,361,800	98,600	55,700	76,200	7.3	1,970	.....	993
November.....	416,790	830,500	98,600	2,150	27,700	2.6	693	.....	738
December.....	312,920	447,890	22,200	8,490	14,400	1.4	374	.....	530
Cal. Year 1959	7,892,920	29,331,040	1,480,000	2,150	80,400	91	24,500	.....	1,380
January.....	269,370	284,000	.....	.....	9,160	.88	237	.....	390
February.....	281,830	347,000	.....	.....	12,000	1.1	290	.....	456
March.....	418,760	1,450,000	.....	.....	46,800	4.5	1,210	.....	1,280
April.....	1,637,200	5,429,500	1,430,000	54,200	314,000	29	7,870	.....	2,130
May.....	925,700	4,789,400	298,000	79,600	154,000	15	4,000	.....	1,920
June.....	827,800	3,583,400	604,000	42,500	119,000	11	2,990	.....	1,600
July.....	874,900	2,619,200	147,000	55,200	84,500	8.1	2,190	.....	1,110
August.....	978,800	2,872,900	284,000	46,500	92,700	8.9	2,400	.....	1,090
September.....	887,500	1,874,000	97,100	42,300	62,500	5.8	1,560	.....	782
Water Year 1960	8,712,570	30,889,590	1,430,000	.....	84,400	96	25,800	.....	1,310
October.....	867,800	1,944,600	83,000	49,200	62,700	6.0	1,620	.....	830
November.....	666,700	1,411,100	74,900	11,900	47,000	4.4	1,180	.....	784
December.....	318,040	412,000	.....	.....	13,300	1.3	344	.....	480

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharges (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
Cal. Year 1960	8,954,400	31,017,100	1,430,000	84,700	96	25,900	1,280			
January...1961	311,700	433,000	1,000,000	14,000	1.3	361	515			
February.....	311,670	348,000	1,000,000	12,400	1.1	290	414			
March.....	728,200	2,806,000	1,000,000	90,300	8.7	2,340	1,420			
April.....	770,100	2,688,100	1,000,000	89,600	8.3	2,240	1,290			
May.....	820,100	3,139,100	1,000,000	101,000	9.7	2,620	1,420			
June.....	806,700	4,891,200	1,000,000	163,000	15	4,080	2,250			
July.....	906,200	2,962,700	1,000,000	95,600	9.2	2,470	1,210			
August.....	922,800	2,373,300	1,000,000	76,600	7.4	1,980	953			
September.....	887,600	2,220,800	1,000,000	74,000	6.9	1,850	927			
Water Year 1961	8,317,610	25,623,900	742,000	70,200	79	21,400	1,140			
October.....	524,670	1,126,100	78,300	10,200	3.5	940	795			
November.....	249,720	319,860	13,700	8,550	.99	267	474			
December.....	257,170	287,000	1,000,000	9,260	.89	240	413			
Cal. Year 1961	7,496,630	23,585,160	742,000	64,600	73	19,700	1,170			
January...1962	284,000	314,000	1,000,000	10,100	.97	262	409			
February.....	297,100	319,000	1,000,000	11,400	.99	266	398			
March.....	795,200	7,095,890	1,830,000	9,250	22	5,920	3,300			
April.....	1,411,000	6,133,200	775,000	204,000	19	5,120	1,610			
May.....	889,600	8,372,400	1,510,000	37,900	26	6,990	3,490			
June.....	1,135,000	6,886,000	620,000	230,000	21	5,750	2,250			
July.....	1,235,900	6,514,100	509,000	210,000	20	5,440	1,950			
August.....	869,900	2,588,600	822,000	83,500	8.0	2,160	1,100			
September.....	910,500	3,571,300	489,000	119,000	11	2,980	1,450			
Water Year 1962	8,859,760	43,527,450	1,830,000	119,000	135	36,300	1,820			
October.....	854,000	2,668,600	98,200	65,600	8.1	2,180	1,130			
November.....	772,500	2,053,800	103,000	10,100	6.4	1,710	985			
December.....	305,500	263,000	1,000,000	8,480	.81	220	319			
Cal. Year 1962	9,760,200	46,719,890	1,830,000	128,000	145	39,000	1,770			
January...1963	300,550	258,000	1,000,000	8,320	.80	215	318			
February.....	228,540	193,000	1,000,000	6,890	.60	161	313			
March.....	448,110	1,623,670	165,000	5,650	5.0	1,360	1,340			
April.....	807,400	2,606,100	121,000	65,100	8.1	2,180	1,200			
May.....	875,600	3,062,900	346,000	62,800	9.5	2,560	1,300			
June.....	948,300	10,901,800	2,580,000	36,600	34	9,100	4,260			
July.....	952,600	2,348,800	97,700	53,800	7.3	1,960	913			
August.....	964,000	2,483,400	388,000	56,100	7.7	2,070	954			

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
September.....	878,300	1,755,900	85,200	47,400	58,500	5.4	1,470	.....	740
Water Year 1963	8,335,400	30,158,970	2,580,000	.....	82,600	93	25,200	.....	1,340
October.....	918,600	1,768,500	82,300	38,400	57,000	5.5	1,480	.....	713
November.....	814,900	1,300,000	.....	.....	43,300	4.0	1,090	.....	591
December.....	286,600	327,000	.....	.....	10,500	1.0	273	.....	423
Cal. Year 1963	8,423,500	28,629,070	2,580,000	.....	78,400	89	23,900	.....	1,260
January.....1964	261,160	282,000	.....	.....	9,100	.87	235	.....	400
February.....	260,000	287,000	.....	.....	9,900	.89	240	.....	409
March.....	403,550	603,000	.....	.....	19,500	1.9	503	.....	551
April.....	813,000	4,353,700	498,000	34,700	145,000	13	3,630	.....	1,980
May.....	909,100	9,310,500	3,100,000	41,600	300,000	29	7,770	.....	3,790
June.....	845,700	2,572,300	353,000	38,900	85,700	8.0	2,150	.....	1,130
July.....	898,700	2,111,400	181,000	45,300	68,100	6.5	1,760	.....	870
August.....	1,020,500	1,688,700	82,200	31,400	54,500	5.2	1,410	.....	613
September.....	888,100	1,650,300	106,000	27,200	55,000	5.1	1,380	.....	688
Water Year 1964	8,321,910	26,254,400	3,100,000	.....	71,700	81	21,900	.....	1,170
October.....	940,400	2,360,600	101,000	53,700	76,100	7.3	1,970	.....	930
November.....	861,000	1,800,000	.....	.....	60,000	5.6	1,500	.....	774
December.....	298,570	370,000	.....	.....	11,900	1.1	309	.....	459
Cal. Year 1964	8,401,780	27,389,500	3,100,000	.....	74,800	85	22,900	.....	1,210
January.....1965	300,300	340,000	.....	.....	11,000	1.1	284	.....	419
February.....	309,470	345,000	.....	.....	12,300	1.1	288	.....	413
March.....	565,600	2,300,000	.....	.....	74,200	7.1	1,920	.....	1,510
April.....	1,284,700	8,042,500	869,000	52,700	268,000	25	6,710	.....	2,320
May.....	984,700	7,334,400	3,170,000	45,700	237,000	23	6,120	.....	2,760
June.....	944,500	4,398,800	486,000	51,000	147,000	14	3,670	.....	1,720
July.....	932,000	1,996,400	162,000	32,000	64,400	6.2	1,670	.....	793
August.....	1,014,400	2,400,200	158,000	43,800	77,400	7.4	2,000	.....	876
September.....	957,200	4,914,900	961,000	45,700	164,000	15	4,100	.....	1,900
Water Year 1965	9,392,840	36,602,800	3,170,000	.....	100,000	113	30,600	.....	1,440
October.....	1,014,500	3,432,100	472,000	67,200	111,000	11	2,860	.....	1,250
November.....	909,000	2,088,200	95,300	24,400	69,600	6.5	1,740	.....	851
December.....	587,700	1,024,300	47,500	20,600	33,000	3.2	855	.....	646
Cal. Year 1965	9,804,070	38,616,800	3,170,000	.....	106,000	120	32,200	.....	1,460

06610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum daily			Maximum daily	Weighted mean
			Maximum	Minimum						
January...1966	535,700	900,000	.....	.....	29,000	.....	751	.....	622
February.....	701,400	2,656,900	416,000	13,300	94,900	.....	2,220	.....	1,400
March.....	697,900	1,553,600	113,000	9,900	50,100	.....	1,300	.....	824
April.....	916,800	2,333,700	127,000	53,300	77,800	.....	1,950	.....	943
May.....	959,700	2,015,200	235,000	40,500	65,000	.....	1,680	.....	778
June.....	991,000	3,445,200	383,000	44,600	115,000	.....	2,880	.....	1,290
July.....	1,064,500	2,021,400	292,000	37,400	65,200	.....	1,690	.....	703
August.....	1,044,400	2,396,300	301,000	38,600	77,300	.....	2,000	.....	850
September.....	973,800	1,784,200	75,700	44,900	59,500	.....	1,490	.....	679
Water Year 1966	10,396,400	25,651,100	472,000	.....	70,300	.....	79	.....	914
October.....	1,029,000	2,350,700	108,000	56,600	75,800	.....	1,960	.....	846
November.....	956,200	2,260,000	103,000	24,200	75,300	.....	1,890	.....	875
December.....	426,300	545,700	25,000	14,200	17,600	.....	455	.....	474
Cal. Year 1966	10,296,700	24,262,900	416,000	.....	66,500	.....	75	.....	873
January...1967	342,750	481,300	24,300	2,700	15,500	.....	402	.....	520
February.....	285,120	320,000	.....	.....	11,400	.....	267	.....	416
March.....	665,600	1,897,300	196,000	10,500	61,200	.....	1,580	.....	1,060
April.....	972,800	2,350,000	124,000	59,700	78,300	.....	1,960	.....	895
May.....	1,039,100	1,759,500	108,000	31,200	56,800	.....	1,470	.....	627
June.....	1,291,900	13,654,000	1,880,000	44,600	455,000	.....	11,400	.....	3,910
July.....	1,041,800	2,707,000	248,000	46,200	87,300	.....	2,260	.....	962
August.....	1,111,600	1,924,700	89,200	48,500	62,100	.....	1,610	.....	641
September.....	1,060,600	1,625,800	82,400	38,400	54,200	.....	1,360	.....	568
Water Year 1967	10,222,770	31,876,000	1,880,000	.....	87,300	.....	99	.....	1,150
October.....	1,069,900	2,711,000	128,000	55,700	87,500	.....	2,260	.....	938
November.....	952,800	2,052,700	90,200	20,700	68,400	.....	1,710	.....	798
December.....	530,000	708,500	41,400	9,500	22,900	.....	591	.....	495
Cal. Year 1967	10,363,970	32,191,800	1,880,000	.....	88,200	.....	100	.....	1,150
January...1968	465,700	620,000	.....	.....	20,000	.....	518	.....	493
February.....	496,900	880,000	.....	.....	30,300	.....	735	.....	656
March.....	730,500	2,000,000	.....	.....	64,500	.....	1,670	.....	1,010
April.....	989,800	2,339,300	106,000	43,900	78,000	.....	1,950	.....	875
May.....	1,023,700	1,566,200	67,300	35,500	50,500	.....	1,310	.....	567
June.....	1,048,600	3,382,800	344,000	32,400	113,000	.....	2,820	.....	1,190
July.....	1,083,300	1,708,600	116,000	33,600	55,100	.....	1,430	.....	584
August.....	1,068,300	1,423,100	84,100	27,600	45,900	.....	1,190	.....	493
September.....	976,600	1,295,100	71,000	27,500	43,200	.....	1,080	.....	491

066610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acres-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
Water Year 1968	10,436,100	20,687,300	344,000	.....	56,500	64	17,300	.....	734
October.....	1,049,700	2,369,800	425,000	32,600	76,400	7.3	1,980	.....	836
November.....	972,700	1,700,300	77,900	41,000	56,700	5.3	1,420	.....	647
December.....	562,900	597,800	59,300	2,200	19,300	1.9	499	.....	393
Cal. Year 1968	10,468,700	19,883,000	425,000	.....	54,300	62	16,600	.....	703
January.....	482,200	645,000	.....	.....	20,800	2.0	533	.....	495
February.....	515,500	940,000	.....	.....	33,600	2.9	785	.....	675
March.....	802,300	3,330,900	469,000	15,000	107,000	10	2,780	.....	1,540
April.....	1,989,700	8,259,800	1,050,000	79,300	275,000	26	6,890	.....	1,540
May.....	1,386,500	3,193,400	320,000	53,400	103,000	9.9	2,670	.....	853
June.....	1,264,200	4,856,500	779,000	36,500	162,000	15	4,050	.....	1,420
July.....	1,393,300	5,032,400	428,000	55,800	162,000	16	4,200	.....	1,340
August.....	1,669,700	4,720,900	367,000	61,300	152,000	15	3,940	.....	1,050
September.....	1,641,000	3,183,300	227,000	45,400	106,000	9.9	2,660	.....	718
Water Year 1969	13,729,700	38,830,100	1,050,000	.....	106,000	120	32,400	.....	1,050
October.....	1,463,400	2,194,700	94,100	53,000	70,800	6.8	1,830	.....	555
November.....	1,235,700	1,794,800	83,900	37,600	59,800	5.6	1,500	.....	538
December.....	685,000	872,800	62,200	18,400	28,200	2.7	729	.....	472
Cal. Year 1969	14,528,500	39,024,500	1,050,000	15,000	107,000	121	32,600	.....	995
January.....	497,000	538,600	25,700	6,400	17,400	1.7	450	.....	401
February.....	587,900	663,300	62,300	11,900	23,700	2.1	554	.....	418
March.....	946,400	3,050,200	198,000	46,000	58,400	9.4	2,550	.....	1,190
April.....	1,035,700	1,924,400	91,200	35,800	64,100	6.0	1,610	.....	688
May.....	1,069,900	2,356,200	220,000	27,600	76,000	7.3	1,970	.....	816
June.....	1,138,100	2,626,900	160,000	47,100	87,600	8.1	2,190	.....	855
July.....	1,247,300	1,490,400	52,900	35,500	48,100	4.6	1,240	.....	443
August.....	1,370,700	1,597,600	57,400	45,600	51,500	4.9	1,330	.....	432
September.....	1,261,800	1,777,400	76,200	46,900	59,200	5.5	1,480	.....	522
Water Year 1970	12,538,900	20,887,300	220,000	6,400	57,200	65	17,400	.....	617
October.....	1,320,400	1,731,500	67,300	43,200	55,900	5.4	1,450	.....	486
November.....	1,276,600	1,867,500	68,500	47,100	62,300	5.8	1,560	.....	542
December.....	720,300	822,300	55,600	17,000	26,500	2.5	686	.....	423
Cal. Year 1970	12,472,100	20,446,300	220,000	6,400	56,000	63	17,100	.....	607
January.....	448,100	602,660	27,700	7,310	19,400	1.9	503	.....	498
February.....	788,500	2,137,100	508,000	18,100	76,300	6.6	1,780	.....	1,000

C6610000 MISSOURI RIVER AT CMAHA, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Weighted mean
Suspended sediment										
March.....	1,195,400	4,027,100	653,000	24,300	130,000	12	3,360	.....	1,250
April.....	1,188,600	2,103,400	124,000	46,500	70,100	6.5	1,760	.....	655
May.....	1,407,900	2,215,500	102,000	41,600	71,500	6.9	1,850	.....	583
June.....	1,777,800	5,864,200	667,000	50,700	195,000	18	4,890	.....	1,220
July.....	1,579,200	2,658,200	164,000	59,400	85,700	8.2	2,220	.....	623
August.....	1,513,600	2,139,300	112,000	40,900	69,000	6.6	1,790	.....	523
September.....	1,477,200	1,806,500	74,000	47,100	60,200	5.6	1,510	.....	453
Water Year 1971	14,693,600	27,975,660	667,000	7,310	76,600	87	23,400	.....	705
October....	1,587,900	2,234,400	90,700	51,200	72,100	6.9	1,870	.....	521
November....	1,645,200	2,213,000	127,000	34,000	73,800	6.9	1,850	.....	498
December....	950,900	1,115,400	86,100	12,300	36,000	3.5	931	.....	434
Cal. Year 1971	15,560,300	33,538,460	667,000	7,310	91,900	104	28,000	.....	798
January....	583,210	680,540	35,500	4,860	22,000	2.1	568	.....	432
February....	643,600	726,400	48,000	17,600	25,000	2.3	606	.....	418
March.....	1,088,900	2,376,700	124,000	24,300	76,700	7.4	1,980	.....	808
April.....	1,342,800	2,085,800	87,400	43,500	69,500	6.5	1,740	.....	575
May.....	1,532,900	3,039,700	145,000	64,800	98,100	9.4	2,540	.....	734
June.....	1,490,500	2,844,900	152,000	47,800	94,800	8.8	2,370	.....	707
July.....	1,537,800	3,225,800	254,000	47,900	104,000	10.0	2,690	.....	777
August.....	1,563,200	1,760,400	98,900	39,400	56,800	5.5	1,470	.....	417
September....	1,513,100	2,304,700	118,000	58,000	76,800	7.1	1,920	.....	564
Water Year 1972	15,480,010	24,607,740	254,000	4,860	67,200	76	20,500	.....	589
October.....	1,603,900	2,297,600	130,000	53,600	74,100	7.1	1,920	.....	531
November....	1,544,700	2,387,100	131,000	59,100	79,600	7.4	1,990	.....	572
December....	812,600	1,389,100	238,000	21,300	44,800	4.3	1,160	.....	633
Cal. Year 1972	15,257,210	25,118,740	254,000	4,860	68,600	78	21,000	.....	610
January....	811,300	2,151,300	220,000	17,800	69,400	6.7	1,800	.....	982
February....	688,600	1,136,100	133,000	14,700	40,600	3.5	948	.....	611
March.....	1,312,400	5,393,500	481,000	46,000	174,000	17	4,510	.....	1,520
April.....	920,800	2,223,800	155,000	51,900	74,100	6.9	1,860	.....	894
May.....	1,058,100	2,193,200	134,000	38,500	70,700	6.8	1,830	.....	768
June.....	999,900	1,869,400	115,000	43,700	62,300	5.8	1,560	.....	692
July.....	1,081,000	4,013,000	761,000	45,100	129,000	12	3,350	.....	1,370
August.....	1,029,100	1,561,200	121,000	23,600	50,400	4.8	1,300	.....	562
September....	994,500	1,867,000	382,000	31,000	62,200	5.8	1,560	.....	695
Water Year 1973	12,856,900	28,488,300	761,000	14,700	78,100	88	23,800	.....	821

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	
Cct. 14, 1971	49300	14.0	616	82000	3 15 32 97 100	VPWC
Oct. 28,	52700	13.5	585	83200	19	S
Nov. 11,	56200	6.5	854	130000	17 33 99 100	VPWC
Nov. 22,	55700	4.5	276	41500	46	S
Dec. 6,	44500	3.0	403	48400	26 45 100	VPWC
Mar. 13, 1972	34100	3.5	1200	110000	64	VPWC
Mar. 23,	42800	5.5	672	77700	52 68 99 100	VPWC
Apr. 10,	45700	7.0	649	80100	25	S
Apr. 17,	41300	12.0	383	42700	40 60 100	VPWC
Apr. 20,	43600	10.5	502	59100	40	S
Apr. 24,	44900	10.5	723	87600	29	S
Apr. 27,	47300	10.0	636	81200	37 49 99 100	VPWC
May 1,	48300	11.5	751	97900	27 50 98 100	VPWC
May 4,	49700	11.0	1010	136000	37 50 98 100	VPWC
May 8,	48400	7.0	900	118000	64 74 100	VPWC
May 11,	45500	13.0	638	78400	55 69 100	VPWC
May 15,	47300	15.0	688	87900	42 56 93 100	VPWC
May 18,	44900	17.0	569	69000	37 53 89 100	VPWC
May 22,	45100	23.0	519	63200	32	S
May 25,	51800	18.0	893	125000	35	S
June 1,	50800	18.5	495	67900	55 73 100	VPWC
June 5,	50400	23.5	514	69900	39	S
June 8,	49900	23.0	862	116000	33 52 100	VPWC
June 12,	54600	22.0	852	126000	43	S
June 19,	50900	21.0	1110	153000	35 51 100	VPWC
June 22,	48100	19.0	430	55800	70 72 100	VPWC
June 26,	44900	21.0	396	48000	37	S
June 29,	45800	22.0	811	100000	61	S
July 10,	47700	25.0	527	67900	25 44 99 100	V
July 20,	43700	24.5	1040	123000	75	S
Aug. 10,	50800	21.0	445	61000	40 60 100	V
Aug. 22,	49700	25.0	436	58500	30	S
Sept. 5,	48700	22.5	579	76100	19 34 99 100	V
Sept. 21,	49600	21.0	694	92900	21	S

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieva;
N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis		
			Concentration (mg/L)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters				
Cct. 27, 1972	52000	10.5	930	131000	19	30	95	100	V
Cct. 30,	50800	10.0	562	77100	26				S
Nov. 6,	56700	9.0	716	110000	26				S
Nov. 17,	54700	4.0	394	58200	43	58	96	100	V
Dec. 21,	18800	1.0	402	20400	33	50	100		V
Dec. 26,	23100	1.0	690	43000	18				S
Jan. 17, 1973	26200	2.0	732	51800	58	69	97	100	V
Jan. 22,	29200	.0	775	61100	42				S
Feb. 20,	23900	2.0	428	27600	36	53	100		V
Feb. 26,	30200	.0	1140	93000	75				S
Mar. 15,	46800	.0	2100	265000	87	91	100		VPWC
Mar. 27,	35600	9.5	779	74900	68				S
Apr. 5,	28500	6.5	774	59600	46				S
Apr. 16,	33000	11.0	1780	159000	65	76	99	100	VPWC
May 7,	36500	14.0	882	86900	53	67	99	100	VPWC
May 29,	38100	16.5	1210	124000	37				S
June 14,	33800	23.5	776	70800	51	72	100		VPWC
July 6,	35400	24.0	1010	96500	45	66	97	100	VPWC
July 27,	32700	23.0	503	44400	46				S
Aug. 6,	30800	25.0	356	29600	50	70	99	100	V
Aug. 27,	35700	26.0	801	77200	61				S
Sept. 3,	35500	24.0	780	74800	23	34	98	100	V
Sept. 17,	32800	17.0	628	55600	20				S

MISSOURI RIVER MAIN STEM

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA

LOCATION.--Lat 40°43'55", Long 95°50'48", in NW 1/4 NE 1/4 sec.9, T.8 N., R.14 E., Otto County, at Waubonsie Highway Bridge at Nebraska City, and at mile 562.6 (905.2 km).

DRAINAGE AREA.--414,400 mi² (1,073,296 km²), approximately.

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--16 years (1958-73), 46,790,000 tons (42,450,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum measured, 14,500 mg/l June 7, 1963; minimum daily, not determined. Sediment discharge: Maximum daily, 3,050,000 tons (2,767,000 tonnes) May 26, 1964; minimum daily, 1,770 tons (1,606 tonnes) Dec. 16, 1968.

REMARKS.--Records of suspended sediment furnished by Corps of Engineers for the period 1958-71. Flows partially regulated by Gavins Point Dam.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1958	A	9,780b	*	Feb. 28	1,807,000	4,500	Feb. 28	Jan. 5	
1959	A	10,740b	*	May 6	2,050,000	5,500	June 1	Jan. 4	
1960	A	8,830b	*	June 21	2,800,000	6,570	Apr. 5	Nov. 19	
1961	A	5,300b	*	Aug. 2	807,000	19,500	June 15	Nov. 27	
1962	A	10,210b	*	May 29	2,630,000	10,000	Mar. 30	Mar. 1	
1963	A	14,500b	*	June 7	2,290,000	18,100	June 6	Mar. 1	
1964	A	12,900b	*	May 25	3,050,000	17,100	May 26	Mar. 1	
1965	A	11,000b	*	May 27	2,520,000	21,600	May 27	Nov. 30	
1966	A	6,950b	*	May 24	956,000	25,700	June 10	Mar. 7	
1967	A	9,220b	*	June 12	2,560,000	9,560	June 11	Jan. 21	
1968	A	3,770b	*	June 27	597,000	12,600	June 27	Dec. 24	
1969	A	4,020b	*	Mar. 17	1,270,000	1,770	Mar. 19	Dec. 16	
1970	A	1,840b	*	Aug. 14	284,000	9,770	June 12	Jan. 12	
1971	A	12,140b	*	May 11	1,900,000	8,210	May 11	Jan. 11	

Daily suspended sediment

0680700 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	
1972	+	2,880	150	Jan. 17	587,000	4,050	Jan. 17		
1973	+	4,660	252	July 19	918,000	24,400	July 19		

a Published by Corps of Engineers
b Maximum measured concentration
+ Water Resources Data for Iowa, Part 2, Water Quality Records

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tcns)	Daily loads (tcns)			Tons per sq mi	Concentration (mg/l)	
			Maximum	Minimum	Mean		Maximum daily	Weighted mean
August.....1957	1,057,600	3,462,000	169,000	83,900	112,000	8.4	2,890	1,210
September.....	996,100	2,782,600	163,000	53,400	92,800	6.7	2,320	1,030
October.....	1,074,700	3,142,600	135,000	64,200	101,000	7.6	2,620	1,080
November.....	581,200	1,080,100	66,700	19,000	36,000	2.6	902	688
December.....	440,060	644,400	32,000	5,900	20,800	1.6	538	542
January.....1958	393,280	573,900	36,000	4,500	18,500	1.4	479	540
February.....	445,800	3,331,800	1,810,000	10,000	119,000	8.0	2,780	2,770
March.....	693,300	3,504,300	1,270,000	30,300	113,000	8.5	2,930	1,870
April.....	1,067,800	4,551,900	455,000	74,400	152,000	11	3,800	1,580
May.....	1,022,400	2,473,000	99,300	70,100	79,800	6.0	2,060	896
June.....	1,005,900	2,747,500	136,000	56,200	91,600	6.6	2,290	1,010
July.....	1,268,900	11,304,900	923,000	60,700	365,000	27	9,440	3,300
August.....	1,179,000	6,472,500	869,000	66,300	209,000	16	5,400	2,030
September.....	976,700	2,461,400	203,000	54,700	82,000	5.9	2,050	933
Water Year 1958	10,149,040	42,288,300	1,810,000	4,500	116,000	102	35,300	1,540
October.....	1,000,800	2,343,400	90,700	57,500	75,600	5.7	1,960	867
November.....	529,100	973,600	90,800	12,300	32,500	2.3	813	682
December.....	373,410	435,800	22,200	6,200	14,100	1.1	364	432
Cal. Year 1958	9,956,390	41,174,000	1,810,000	4,500	113,000	99	34,400	1,530

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January.....1959	410,800	491,500	23,500	5,500	15,900	15,900	1.2	410	.....	443
February.....	483,600	672,800	62,000	16,900	24,000	24,000	1.6	562	.....	515
March.....	715,100	2,231,000	137,000	27,100	72,000	72,000	5.4	1,860	.....	1,160
April.....	991,100	3,270,000	272,000	61,300	109,000	109,000	7.9	2,730	.....	1,220
May.....	1,363,100	15,518,600	1,820,000	58,500	501,000	501,000	37	13,000	.....	4,220
June.....	1,139,000	11,807,000	2,050,000	149,000	354,000	354,000	28	9,860	.....	3,840
July.....	1,031,000	5,326,600	1,160,000	61,100	172,000	172,000	13	4,450	.....	1,910
August.....	1,159,000	5,396,900	926,000	66,300	174,000	174,000	13	4,500	.....	1,720
September.....	1,018,000	2,567,200	139,000	63,000	85,600	85,600	6.2	2,140	.....	934
Water Year 1959	10,214,010	51,034,900	2,050,000	5,500	140,000	140,000	123	42,600	.....	1,850
October.....	1,023,400	2,830,800	112,000	75,300	91,300	91,300	6.8	2,360	.....	1,020
November.....	576,760	1,324,100	106,000	6,570	44,100	44,100	3.2	1,110	.....	850
December.....	450,200	646,200	34,300	13,100	20,800	20,800	1.6	539	.....	532
Cal. Year 1959	10,361,060	52,083,200	2,050,000	5,500	143,000	143,000	126	43,500	.....	1,860
January.....1960	359,890	431,000	.....	.....	13,900	13,900	1.0	360	.....	444
February.....	466,200	446,000	.....	.....	15,400	15,400	1.1	372	.....	354
March.....	742,700	6,054,540	2,420,000	9,620	155,000	155,000	15	5,050	.....	3,020
April.....	2,449,700	20,176,300	2,800,000	61,700	673,000	673,000	49	16,800	.....	3,050
May.....	1,445,900	8,085,500	860,000	82,400	261,000	261,000	20	6,750	.....	2,070
June.....	1,289,900	10,238,600	1,930,000	93,800	341,000	341,000	25	8,550	.....	2,940
July.....	1,089,600	3,258,600	343,000	71,900	105,000	105,000	7.9	2,720	.....	1,110
August.....	1,167,600	6,219,800	768,000	69,300	201,000	201,000	15	5,190	.....	1,970
September.....	1,027,700	2,797,100	256,000	62,100	93,200	93,200	6.7	2,330	.....	1,010
Water Year 1960	12,089,550	62,508,540	2,800,000	.....	171,000	171,000	151	52,200	.....	1,910
October.....	1,013,800	2,181,300	103,000	48,500	70,400	70,400	5.3	1,820	.....	797
November.....	832,400	2,093,500	120,000	19,500	69,800	69,800	5.1	1,750	.....	931
December.....	432,800	563,000	.....	.....	18,200	18,200	1.4	470	.....	482
Cal. Year 1960	12,318,190	62,545,240	2,800,000	.....	171,000	171,000	151	52,200	.....	1,880
January.....1961	418,190	425,000	.....	.....	13,700	13,700	1.0	355	.....	376
February.....	468,700	762,000	.....	.....	27,200	27,200	1.8	636	.....	602
March.....	991,700	6,376,400	358,000	74,200	206,000	206,000	15	5,320	.....	2,380
April.....	885,100	3,313,200	190,000	72,100	110,000	110,000	8.0	2,770	.....	1,250
May.....	1,050,900	2,818,000	126,000	63,100	90,900	90,900	6.8	2,350	.....	993
June.....	1,077,000	6,254,500	807,000	82,000	268,000	268,000	15	5,220	.....	2,150
July.....	1,015,700	3,660,200	418,000	54,800	118,000	118,000	8.8	3,060	.....	1,330
August.....	1,019,700	3,524,000	438,000	50,100	114,000	114,000	8.5	2,940	.....	1,280
September.....	983,500	2,727,900	299,000	56,000	90,900	90,900	6.6	2,280	.....	1,030

Mnth	Water discharge (cfs-days)	Suspended sediment				Tons per sq mi	Acres-foot	Concentration (mg/l)	
		Load (tons)	Daily loads (tons)	Maximum	Mean			Maximum daily	Weighted mean
Water Year 1961	10,289,490	34,699,500	807,000	807,000	95,100	29,000	84	1,250	
October.....	694,900	1,853,700	218,000	17,800	59,800	1,550	4.5	988	
November.....	431,400	526,900	24,400	11,500	17,600	440	1.3	452	
December.....	383,600	323,000	.....	.....	10,400	270	.78	312
Cal. Year 1961	9,520,590	32,565,300	807,000	807,000	89,200	27,200	79	1,270	
January.....1962	403,800	389,000	.....	.....	12,500	325	.94	357
February.....	485,800	610,000	.....	.....	21,800	509	1.5	465
March.....	1,301,100	14,359,000	2,630,000	10,000	463,000	12,000	35	4,090	
April.....	1,800,300	8,666,300	1,710,000	70,800	289,000	7,230	21	1,780	
May.....	1,176,300	7,102,000	1,670,000	46,300	229,000	5,930	17	2,240	
June.....	1,631,900	15,229,000	2,370,000	162,000	568,000	12,700	37	3,460	
July.....	1,503,600	7,361,000	577,000	130,000	237,000	6,140	18	1,810	
August.....	1,067,200	4,256,900	759,000	68,900	139,000	3,590	10	1,490	
September.....	1,058,000	5,293,500	1,200,000	82,300	176,000	4,420	13	1,850	
Water Year 1962	11,938,100	66,010,300	2,630,000	.....	181,000	55,100	159	2,050
October.....	1,019,300	2,944,400	133,000	68,200	95,000	2,460	7.1	1,070	
November.....	936,800	2,158,100	90,300	21,400	73,300	1,830	5.3	869	
December.....	421,900	413,000	.....	.....	13,300	345	1.00	363
Cal. Year 1962	12,806,000	68,862,200	2,630,000	.....	189,000	57,500	166	1,990
January.....1963	386,600	407,000	.....	.....	13,100	340	.98	390
February.....	393,000	430,000	.....	.....	15,400	359	1.0	405
March.....	837,800	4,122,900	369,000	18,100	133,000	3,440	9.9	1,820	
April.....	1,005,100	3,143,500	190,000	80,200	105,000	2,620	7.6	1,160	
May.....	1,031,900	3,466,000	216,000	60,700	112,000	2,890	8.4	1,240	
June.....	1,179,500	12,339,100	2,290,000	62,000	411,000	10,300	30	3,870	
July.....	1,031,200	2,636,900	125,000	67,400	85,100	2,200	6.4	947	
August.....	1,040,100	2,548,800	293,000	45,500	82,200	2,130	6.2	908	
September.....	991,900	2,109,100	110,000	45,700	70,300	1,760	5.1	788	
Water Year 1963	10,275,100	36,758,800	2,290,000	.....	101,000	30,700	89	1,320
October.....	1,026,700	2,384,500	102,000	57,600	76,900	1,990	5.8	860	
November.....	952,300	1,874,400	87,200	26,900	62,500	1,560	4.5	729	
December.....	340,500	404,000	.....	.....	13,000	337	.97	439
Cal. Year 1963	10,216,600	35,866,600	2,290,000	.....	98,300	29,900	87	1,300
January.....1964	375,500	447,000	.....	.....	14,400	373	1.1	441
February.....	417,500	540,000	.....	.....	18,600	451	1.3	479

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
March	596,500	1,328,400	121,000	12,400	42,900	1,110	3.2	1,110	825		
April	1,032,300	4,201,500	458,000	52,000	140,000	3,510	10	3,510	1,510		
May	1,167,900	13,944,900	3,050,000	48,800	450,000	11,600	34	11,600	4,420		
June	1,335,700	14,432,200	2,270,000	93,600	481,000	12,000	35	12,000	4,000		
July	1,060,300	4,634,200	414,000	46,300	149,000	3,870	11	3,870	1,620		
August	1,123,300	2,842,900	157,000	52,800	91,700	2,370	6.9	2,370	937		
September	1,021,100	2,532,100	149,000	51,200	84,400	2,110	6.1	2,110	918		
Water Year 1964	10,449,600	49,566,500	3,050,000	.....	135,000	41,400	120	41,400	1,760	
October	1,044,000	2,347,400	94,800	58,300	75,700	1,960	5.7	1,960	833		
November	975,300	1,558,000	89,100	21,600	65,300	1,630	4.7	1,630	744		
December	426,600	560,000	.....	.....	18,100	467	1.4	467	486
Cal. Year 1964	10,576,000	49,768,600	3,050,000	.....	136,000	41,500	120	41,500	1,740	
January	417,800	455,000	.....	.....	14,700	380	1.1	380	403
February	448,800	560,000	.....	.....	20,000	467	1.4	467	462
March	981,200	6,200,000	.....	.....	200,000	5,180	15	5,180	2,340
April	1,639,300	14,825,000	1,480,000	111,000	454,000	12,400	36	12,400	3,350		
May	1,406,900	17,056,000	2,520,000	50,500	550,000	14,200	41	14,200	4,490		
June	1,348,700	12,257,900	1,280,000	56,900	409,000	10,200	30	10,200	3,370		
July	1,248,300	8,568,300	1,060,000	79,500	289,000	7,490	22	7,490	2,660		
August	1,099,300	2,596,600	218,000	54,200	83,800	2,170	6.3	2,170	875		
September	1,354,700	6,209,000	390,000	113,000	207,000	5,180	15	5,180	1,700		
Water Year 1965	12,390,900	73,993,200	2,520,000	.....	203,000	61,800	179	61,800	2,210	
October	1,380,400	4,517,400	819,000	76,600	146,000	3,770	11	3,770	1,210		
November	1,139,500	2,142,400	87,600	46,500	71,400	1,790	5.2	1,790	696		
December	795,400	1,554,100	66,000	40,600	50,100	1,300	3.8	1,300	724		
Cal. Year 1965	13,260,300	77,341,700	2,520,000	.....	212,000	64,600	187	64,600	2,160	
January	663,800	670,000	.....	.....	21,600	559	1.6	559	374
February	937,900	1,800,000	.....	.....	64,300	1,500	4.3	1,500	711
March	987,900	2,630,600	133,000	25,700	84,900	2,200	6.3	2,200	986		
April	1,130,600	2,094,000	108,000	50,300	69,800	1,750	5.1	1,750	686		
May	1,109,200	3,451,400	768,000	45,200	113,000	2,910	8.4	2,910	1,170		
June	1,171,300	8,523,900	956,000	74,200	284,000	7,110	21	7,110	2,700		
July	1,148,900	3,788,800	386,000	42,700	122,000	3,160	9.1	3,160	1,220		
August	1,232,200	4,175,600	828,000	56,900	135,000	3,490	10	3,490	1,260		
September	1,072,300	1,897,800	81,400	49,100	63,300	1,580	4.6	1,580	655		
Water Year 1966	12,769,400	37,290,000	956,000	.....	102,000	31,100	90	31,100	1,080	

068C7CCC MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

Month	Water discharge (cfs-days)	Lead (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum daily			Maximum daily	Weighted mean
			Maximum	Minimum						
October.....	1,125,200	2,235,600	99,600	49,900	72,100	5.4	1,870	.....	736
November.....	1,064,500	2,050,400	83,500	33,000	68,300	4.9	1,710	.....	713
December.....	534,800	657,100	37,100	11,700	22,500	1.7	582	.....	483
Cal. Year 1966	12,178,600	34,059,200	956,000	.....	93,300	82	28,400	.....	1,040
January.....1967	423,800	642,590	34,600	9,560	20,700	1.6	536	.....	562
February.....	428,500	631,200	29,900	16,500	22,500	1.5	527	.....	546
March.....	804,500	1,909,100	123,000	20,900	61,600	4.6	1,590	.....	879
April.....	1,094,200	2,091,600	111,000	55,800	69,700	5.0	1,750	.....	708
May.....	1,133,700	2,065,000	102,000	45,900	66,600	5.0	1,720	.....	675
June.....	2,458,600	28,397,500	2,560,000	42,600	947,000	69	23,700	.....	4,280
July.....	1,304,800	4,023,400	202,000	76,600	130,000	9.7	3,360	.....	1,140
August.....	1,206,200	2,116,800	85,300	54,800	68,300	5.1	1,770	.....	650
September.....	1,128,600	1,652,400	64,700	46,000	55,100	4.0	1,380	.....	542
Water Year 1967	12,707,400	48,512,690	2,560,000	9,560	133,000	117	40,500	.....	1,410
October.....	1,185,600	2,154,300	89,700	63,400	70,800	5.3	1,830	.....	685
November.....	1,088,000	2,097,800	84,900	37,900	69,900	5.1	1,750	.....	714
December.....	650,800	836,900	35,600	12,600	27,000	2.0	699	.....	476
Cal. Year 1967	12,907,300	48,658,590	2,560,000	9,560	133,000	117	40,600	.....	1,400
January.....1968	479,500	510,000	.....	.....	16,500	1.2	426	.....	394
February.....	711,100	1,160,000	.....	.....	40,000	2.8	968	.....	604
March.....	898,200	1,458,300	76,600	27,600	48,300	3.6	1,250	.....	618
April.....	1,144,500	1,864,300	82,000	46,900	62,100	4.5	1,560	.....	603
May.....	1,149,600	1,456,500	60,500	37,500	47,000	3.5	1,220	.....	469
June.....	1,183,500	3,192,500	597,000	37,200	106,000	7.7	2,670	.....	999
July.....	1,162,700	3,773,100	282,000	43,400	122,000	9.1	3,150	.....	1,200
August.....	1,147,000	2,429,700	161,000	43,400	78,400	5.9	2,030	.....	785
September.....	1,052,900	1,353,700	65,900	36,500	46,500	3.4	1,160	.....	490
Water Year 1968	11,853,400	22,407,500	597,000	.....	61,200	54	18,700	.....	700
October.....	1,227,200	2,053,500	172,000	38,100	66,300	5.0	1,710	.....	620
November.....	1,150,700	2,316,500	94,600	53,900	77,200	5.6	1,930	.....	746
December.....	694,920	1,144,150	109,000	1,770	36,900	2.8	955	.....	610
Cal. Year 1968	12,001,820	22,793,050	597,000	.....	62,300	55	19,000	.....	703
January.....1969	559,500	580,000	.....	.....	18,700	1.4	484	.....	384
February.....	661,500	1,050,000	.....	.....	37,500	2.5	876	.....	588
March.....	1,350,000	10,093,400	1,270,000	56,800	326,000	24	8,420	.....	2,770
April.....	2,333,900	9,956,000	611,000	116,000	332,000	24	8,310	.....	1,580

06807000 MISSOURI RIVER AT NEERASKA CITY, NEERASKA--CONTINUED

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
May	1,592,900	3,145,300	121,000	80,800	101,000	7.6	2,630		731
June	1,479,300	5,515,400	759,000	60,300	184,000	13	4,600		1,380
July	1,630,400	3,587,300	219,000	62,000	116,000	8.7	2,990		815
August	1,724,200	4,054,900	235,000	77,200	131,000	9.8	3,380		871
September	1,701,900	3,170,100	136,000	69,700	106,000	7.6	2,650		690
Water Year 1969	16,106,420	46,666,950	1,270,000		128,000	113	39,000		1,070
October	1,635,000	2,802,000	108,000	74,500	90,400	6.8	2,340		635
November	1,388,100	4,747,600	215,000	99,600	158,000	11	3,960		1,270
December	854,200	1,760,800	120,000	30,900	56,800	4.2	1,470		763
Cal. Year 1969	16,910,900	48,462,800	1,270,000	30,900	133,000	117	40,500		1,060
January	571,700	993,670	65,800	9,770	19,200	1.4	496		385
February	819,300	1,623,400	172,000	23,300	58,000	3.9	1,360		734
March	1,138,500	3,455,000	234,000	58,300	111,000	8.3	2,880		1,120
April	1,281,900	2,952,700	138,000	42,800	58,400	7.1	2,460		853
May	1,239,100	2,609,900	274,000	37,500	84,200	6.3	2,180		780
June	1,284,000	3,238,600	284,000	50,600	168,000	7.8	2,700		934
July	1,322,000	1,901,300	76,200	50,100	61,300	4.6	1,590		533
August	1,415,800	3,030,600	224,000	48,700	97,800	7.3	2,530		793
September	1,339,400	2,433,200	131,000	49,800	81,100	5.9	2,030		673
Water Year 1970	14,289,000	31,548,970	284,000	9,770	86,400	76	26,300		818
October	1,480,700	3,407,100	146,000	58,900	110,000	8.2	2,840		852
November	1,439,800	2,924,200	133,000	74,800	97,500	7.1	2,440		752
December	859,500	1,972,100	85,200	37,100	63,600	4.8	1,650		850
Cal. Year 1970	14,191,700	30,541,970	284,000	9,770	83,700	74	25,500		797
January	524,200	640,460	41,800	6,210	20,700	1.5	535		453
February	1,181,100	4,503,800	763,000	17,600	53,700	3.6	1,260		472
March	1,655,600	8,808,600	1,610,000	74,000	284,000	21	7,350		1,970
April	1,414,300	3,535,800	313,000	73,400	118,000	8.5	2,950		926
May	1,875,700	11,383,600	1,900,000	79,300	367,000	27	9,500		2,250
June	2,235,000	12,399,500	1,500,000	64,800	413,000	30	10,400		2,050
July	1,775,800	3,795,600	395,000	54,600	122,000	9.2	3,170		792
August	1,553,300	1,789,500	80,300	43,500	57,700	4.3	1,490		4,270
September	1,501,100	1,543,500	64,600	36,700	51,500	3.7	1,290		381
Water Year 1971	17,495,800	56,704,160	1,900,000	8,210	155,000	137	47,300		1,200
October	1,676,000	2,484,400	139,000	57,700	80,100	6.0	2,070		549
November	1,791,200	2,944,100	146,000	74,600	58,100	7.1	2,460		609

068C7000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

Mcnth	Water discharge (cfs-days)	Suspended sediment						Concentration (mg/l)	
		Load (tons)		Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
		Maximum	Mean	Maximum	Mean				
December.....	1,109,400	1,903,700	122,000	30,900	61,400	4.6	1,590	833	636
Cal. Year 1971	18,292,400	55,732,960	1,900,000	8,210	153,000	134	46,500	.....	11,300
January....1972	681,900	1,203,650	85,100	4,050	38,800	2.9	1,000	1,330	654
February.....	811,600	1,629,200	118,000	31,900	56,200	3.9	1,360	1,320	743
March.....	1,349,900	4,034,600	327,000	37,800	130,000	9.7	3,370	2,590	1,110
April.....	1,503,900	3,465,600	158,000	82,800	116,000	8.4	2,890	1,170	853
May.....	1,920,000	5,166,600	587,000	72,800	167,000	12	4,310	2,690	997
June.....	1,615,800	4,489,700	459,000	46,600	150,000	11	3,750	2,880	1,030
July.....	1,660,900	4,427,600	360,000	65,000	143,000	11	3,700	2,170	987
August.....	1,677,800	2,900,300	146,000	65,400	93,600	7.0	2,420	905	640
September.....	1,662,600	4,316,500	512,000	62,800	144,000	10	3,600	2,530	962
Water Year 1972	17,461,000	38,965,550	587,000	4,050	166,000	94	32,500	2,880	827
October.....	1,725,300	3,410,600	151,000	81,900	110,000	8.2	2,850	974	732
November.....	1,780,900	6,134,300	630,000	80,000	204,000	15	5,120	3,480	1,280
December.....	992,500	1,855,200	252,000	32,600	61,300	4.6	1,590	1,780	709
Cal. Year 1972	17,383,100	43,077,850	630,000	4,050	118,000	104	36,000	3,480	918
January....1973	1,116,900	3,255,600	264,000	34,000	165,000	7.9	2,720	1,890	1,080
February.....	1,030,100	2,764,800	278,000	43,200	98,700	6.7	2,310	1,940	994
March.....	1,861,400	9,674,800	918,000	78,800	312,000	23	8,080	4,660	1,930
April.....	1,358,200	5,232,700	678,000	79,500	174,000	13	4,370	3,770	1,430
May.....	1,567,900	5,491,000	637,000	61,600	177,000	13	4,580	2,920	1,300
June.....	1,513,100	4,146,900	350,000	50,600	138,000	10	3,460	2,140	1,020
July.....	1,298,300	3,543,500	438,000	24,400	114,000	8.6	2,960	2,660	1,010
August.....	1,123,400	1,491,700	89,900	26,800	48,100	3.6	1,250	858	492
September.....	1,206,700	2,696,200	439,000	34,600	89,900	6.5	2,250	2,550	828
Water Year 1973	16,574,700	49,741,300	918,000	24,400	136,000	120	41,500	4,660	1,110

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis			
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters					
Oct. 1, 1971	49600	20.0	431	57700	27	40	75	98	100	S
Oct. 15,	52500	15.0	599	84900	20	40	75	98	100	VPWC
Nov. 2,	60600	9.0	902	148000	20					S
Nov. 15,	56800	11.0	492	75500	28	51	81	93	100	VPWC
Nov. 26,	61100	5.0	636	105000	22					S
Dec. 9,	44800	1.5	644	77900	23					S
Dec. 16,	27300	1.0	481	35500	20	37	97	100		VPWC
Feb. 18, 1972	28900	.5	1330	104000	10	19	55	81	100	VPWC
Feb. 28,	33000	4.5	504	44900	39	55	98	100		VPWC
Mar. 8,	47800	1.5	2770	357000	69					S
Mar. 10,	38100	3.5	948	97500	55					S
Mar. 14,	44000	4.0	1170	139000	56					S
Mar. 22,	47800	7.0	1020	132000	45					S
Mar. 23,	50000	6.5	939	127000	40	54	99	100		VPWC
Mar. 25,	48300	6.0	921	120000	34					S
Mar. 27,	47300	6.0	951	121000	32					S
Mar. 29,	47600	5.0	898	115000	26					S
Mar. 30,	48100	5.0	1190	155000	22					S
Apr. 10,	51600	8.0	1010	141000	18	30	84	89	100	VPWC
Apr. 24,	49200	10.5	819	109000	21					S
May 1,	56700	11.5	646	98900	46					S
May 2,	85600	11.5	3480	804000	72	80	98	100		VPWC
May 5,	61300	14.0	1020	169000	71					S
May 8,	69400	11.5	1310	245000	64	75	93	100		VPWC
May 12,	55600	13.5	904	136000	37					S
May 15,	67200	14.0	1230	223000	46	57	78	92	100	VPWC
May 18,	57200	19.5	567	87600	51					S
May 22,	53200	21.0	502	72100	45					S
May 30,	61200	20.0	650	107000	58					S
June 2,	55300	21.5	472	70500	55					S
June 6,	57400	23.5	974	151000	74					S
June 9,	61500	24.0	990	164000	70	79	99	100		VPWC
June 12,	57900	23.0	801	125000	53					S
June 16,	52200	22.0	2570	362000	85					S
June 19,	55600	21.5	1910	287000	85	93	99	100		VPWC
June 22,	52200	23.0	360	50700	53					S
June 29,	49400	23.0	581	77500	26	43	77	99	100	VPWC

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Percent finer than indicated size, in millimeters	Methods of analysis			
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Concentration (mg/l)					
July 5,.....	46700	21.0	1540	194000	15	25	87	99	100	V
July 21,.....	51100	26.0	877	121000	77					S
Aug. 11,.....	54300	23.5	734	108000	26	44	96	100		V
Aug. 24,.....	52500	24.0	536	76000	26					S
Sept. 8,.....	51900	26.0	424	59400	32	54	97	99	100	V
Sept. 18,.....	55100	28.0	431	64100	47					S
Oct. 27, 1972	58300	10.0	725	114000	27	41	90	100		V
Oct. 30,.....	58000	10.0	845	132000	23					S
Nov. 10,.....	59900	7.0	996	161000	27	41	96	100		S
Nov. 20,.....	63500	4.0	699	120000	26					V
Dec. 1,.....	47200	4.0	897	114000	18					S
Dec. 20,.....	26200	1.0	577	40800	21	36	100			V
Jan. 16, 1973	32800	2.5	726	64300	36	47	84	100		V
Jan. 26,.....	37500	.5	1020	103000	39					S
Feb. 6,.....	36600	2.0	776	76700	42	54	96	100		V
Feb. 27,.....	45500	2.0	1440	177000	51					S
Mar. 13,.....	59200	7.0	1170	187000	32	37	40	50	68	VPWC
Mar. 26,.....	64200	9.5	1900	329000	74					S
Apr. 2,.....	57100	7.0	1710	264000	23	25	27	37	52	VPWC
Apr. 20,.....	42600	14.5	1180	136000	78					S
May 4,.....	44700	12.5	840	101000	45					S
May 29,.....	80000	16.5	2390	516000	33	39	41	47	57	VPWC
June 1,.....	58400	20.0	1020	161000	25	30	33	38	46	S
June 22,.....	46300	21.0	1410	176000	25	30	33	38	46	VPWC
July 6,.....	41800	26.0	1100	124000	34	38	43	49	66	VPWC
July 27,.....	38100	24.5	641	65900	64					S
Aug. 3,.....	36700	24.0	700	69400	38	55	98	100		V
Aug. 23,.....	36300	26.5	398	39000	48					S
Sept. 3,.....	35500	24.0	390	37400	46	66	99	100		V
Sept. 17,.....	40300	16.5	711	77400	28					S

068C7000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
July 21, 1972	5110C	26.0	3		3	88	98	100							V
Aug. 24,	52500	24.0	3		2	26	47	82	85	91	93				SV
Sept. 22,	54000	20.0	3		3	62	96	100							V
Oct. 27, 1972	5830C	10.0	3		0	5	27	84	90	98	100				SV
Nov. 20,	63500	4.0	3	0	1	15	34	90	94	100					SV
Dec. 20,	2620C	1.0	3	0	2	57	71	88	97	97	100				SV
Jan. 16, 1973	32800	2.5	3		0	1	15	64	69	86	100				SV
Feb. 6,	36600	2.0	3	0	1	2	14	53	61	87	100				SV
Mar. 13,	5920C	7.0	3		1	72	100								V
Apr. 6,	46100	7.0	3	0	1	17	47	74	78	84	93				SV
June 1,	58400	20.0	3	0	1	33	64	82	92	97	100				SV
July 13,	39800	27.5	3	0	2	32	46	70	76	90	100				SV
Aug. 3,	36700	24.0	3	0	3	39	59	83	91	98	100				SV
Sept. 3,	35500	24.0	3	0	1	24	46	81	86	95	100				SV

NISHMABOTNA RIVER BASIN
06808000 MULE CREEK NEAR HALVERN, IOWA

LOCATION.--Lat 40°56'36", long 95°35'42", in NE 1/4 NE 1/4 sec.19, T.71 N., R.41 W., Mills County, 170 ft (52 m) downstream from gaging station, at upstream end of culvert on county highway L63, 0.2 mi (0.3 km) downstream from unnamed tributary, 1.8 mi (2.9 km) upstream from mouth, and 4.3 mi (6.9 km) south of Halvern.

DRAINAGE AREA.--10.6 mi² (27.5 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--15 years (1954-69), 19,360 tons (17,560 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 14,000 mg/l June 17, 1957, Apr. 5, 1965; no flow for Jan. 20-25, 1956.

Sediment discharge: Maximum daily, 22,000 tons (20,000 tonnes) Aug. 21, 1954; minimum daily, 0 ton (0.0 tonne) on Jan. 20-25, 1956, Oct. 2, 3, 1968.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water Year	H.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1955	1401	6,000	*	Mar. 2	2,000	<0.05	Mar. 2	many days	
1956	1451	9,290	no flow	Aug. 1	16,200	0	July 15	Jan. 20-25	
1957	1521	14,100	*	June 17	14,400	<.05	May 29	many days	
1958	1572	7,110	*	Apr. 4	10,000	<.05	July 30	many days	
1959	1643	10,100	*	May 29	13,000	<.05	May 18	many days	
1960	1743	7,040	6	June 20	4,200	<.05	Aug. 28	Oct. 27	
1961	1883	6,200	13	Sept. 12	2,760	-1	June 27	several days	
1962	1943	9,880	3	May 28	8,330	<.05	May 28	many days	
1963	1949	7,400	6	Mar. 4	960	<.05	Mar. 4	several days	
1964	1956	9,600	2	May 26	9,100	<.05	May 26	many days	
1965	1963	14,100	1	Apr. 5	19,000	<.05	May 22	many days	

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED
ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Daily suspended sediment			
		Concentrations (mg/l)		Loads (tons)	
		Max.	Min.	Date	Date
1966	1993	4,090	2	Sept. 13	180 May 15
1967	2013	10,600	1	Oct. 10	10,600 June 7
1968	2095	2,200	1	Sept. 26	50 Aug. 16
1969	2145	8,300	3	Oct. 2, 13, Nov. 20	949 July 18

a July to September
* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
			t	t	t				
July.....1954	22.01	10.8	.....	.....	1.0	.....	.....	182
August.....	503.69	31,900.4	22,000	.....	3,010	27	11,100	23,500
September.....	65.1	63.6	50	.....	6.0	.....	.....	362
October.....	74.8	130	110	.....	12	.....	3,400	644
November.....	62	3.6	.....	.....	.34	0	.....	22
December.....	39.1	4.3	.....	.....	.41	0	.....	41
January.....1955	30	1.6	.....	.....	.15	0	.....	20
February.....	137.8	65.9	18	.....	6.2	.....	272	177
March.....	215.2	4,036	2,000	.....	381	3.4	6,000	6,950
April.....	64.5	31.6	13	.....	3.0	.....	2,580	181
May.....	39.1	669.8	650	.....	63	.....	4,900	6,340
June.....	28.24	8.8	2.1	.....	.83	.....	330	115
July.....	4.85	2.1	.....	.....	.20	0	.....	160
August.....	4.87	1.6	1.0	.....	.15	0	.....	122
September.....	46.48	1,783.5	900	.....	168	1.5	.....	14,200
Water Year 1955	746.94	6,738.80	2,000	t	18	5.6	6,000	3,340	
October.....	4.33	.7	.....	.....	.02	0	.....	60
November.....	5.94	2.6	.....	.....	.25	0	.....	162

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
December.....	3.76	.9	t	t	.03	.08	0	.....	89
al. Year 1955	585.07	6,605.10	t	t	18	623	5.5	6,000	4,180
January.....1956	4.31	1.7	0	0	.05	.16	0	.....	146
February.....	11.16	.8	t	t	.03	.08	0	.....	27
March.....	28.79	2.6	t	t	.08	.25	0	.....	33
April.....	8.3	1.8	t	t	.06	.17	0	110	80
May.....	7.37	2.2	t	t	.07	.21	0	90	111
June.....	3.04	1.1	t	t	.04	.10	0	280	134
July.....	410.94	22,949.8	t	t	740	2,170	19	5,240	20,700
August.....	221.38	4,895.8	t	t	158	462	4.1	9,290	8,190
September.....	12.8	8.8	t	t	.29	.83	.01	480	255
Water Year 1956	722.12	27,868.80	0	0	76	2,630	23	9,290	14,300
October.....	8.87	.2	t	t	.10	.02	0	36	8
November.....	26.74	4.6	t	t	.15	.43	0	.....	64
December.....	16.22	.9	t	t	.03	.08	0	.....	21
al. Year 1956	759.92	27,870.30	0	0	76	2,630	23	9,290	13,600
January.....1957	8.4	.6	t	t	.02	.06	0	.....	27
February.....	10.78	.6	t	t	.02	.06	0	.....	21
March.....	39.88	69.2	t	t	2.2	6.5	.06	1,400	643
April.....	46.72	65.6	t	t	2.2	6.2	.05	2,300	520
May.....	298.84	18,632.3	t	t	601	1,760	16	8,970	23,100
June.....	366.01	17,178.7	t	t	573	1,620	14	14,100	17,400
July.....	168.02	3,119.3	t	t	101	294	2.6	3,780	6,880
August.....	22.66	16.8	t	t	.54	1.6	.01	800	275
September.....	33.46	117.4	t	t	3.9	11	.10	1,900	1,300
Water Year 1957	1,046.60	39,206.20	t	t	107	3,700	33	14,100	13,900
October.....	45.61	54.6	t	t	1.8	5.2	.05	460	443
November.....	49.35	15.2	t	t	.51	1.4	.01	200	114
December.....	29.42	5	t	t	.16	.47	0	190	63
Cal. Year 1957	1,119.15	39,275.30	t	t	108	3,710	33	14,100	13,000
January.....1958	25.66	1.8	t	t	.10	.17	0	60	26
February.....	37.76	74.7	t	t	2.7	7.0	.06	1,500	733
March.....	66.1	39.2	t	t	1.3	3.7	.03	650	220
April.....	63.1	388.2	t	t	13	37	.32	7,110	2,280
May.....	33.49	3.8	t	t	.12	.36	0	86	42
June.....	20.37	2	t	t	.07	.19	0	46	36

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)	Mean	Maximum	Minimum	t			Maximum daily	Weighted mean
July.....	534.41	11,993.5	10,000	387	1,130	10	7,000	8,310			
August.....	98.2	142.9	50	4.6	13	0	1,200	539			
September.....	157.6	1,226.9	600	41	116	1.0	2,200	2,880			
Water Year 1958	1,161.07	13,947.80	10,000	38	1,320	12	7,110	4,450			
October.....	45.6	5.5	3.6	.18	.52	0	320	45			
November.....	37.03	2.5	.40	.08	.24	0	51	25			
December.....	31.06	3.7	.35	.12	.35	0	63	44			
Cal. Year 1958	1,150.38	13,884.70	10,000	38	1,310	12	7,110	4,470			
January.....1959	28.43	2.1	.07	.20	61	0	48	27			
February.....	138.16	642.4	320	23	136	1.2	3,800	1,720			
March.....	184.9	1,441.9	1,200	47	136	1.2	8,480	2,890			
April.....	108.3	76.8	16	2.6	7.2	.06	1,000	263			
May.....	846.7	30,848.3	13,000	995	2,910	26	10,100	13,500			
June.....	140.3	152.3	38	5.1	14	.13	1,300	402			
July.....	78.6	17.8	2.8	.57	1.7	.01	270	84			
August.....	171.5	2,090.4	1,100	67	197	1.7	7,900	4,510			
September.....	148.7	1,497.9	1,200	50	141	1.3	3,400	3,730			
Water Year 1959	1,959.28	36,781.60	13,000	101	3,470	31	10,100	6,950			
October.....	110.4	26.6	10	.86	2.5	.02	340	89			
November.....	85.1	4.8	3.0	.16	.45	0	54	21			
December.....	81.2	9	.70	.29	.85	.01	67	41			
Cal. Year 1959	2,122.29	36,810.30	13,000	101	3,470	31	10,100	6,420			
January.....1960	95.9	62.2	36	2.0	5.9	.05	1,700	240			
February.....	108.8	58.9	15	2.0	5.6	.05	1,700	201			
March.....	249.4	1,567.3	758	51	148	1.3	4,860	2,330			
April.....	381.9	1,287	232	43	121	1.1	3,300	1,250			
May.....	258.7	1,159.5	912	37	109	.97	6,480	1,660			
June.....	269.7	2,410.8	1,680	80	227	2.0	7,040	3,310			
July.....	146.4	66.2	10	2.1	6.2	.06	600	167			
August.....	379.8	7,050.1	4,200	227	665	5.9	4,910	6,880			
September.....	303.3	5,173.8	3,780	172	488	4.3	6,740	6,320			
Water Year 1960	2,470.60	18,876.20	4,200	52	1,780	16	7,040	2,830			
October.....	172.6	142.6	104	4.6	13	.12	1,220	306			
November.....	135.1	18.6	1.3	.62	1.8	.02	100	51			
December.....	110.7	175	1.4	5.6	17	.15	77	585			

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)					
			Maximum	Minimum			Mean	Maximum daily	Weighted mean			
1. Year 1960	2,612.30	19,172.00	4,200	.10	52	1,810	16	7,040	2,720			
January...1961	94.7	12.9	.60	.30	.42	1.2	.01	75	51			
February.....	122.7	38	5.2	.10	1.0	3.6	.03	280	115			
March.....	284.4	1,261.5	471	.90	41	119	1.1	3,310	1,640			
April.....	223.6	441.5	144	1.0	15	42	.37	2,900	731			
May.....	194.4	289.4	128	.40	9.3	27	.24	2,180	551			
June.....	259.5	3,415	2,760	1.0	114	322	2.9	5,410	4,870			
July.....	110.2	28.1	3.5	.20	.91	2.7	.02	260	94			
August.....	115.6	286.8	145	.10	9.3	27	.24	2,900	919			
September.....	257.9	2,469.9	1,240	.10	82	233	2.1	6,200	3,550			
Water Year 1961	2,081.40	8,579.30	2,760	.10	24	809	7.2	6,200	1,530			
October.....	150.6	192	6.3	.10	6.2	18	.16	245	472			
November.....	177.3	116.8	82	.10	3.9	11	.10	1,130	244			
December.....	154.3	63.3	3.1	.40	2.0	6.0	.05	275	152			
Cal. Year 1961	2,145.20	8,615.20	2,760	.10	24	813	7.2	6,200	1,490			
January...1962	139.9	40.6	4.5	.20	1.3	3.8	.03	320	107			
February.....	248.8	699.8	356	.60	25	66	.58	4,000	1,040			
March.....	339.2	943.5	204	2.2	30	89	.79	2,900	1,030			
April.....	214.8	123.5	12	.80	4.1	12	.10	450	213			
May.....	339.7	9,057.8	8,330	.10	292	855	7.6	9,880	9,880			
June.....	238	1,832.6	1,520	.20	61	173	1.5	5,660	2,850			
July.....	196.2	1,387.7	802	.20	45	131	1.2	5,100	2,620			
August.....	91.3	166.8	164	t	5.4	16	.14	2,050	677			
September.....	99.1	35	15	t	1.2	3.3	.03	525	131			
Water Year 1962	2,389.20	14,659.40	8,330	t	40	1,380	12	9,880	2,270			
October.....	112.3	71.4	64	t	2.3	6.7	.06	1,000	235			
November.....	91.4	7.8	3.0	.10	.26	.74	.01	170	32			
December.....	81.1	3.9	.60	t	.13	.37	0	42	18			
Cal. Year 1962	2,191.80	14,370.40	8,330	t	39	1,360	12	9,880	2,430			
January...1963	66.4	3.5	.20	t	.11	.33	0	48	20			
February.....	91.2	91	45	t	3.0	8.6	.08	830	370			
March.....	323.8	3,148.5	960	.30	102	297	2.6	7,400	3,600			
April.....	92.5	32.6	9.0	.10	1.1	3.1	.03	420	131			
May.....	135.4	1,075.3	670	.20	35	101	.90	4,600	2,940			
June.....	72.4	82.7	63	.10	2.8	7.8	.07	4,000	423			
July.....	53.5	37	30	t	1.2	3.5	.03	1,000	256			
August.....	39.8	6	2.0	t	.19	.57	.01	230	56			

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
September.....	140.1	1,236.1	660	t	41	117	1.0	2,300	3,270	
Water Year 1963	1,299.90	5,795.80	960	t	16	547	4.8	7,400	1,650	
October.....	54.9	1.7	.10	t	.05	.16	0	19	12	
November.....	48.3	3	.30	t	.10	.28	0	82	23	
December.....	27.5	14.4	4.0	t	.46	1.4	.01	2,000	194	
Cal. Year 1963	1,145.80	5,731.80	960	t	16	541	4.8	7,400	1,850	
January.....1964	35.2	2.2	.20	t	.07	.21	0	45	23	
February.....	34.5	1.6	.10	t	.06	.15	0	45	17	
March.....	51.2	9.1	3.0	t	.29	.86	.01	220	66	
April.....	113.3	771.2	560	.10	26	73	.64	5,300	2,520	
May.....	262	9,159.6	9,100	.10	295	864	7.6	9,600	12,900	
June.....	486.6	7,148.6	4,800	.10	238	674	6.0	7,500	5,440	
July.....	118.1	498.3	460	.10	16	47	.42	6,800	1,560	
August.....	60.4	4.8	1.0	t	.15	.45	0	110	29	
September.....	99.8	45.9	24	t	1.5	4.3	.04	.....	170
Water Year 1964	1,391.80	17,660.40	9,100	t	48	1,670	15	9,600	4,700	
October.....	48.8	1.3	.10	t	.04	.12	0	28	10	
November.....	90.4	5	1.5	t	.17	.47	0	84	21	
December.....	92.5	4.8	.80	t	.15	.45	0	44	19	
Cal. Year 1964	1,492.80	17,652.40	9,100	t	48	1,670	15	9,600	4,380	
January.....1965	53.3	2.3	.20	t	.07	.22	0	55	16	
February.....	355	4,286.8	1,900	t	153	404	3.6	3,500	4,470	
March.....	576.2	14,469.1	14,000	.70	467	1,370	12	7,700	9,300	
April.....	99.1	489.3	260	.20	16	46	.41	14,100	1,830	
May.....	606.6	19,326.5	19,000	.10	623	1,820	16	7,900	11,800	
June.....	293.9	2,543.9	2,000	.20	85	240	2.1	9,020	3,210	
July.....	461.2	8,889.3	5,700	.90	287	839	7.4	10,100	7,140	
August.....	172.5	2,631.2	2,600	.20	85	248	2.2	2,600	5,650	
September.....	313.2	5,386.8	1,900	.30	180	508	4.5	10,100	6,370	
Water Year 1965	3,162.70	58,036.30	19,000	t	159	5,480	48	14,100	6,800	
October.....	145	10	3.1	.10	.32	.94	.01	140	26	
November.....	125.4	6.4	1.7	.10	.21	.60	.01	90	19	
December.....	107.5	15.9	2.2	.10	.51	1.5	.01	160	55	
Cal. Year 1965	3,308.90	58,057.50	19,000	t	159	5,480	48	14,100	6,500	

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
January...1966	76.3	16.7	3.3	.10	.54	1.6	.01	220	81
February.....	70	36.3	13	.20	1.3	3.4	.03	900	192
March.....	95.5	68.8	7.9	.60	2.2	6.5	.06	600	267
April.....	96.2	15.6	3.1	.10	.52	1.5	.01	220	60
May.....	92.7	261.6	180	t	8.4	25	.22	4,090	1,050
June.....	71.4	163.4	110	.10	5.4	15	.14	4,000	848
July.....	46.4	8.2	2.3	t	.26	.77	.01	400	66
August.....	37.9	11.5	5.6	t	.37	1.1	.01	530	112
September.....	47.6	2	.80	t	.07	.19	0	110	16
Water Year 1966	1,011.90	616.40	180	t	1.7	58	.51	4,090	226
October.....	36.3	.9	.30	t	.03	.08	0	95	9
November.....	41.7	1.2	.10	t	.04	.11	0	27	11
December.....	41.2	2.2	.20	t	.07	.21	0	24	20
Cal. Year 1966	753.20	588.40	180	t	1.6	56	.49	4,090	289
January...1967	51	5.2	1.8	t	.17	.49	0	260	38
February.....	51	9.5	3.8	t	.34	.90	.01	560	69
March.....	50.4	30.6	23	t	.99	2.9	.03	1,450	225
April.....	49.7	30.7	15	t	1.0	2.9	.03	1,050	229
May.....	37.9	24	12	t	.77	2.3	.02	700	235
June.....	941.6	37,275	10,600	.40	1,240	3,520	31	10,600	14,700
July.....	105.8	14.7	1.2	.20	.47	1.4	.01	130	52
August.....	67.4	5.2	.60	t	.17	.49	0	81	29
September.....	63.5	12.8	6.3	t	.43	1.2	.01	730	75
Water Year 1967	1,537.50	37,412.00	10,600	t	102	3,530	31	10,600	9,010
October.....	50.8	4.8	2.9	t	.15	.45	0	190	35
November.....	49.6	2.9	.20	t	.10	.27	0	41	22
December.....	54.2	2.5	.20	t	.08	.24	0	33	17
Cal. Year 1967	1,572.90	37,417.90	10,600	t	103	3,530	31	10,600	8,810
January...1968	48.6	4.7	.50	t	.15	.44	0	80	36
February.....	52.7	2.8	.20	t	.10	.26	0	39	20
March.....	59.6	4.9	.50	.10	.16	.46	0	68	30
April.....	64.5	10.5	4.1	t	.35	.99	.01	240	60
May.....	47	6.7	1.9	t	.22	.63	.01	230	53
June.....	19.05	1.4	.20	t	.05	.13	0	57	27
July.....	13.71	3.9	3.2	t	.13	.37	0	300	105
August.....	43.86	65	50	t	2.1	6.1	.05	2,200	549
September.....	19.3	.6	.30	t	.02	.06	0	140	12

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment										Concentration (mg/l)	
			Maximum		Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	Maximum daily	Weighted mean	
			Minimum	t	Minimum	t								
Water Year 1968	522.92	110.70	50		.30	10		.09		2,200		78		
October.....	85.3	284.63	256	0	9.2	27		.24		1,060		1,240		
November.....	58.8	4.09	.86	.01	.14	.39	0			100		26		
December.....	56.9	4	.76	.03	.13	.38	0			44		26		
Cal. Year 1968	569.32	393.22	256	0	1.1	37		.33		2,200		256		
January.....1969	80.5	12.16	4.8	.04	.39	1.1		.01		253		56		
February.....	244	1,519.59	826	.05	54	143		1.3		3,210		2,310		
March.....	132	191.19	64	.14	6.2	18		.16		1,200		536		
April.....	138.3	340.57	271	.16	11	32		.28		4,500		912		
May.....	164.3	651.95	583	.05	21	62		.54		8,300		1,470		
June.....	127.5	35.12	13	.16	1.2	3.3		.03		500		102		
July.....	296	993	949	.29	32	94		.83		2,360		1,240		
August.....	128.1	407.6	394	.08	13	38		.34		2,360		1,180		
September.....	54.6	2.95	.55	.04	.10	.28	0			45		20		
Water Year 1969	1,566.30	4,446.85	949	0	12	420		3.7		8,300		1,050		

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; W, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Methods of analysis					
Mar. 1, 1955	322	1.0	9940	8640	28	48	98	99	100	100	SPWC
May 9,.....	50	21.0	38200	5160	31	59	97	98	99	100	SPWC
July 11, 1956	385	24.0	32900	34200	38	60	99	99	100	100	SPWC
July 15,.....	1990		36800	198000	31	52	94	98	99	100	SPWC
July 31,.....	227		30600	18800	31	54	96	99	100	100	SPWC
May 29, 1957	763	17.0	20300	41800	31	53	96	99	100	100	SPWC
June 7,.....	437		26200	30900	32	50	86	97	99	100	SPWC
June 17,.....	9.7	18.0	15600	409	30	44	80	97	99	100	SPWC
July 1,.....	678		19000	34800	28	48	95	99	100	100	SPWC
Sept. 5,.....	9.7	16.5	7520	197	33	71	99	99	99	100	SPWC
July 10, 1958	5.3	19.0	1040	15	58	83	99	100	100	100	SPWC
July 17,.....	13	15.5	7130	250	45	72	98	99	100	100	SPWC
July 30,.....	1060	22.0	10200	29200	33	52	98	100	100	100	SPWC
July 30,.....	1060	22.0	10200	29200	19	44					SPN
Aug. 6,.....	21	22.0	1300	74	47	69	99	100	100	100	SPWC
Sept. 5,.....	16	26.5	978	42	45	69	98	100	100	100	SPWC
Sept. 5,.....	222	21.0	9190	5510	31	48	99	100	100	100	SPWC
Sept. 6,.....	57	21.5	2280	351	28	49	98	99	99	100	SPWC
Sept. 14,.....	178	18.0	3310	1590	39	57	98	99	100	100	SPWC
Sept. 14,.....	47	18.0	4930	626	36	53	97	99	99	100	SPWC
Sept. 14,.....	49	20.0	2760	365	38	57	98	100	100	100	SPWC
Sept. 14,.....	40	20.0	2060	222	41	58	99	100	100	100	SPWC
Sept. 23,.....	30	20.0	3710	301	45	63	99	100	100	100	SPWC
Oct. 6, 1958	4.9	15.5	2430	32	61	86	100				SPWC
Feb. 25, 1959	100	1.0	11600	3130	22	39	99	100	100	100	SPWC
May 2,.....	293	7.0	21300	16900	30	50	99	100	100	100	SPWC
May 2,.....	293	7.0	21300	16900	20	46					SPN
May 3,.....	332	7.0	23400	21000	31	52	99	100	100	100	SPWC
May 3,.....	71	19.0	10500	2010	26	44	99	100	100	100	SPWC
May 4,.....	18	17.0	13900	676	43	66	100				SPWC
May 6,.....	126	19.0	11300	3840	23	41	92	98	100	100	SPWC
May 9,.....	122	16.5	26700	8790	25	42	99	100	100	100	SPWC
May 18,.....	1160	15.5	41000	128000	32	47	96	98	100	100	SPWC

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Percent finer than indicated size, in millimeters	Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Concentration (mg/l)		
May 18,.....	1160	15.5	41000	128000	19	41	SPN
May 28,.....	268	15.5	24800	17900	60	64	SPWC
May 30,.....	244	15.5	15700	10300	35	52	SPWC
Aug. 5,.....	40	25.5	7560	816	35	68	SPWC
Aug. 6,.....	57	26.5	6110	940	35	56	SPWC
Aug. 10,.....	6.0	19.0	3400	55	41	72	SPWC
Aug. 10,.....	74	19.0	13300	2660	28	56	SPWC
Mar. 29, 1960	59	.0	9390	1500	30	47	SPWC
May 21,.....	74	13.5	9990	2000	27	49	SPWC
May 21,.....	74	13.5	9990	2000	10	37	SPN
June 16,.....	25	19.0	3420	231	24	53	SPWC
June 16,.....	25	19.0	3420	231	6	46	SPN
June 20,.....	111	21.0	20100	6020	34	65	SPWC
June 30,.....	51	22.0	7700	1060	25	28	SPWC
Aug. 17,.....	10	21.0	1720	46	42	68	SPWC
Aug. 18,.....	126	22.0	7230	2460	36	62	SPWC
May 30, 1961	21.6	14.5	13500	787	42	64	SPWC
June 27,.....	65.5	21.0	25600	4530	40	62	SPWC
June 27,.....	65.5	21.0	25600	4530	23	54	SPN
June 27,.....	206	21.0	12800	7120	28	46	SPWC
June 27,.....	206	21.0	12800	7120	11	35	SPN
May 28, 1962	848	18.0	24000	55000	37	68	SPWC
May 28,.....	848	18.0	24000	55000	14	55	SPN
June 14, 1964	666	21.0	11100	20000	34	57	VPWC
June 14,.....	666	21.0	11100	20000	15	47	VPN
June 20,.....	*64	22.0	22200	24	31	50	VPWC
July 11,.....	*25	22.0	14100	30	35	51	VPWC
Feb. 27, 1965	189		10100	5150	17	39	SPWC
Apr. 5,.....	*7.0	.0	9600	21	25	36	VPWC
Apr. 8,.....	*16	8.5	4600	30	30	36	VPWC
Apr. 8,.....	*16	8.5	4600	10	18	24	VPN
July 1,.....	*73	21.0	25500	33	36	41	VPWC
Sept. 7,.....	205	21.0	9800	5420	22	40	VPWC

06808000 MULE CREEK NEAR MALVERN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Percent finer than indicated size, in millimeters	Methods of analysis					
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Concentration (mg/l)	Concentration (mg/l)							
June 5, 1967	757	18.5	13900	28400	40	44	52	61	82	99	100	VPWC	
June 9,	38	18.5	6940	712	40	48	53	60	87	99	100	VPWC	
June 11,	350	18.0	22700	21500	29	40	41	47	84	99	100	VPWC	
June 14,	23	19.0	13700	851	29	36	42	57	83	100	100	VPWC	
June 24,	151	18.5	16300	6650	29	38	42	58	90	99	100	VPWC	
May 7, 1968	2.6	12.0	570	4	57	59	65	81	89	100	100	BWC	
Aug. 16,	13	19.0	2450	86	66	79	88	95	98	100	100	SPWC	
Oct. 16, 1968	70	13.0	5930	1120	39	44	52	67	89	98	99	100	VPWC
Feb. 25, 1969	128	.0	6190	2140	22	25	28	40	74	95	99	100	SPWC
Apr. 4,	20	9.0	8980	485	35	38	46	60	87	92	99	100	VPWC
May 21,	18		25000	1240	46	58	69	80	96	100			SPWC
May 21,	18		25000	1240	25	41	56	78	92				VPW
July 18,	56	26.0	2530	383	57	65	67	78	87	98	100	100	SPWC
Aug. 20,	68	23.0	5680	1040	30	36	44	59	83	98	100	100	VPWC

*Daily mean discharge

NISHNABOTNA RIVER BASIN

068C08500 WEST NISHNABOTNA RIVER AT FANDOLPH, IOWA

LOCATION.--Lat 40°52'23", Long 95°34'48", in NE1/4 NE1/4 sec.17, T.70N., R.41W., Fremont County, on right bank on downstream side of bridge on State Highway 184, 0.3 mi (0.5 km) downstream from Deer Creek, 0.5 mi (0.8 km) west of Randolph, and 16.2 mi (26.1 km) upstream from confluence with East Nishnabotna River.

DRAINAGE AREA.--1,326 mi² (3,434 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
June 2, 1965	655	24.0	1000	1770
July 15,.....	406		230	252
Aug. 5,.....	294	24.5	160	127
Sept. 7,.....	5370	14.5	10100	146000
Oct. 6, 1965	990	15.5	710	1900
Nov. 3,.....	615	10.5	320	531
Dec. 8,.....	500	2.0	210	284
Jan. 5, 1966	464	1.0	310	388
Feb. 9,.....	600	1.0	630	1020
Mar. 9,.....	380	1.5	990	1020
Apr. 6,.....	446	10.5	610	735
May 3,.....	300	19.0	140	113
June 8,.....	354	18.5	760	726
July 21,.....	261	23.5	130	92
Aug. 10,.....	207	24.0	110	61
Sept. 4,.....	160	10.0	690	298
Oct. 5, 1966	113	9.5	17	5.2
Nov. 9,.....	126	1.0	52	18
Mar. 14, 1967	170	2.0	120	55
Apr. 5,.....	120	14.5	140	45
May 5,.....	115	8.5	36	11
May 31,.....	*201	12.0	330	
June 8,.....	9620	19.0	28200	732000
Aug. 1,.....	322	24.0	270	235
Aug. 17,.....	216	25.0	79	46
Oct. 3, 1967	136	19.0	25	9.2

068C8500 WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 1, 1968	105	21.0	52	15
June 3,.....	85	26.0	99	23
July 24,.....	64	26.0	94	16
Aug. 27,.....	157	24.0	190	81
Sept. 11,.....	31	18.0	15	1.3
Sept. 26,.....	54	21.0	27	3.9
Oct. 9, 1968	339	16.0	2940	2690
Nov. 20,.....	103	1.0	64	18
May 28, 1969	422	25.0	366	417
June 29,.....	573	21.0	7100	11000
Aug. 23,.....	189	19.0	80	41
Oct. 21, 1969	213		123	71
Oct. 23,.....	157	6.0	52	22
Nov. 20,.....	160	.5	96	41
Dec. 19,.....	112	.0	58	18
Feb. 4, 1970	174	.5	40	13
Feb. 20,.....	96	.0	45	12
Mar. 30,.....	243	6.0	305	200
Apr. 23,.....	227	12.0	137	84
May 19,.....	309	20.5	837	698
June 19,.....	284	22.0	1770	1360
June 24,.....	164		78	35
July 24,.....	86	26.5	46	11
Aug. 28,.....	73	26.0	424	84
Sept. 22,.....	64	17.5	23	4.0
Nov. 23, 1970	52	.0	54	7.6
Dec. 22,.....	81	.0	60	13
Jan. 25, 1971	65	.0	32	5.6
Feb. 26,.....	563	1.5	594	903
Mar. 24,.....	353	2.0	577	550
Apr. 23,.....	191	13.0	72	37
May 21,.....	665	16.0	1460	2620
June 25,.....	223	27.0	146	88
Aug. 26,.....	73	27.0	38	7.5
Sept. 23,.....	51	16.0	4	.60
Oct. 20, 1971	68	13.0	23	4.2
Dec. 20,.....	108	.0	47	14

068C8500 WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE #T/DAY (80155)
Jan. 20, 1972	82	.0	15	3.3
Mar. 23,	143	9.0	115	44
Apr. 20,	120	11.0	62	20
June 20,	942	20.0	3290	8370
July 19,	312	26.5	1310	1100
Aug. 25,	192	20.5	58	30
Sept. 12,	16000	22.0	6070	262000
Sept. 14,	18200	21.0	3470	171000
Oct. 6, 1972	595	14.0	265	426
Oct. 20,	410	5.0	157	174
Dec. 20,	832	.0	197	443
Jan. 18, 1973	7530	1.5	10500	213000
Jan. 31,	989	1.0	886	2370
Feb. 22,	1780	2.0	3080	14800
Feb. 26,	1860	1.5	4610	23200
May 23,	1640	18.0	604	2680
June 21,	1240	22.0	826	2770
July 24,	1400	20.5	375	1420
Aug. 21,	640	26.0	412	712
Sept. 21,	504	22.5	245	333

* Daily mean discharge

WISHNABOTNA RIVER BASIN
06809000 DAVIDS CREEK NEAR HAMLIN, IOWA

LOCATION.--Lat 41°40'25", long 94°48'20", in NE 1/4 sec.9, T.79 N., R.34 W., Audubon County, at gaging station at bridge on State Highway 64, 5.2 mi (8.4 km) east of Hamlin, and 8 mi (12.9 km) upstream from mouth.

RAINAGE AREA.--26.0 mi² (67.3 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--16 years (1952-68), 40,970 tons (37,170 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 31,600 mg/l June 12, 1965; minimum daily, no flow on many days in 1953-56.

Sediment discharge: Maximum daily, 99,000 tons (89,810 tonnes) July 2, 1958; minimum daily, 0 ton (0.0 tonne) on many days in 1953-56.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1953	1291	6,570	no flow	June 4	6,290	0	June 4	many days	
1954	1351	7,200	no flow	June 15	1,000	0	June 15, 21	Jan. 14	
1955	1401	10,800	no flow	Apr. 23	5,790	0	Apr. 23	many days	
1956	1451	5,900	no flow	June 7	3,000	0	June 7	many days	
1957	1521	7,500	*	June 16	14,000	<.05	June 16	many days	
1958	1572	10,100	*	July 2	99,000	<.05	July 2	Oct. 1-5	
1959	1643	4,600	*	May 28	1,560	*	Mar. 19		
1960	1743	10,700	80	May 25	5,830	.5	May 25	Oct. 28, Dec. 22-25	
1961	1883	6,820	33	Mar. 11	3,380	.2	Mar. 11	Aug. 15, 17, Sept. 9, 10	
1962	1943	7,410	31	June 8	9,270	.5	June 8	Sept. 28, 29	
1963	1949	5,100	12	Mar. 16, May 4	2,000	<.05	May 4	several days	
1964	1956	13,100	12	June 22, 23	46,000	<.05	June 22	several days	

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

ANNUAL EXTREMES--CONTINUED

Water year	W.S.P. no.	Concentrations (mg/l)			Loads (tons)		
		Max.	Min.	Date	Max.	Min.	Date
1965	1563	11,100	7	July 11, 12	21,000	.1	Apr. 5 many days
1966	1993	31,600	15	Aug. 15, Sept. 10	93,000	<.05	June 12 Sept. 10, 23
1967	2013	11,500	13	May 6	15,700	<.05	June 27 many days
1968	2095	1,900	8	Feb. 24	91	<.05	Apr. 23 many days

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
July.....1952	957.2	6,615.4	2.7	213	254	5.5	4,860	2,560	
August.....	1,031.8	6,941.5	2.9	224	267	5.8	3,170	2,490	
September.....	369.8	223	3.4	7.4	8.6	.19	444	223	
October.....	172.6	78.3	.....	2.5	3.0	.07	.....	168
November.....	152.8	82.3	.....	2.7	3.2	.07	.....	199
December.....	240.8	128	.....	4.1	4.9	.11	.....	197
January.....1953	103.7	30.7	.....	.99	1.2	.03	.....	110
February.....	902.8	4,681.4	.....	167	180	3.9	.....	1,920
March.....	573	790.2	.....	25	30	.66	2,050	511
April.....	524	424.1	.....	14	16	.35	1,160	300
May.....	458.3	613.5	.....	20	24	.51	2,500	496
June.....	710.3	11,927.2	.....	398	459	10.0	6,570	6,220
July.....	149.1	136.9	.....	4.4	5.3	.11	1,400	340
August.....	43.6	24.8	.....	.80	.95	.02	700	211
September.....	1	.2	.....	.01	.01	0	.....	74
Year 1953	4,032.00	18,917.60	.....	52	728	16	6,570	1,740
tober.....	7.6	2.5	.....	.08	.10	0	.....	122
November.....	13.7	2.6	.....	.09	.10	0	.....	70

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Weighted mean
December.....	9.9	1.3	t	t	.04	.05	0	.....	49
Cal. Year 1953	3,497.00	18,635.40	6,290	0	51	717	16	6,570	1,970	
January.....1954	3.8	.2	.....	0	.01	.01	0	.....	20
February.....	20.7	5.4	2.0	t	.19	.21	0	.....	97
March.....	26.4	5.5	.....	t	.18	.21	0	.....	77
April.....	28.9	9.3	2.0	.....	.31	.36	.01	.....	119
May.....	49.3	35.1	20	.....	1.1	1.3	.03	540	264
June.....	128.8	2,039.6	1,000	.....	68	78	1.7	7,200	5,860
July.....	6	1.3	.....	t	.04	.05	0	.....	80
August.....	174.5	1,181.5	890	.....	38	45	.99	2,400	2,510
September.....	16.5	2.6	.....	t	.09	.10	0	.....	58
Water Year 1954	486.10	3,286.90	1,000	0	9.0	126	2.7	7,200	2,500	
October.....	82.5	178.5	79	.....	5.8	6.9	.15	1,380	801
November.....	35.1	5.3	.80	.....	.18	.20	0	.....	56
December.....	14.9	1.8	.....	t	.06	.07	0	.....	45
Cal. Year 1954	587.40	3,466.10	1,000	0	9.5	133	2.9	7,200	2,190	
January.....1955	10.8	1.8	.....	t	.06	.07	0	.....	62
February.....	147.5	51	25	.....	1.0	2.0	.04	185	128
March.....	624.7	1,208.8	590	.....	39	46	1.0	792	717
April.....	300.3	8,252.1	5,790	.....	275	317	6.9	10,800	10,200
May.....	86.1	119.3	105	.....	3.8	4.6	.10	1,880	513
June.....	62.4	291	125	.....	9.7	11	.24	1,870	1,730
July.....	31.1	355.7	351	0	11	14	.30	4,460	4,240	
August.....	.5	.1	t	0	0	0	0	.....	74
September.....	.9	.2	t	0	.01	.01	0	.....	82
Water Year 1955	1,396.80	10,465.60	5,790	0	29	403	8.7	10,800	2,780	
October.....	2.76	.3	t	t	.01	.01	0	.....	40
November.....	2.98	.6	t	t	.02	.02	0	.....	75
December.....	.61	.01	t	0	0	0	0	.....	6
Cal. Year 1955	1,270.65	10,280.91	5,790	0	28	395	8.6	10,800	3,000	
January.....1956	.27	.1	t	0	0	0	0	.....	137
February.....	.01	t	t	0	0	0	0	.....	0
March.....	5.72	.5	t	0	.02	.02	0	.....	32
April.....	3.68	.4	.10	t	.01	.02	0	.....	40
May.....	17.1	111.6	65	t	3.6	4.3	.09	3,000	2,420	
June.....	113.11	3,342.5	3,000	t	111	129	2.8	5,900	10,900	

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Minimum
July.....	173.77	2,039.5	900	t	66	78	1.7	2,400	4,350	
August.....	495.1	1,989.4	1,000	t	64	77	1.7	1,600	1,490	
September.....	542.74	1,222.7	850	t	41	47	1.0	850	834	
Water Year 1956	1,357.85	8,707.61	3,000	0	24	335	7.3	5,900	2,380	
October.....	79.43	69	48	t	2.2	2.7	.06	650	322	
November.....	224.8	228.1	200	t	7.6	8.8	.19	900	376	
December.....	70.8	5.4	t	t	.17	.21	0	t	28	
Cal. Year 1956	1,726.53	9,009.20	3,000	0	25	347	7.5	5,900	1,930	
January.....1957	24.3	1.4	.10	t	.05	.05	0	t	21	
February.....	40.58	9.1	2.6	t	.33	.35	.01	195	83	
March.....	120.39	181.8	70	t	5.9	7.0	.15	1,300	559	
April.....	300.1	152.5	54	.30	5.1	5.9	.13	800	188	
May.....	213.5	153.5	47	.20	5.0	5.9	.13	868	266	
June.....	916.9	18,974.1	14,000	.20	632	730	16	7,500	7,660	
July.....	138.8	34.5	3.1	.20	1.1	1.3	.03	170	92	
August.....	35.87	5.4	.60	t	.17	.21	0	100	56	
September.....	70.48	17.1	8.1	t	.57	.66	.01	335	90	
Water Year 1957	2,235.95	19,831.90	14,000	t	54	763	17	7,500	3,290	
October.....	202.94	74	46	t	2.4	2.8	.06	458	135	
November.....	285.6	55.5	6.4	t	1.8	2.1	.05	168	72	
December.....	350	46.3	2.8	t	1.5	1.8	.04	62	49	
Cal. Year 1957	2,699.46	19,705.20	14,000	t	54	758	16	7,500	2,700	
January.....1958	191.7	25.5	t	t	.82	.98	.02	87	49	
February.....	404.9	1,443.3	845	t	52	56	1.2	2,730	1,320	
March.....	520	130.5	16	t	4.2	5.0	.11	222	93	
April.....	326.5	43.1	5.9	t	1.4	1.7	.04	146	49	
May.....	163.6	17.6	1.1	t	.57	.68	.01	85	40	
June.....	148.3	900.2	850	.10	30	35	.75	4,200	2,250	
July.....	3,461	119,932.3	99,000	t	3,870	4,610	100	10,100	12,800	
August.....	490.4	415	170	2.7	13	16	.35	1,000	313	
September.....	532.8	580	260	1.0	19	22	.48	700	403	
Water Year 1958	7,077.74	123,663.30	99,000	t	339	4,760	103	10,100	6,470	
October.....	156.2	24.6	t	t	.79	.95	.02	83	58	
November.....	149.3	43.6	8.5	t	1.5	1.7	.04	240	108	
December.....	71.1	12.4	t	t	.40	.48	.01	78	65	

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Minimum	Mean			Maximum daily	Weighted mean
			Maximum	Minimum						
Cal. Year 1958	6,615.80	123,568.10	99,000			339	4,750	103	10,100	6,920
January...1959	33.6	6.2				.20		.01	98	68
February.....	130	427.5	236			15	16	.36	975	1,220
March.....	900.7	4,531.2	1,560	1.2		146	174	3.8	3,830	1,860
April.....	456.6	1,358.6	170	3.0		45	52	1.1	2,100	1,100
May.....	1,033	7,383.1	1,400	5.0		238	284	6.2	4,600	2,650
June.....	1,578.8	1,159.7	420	3.0		39	45	.97	2,000	742
July.....	284	234.6	70			7.6	9.0	.20	650	306
August.....	82.06	30.5	10	.10		.98	1.2	.03	230	138
September.....	86.2	95.8	55			3.2	3.7	.08	600	412
Water Year 1959	3,961.56	15,307.80	1,560			42	589	13	4,600	1,430
October.....	71.9	56.4	6.0	.50		1.8	2.2	.05	570	291
November.....	83.71	70.8	6.0	.70		2.4	2.7	.06	550	313
December.....	80.6	100.1	33	.50		3.2	3.8	.08	1,020	460
Cal. Year 1959	3,821.17	15,454.50	1,560			42	594	13	4,600	1,500
January...1960	140	68.3	7.0	1.0		2.2	2.6	.06		181
February.....	148.6	83.5	9.5	1.3		2.9	3.2	.07		208
March.....	940.4	3,115.9	1,580	.80		101	120	2.6	2,250	1,230
April.....	1,775	8,767.5	3,530	4.5		292	337	7.3	3,970	1,830
May.....	1,213	10,679.4	5,830	2.9		344	411	8.9	10,700	3,260
June.....	663	1,326.4	455	3.0		44	51	1.1	1,760	741
July.....	582.2	2,830.9	1,580	3.6		91	109	2.4	4,070	1,800
August.....	870.3	8,016.1	2,590	2.7		259	308	6.7	4,570	3,410
September.....	241	371.4	181	2.4		12	14	.31	1,970	571
Water Year 1960	6,809.71	35,486.70	5,830	.50		97	1,360	30	10,700	1,930
October.....	83.3	115.7	20	.80		3.7	4.4	.10	750	514
November.....	124.1	111.6	5.7	2.0		3.7	4.3	.09	405	333
December.....	95.4	57.6	4.6	.60		1.9	2.2	.05	295	224
Cal. Year 1960	6,876.30	35,544.30	5,830	.60		97	1,370	30	10,700	1,910
January...1961	44.4	33.6	1.6	.50		1.1	1.3	.03	330	280
February.....	433.1	1,762.1	505	.40		63	68	1.5	2,900	1,510
March.....	1,536.5	19,304	3,380	10		623	742	16	6,820	4,650
April.....	746	1,460.3	532	4.3		49	56	1.2	2,670	725
May.....	429.2	932.3	614	1.5		30	36	.78	3,890	805
June.....	610	3,305.5	2,080	6.7		110	127	2.8	5,160	2,010
July.....	253.5	889.4	764	2.4		29	34	.74	3,230	1,300
August.....	166.3	431.7	187	.20		14	17	.36	1,730	961

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Maximum	Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean
			Minimum	Maximum						
September.....	329.4	3,873.4	.20	129	149	3.2	3,440	4,360		
Water Year 1961	4,851.20	32,277.20	.20	88	1,240	27	6,820	2,460		
October.....	533	965.6	5.7	31	37	.81	2,150	671		
November.....	421.3	404.2	4.5	13	16	.34	650	355		
December.....	286.3	171.9	3.0	5.5	6.6	.14	330	222		
Cal. Year 1961	5,789.00	33,534.00	.20	92	1,290	28	6,820	2,150		
January....1962	162.3	81.8	1.5	2.6	3.1	.07	260	187		
February.....	680	2,243.8	2.6	80	86	1.9	3,900	1,220		
March.....	2,043	11,671	3.8	376	449	9.7	6,050	2,120		
April.....	745	426.1	2.5	14	16	.36	400	212		
May.....	656.1	4,405	1.3	142	169	3.7	4,620	2,490		
June.....	1,451	25,126.5	4.6	838	966	21	7,410	6,410		
July.....	417.8	205.7	.90	6.6	7.9	.17	1,070	182		
August.....	191.6	76.9	.60	2.5	3.0	.06	610	149		
September.....	112.5	54	.50	1.8	2.1	.05	130	178		
Water Year 1962	7,699.90	45,832.50	.50	126	1,760	38	7,410	2,200		
October.....	102.5	38.6	.60	1.2	1.5	.03	310	139		
November.....	72	17.1	.70	.57	.66	.01	100	88		
December.....	64.8	12.6	.20	.41	.48	.01	96	72		
Cal. Year 1962	6,698.60	44,359.10	.20	122	1,710	37	7,410	2,450		
January....1963	60.1	11.7	.30	.38	.45	.01	93	72		
February.....	117.3	42	.30	1.0	1.6	.04	390	133		
March.....	936.4	4,575	2.0	148	176	3.8	5,100	1,810		
April.....	247.8	1,944.4	.10	65	75	1.6	5,000	2,910		
May.....	465.9	3,262.2	.60	105	125	2.7	5,100	2,590		
June.....	111.7	19.1	.10	.64	.73	.02	190	63		
July.....	45.9	84.7	t	2.7	3.3	.07	3,600	683		
August.....	43.9	137.7	t	4.4	5.3	.11	2,100	1,160		
September.....	29.6	8.7	t	.29	.33	.01	270	109		
Water Year 1963	2,297.90	10,153.80	t	28	391	8.5	5,100	1,640		
October.....	16.8	5.2	t	.17	.20	0	380	115		
November.....	28.2	23.7	.10	.79	.91	.02	1,200	311		
December.....	25.4	7.1	t	.23	.27	.01	450	104		
Cal. Year 1963	2,129.00	10,121.50	t	28	389	8.4	5,100	1,760		

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
January...1964	29.1	10.7	.70	.20	.35	.41	.01	260	136	
February.....	37.1	14	1.0	.20	0	.54	.01	250	140	
March.....	52.1	17.1	2.0	.10	.55	.66	.01	400	122	
April.....	948.6	18,739	13,000	2.0	625	721	16	11,100	7,320	
May.....	517.2	4,130	1,500	2.0	133	159	3.4	5,000	2,960	
June.....	1,469.4	59,963	34,600	3.0	2,000	2,310	50	13,100	15,100	
July.....	418.7	2,779	1,200	2.0	90	107	2.3	3,100	2,460	
August.....	186.4	81.6	15	.10	2.6	3.1	.07	590	162	
September.....	244	561.8	290	.30	19	22	.47	1,200	853	
Water Year 1964	3,973.00	86,332.20	34,600	t	236	3,320	72	13,100	8,050	
October.....	88.2	13.7	1.2	.20	.44	.53	.01	120	58	
November.....	92	60.5	36	.30	2.0	2.3	.05	1,100	244	
December.....	76.7	25.6	5.2	.20	.83	.98	.02	510	124	
Cal. Year 1964	4,159.50	86,396.00	34,600	.10	236	3,320	72	13,100	7,690	
January.....1965	74.5	12.8	1.2	.10	.41	.49	.01	150	64	
February.....	100.6	154.1	140	.10	5.5	5.9	.13	2,200	567	
March.....	1,111.7	13,925	7,800	.40	449	536	12	5,200	4,640	
April.....	1,018.7	24,764.7	18,200	2.1	825	952	21	11,100	9,000	
May.....	383.6	2,887.6	990	.80	93	111	2.4	7,100	2,790	
June.....	502.3	10,180.1	7,500	1.0	339	392	8.5	7,500	7,510	
July.....	190.1	388	340	.10	13	15	.32	2,900	756	
August.....	88	430.1	420	.10	14	17	.36	610	1,810	
September.....	593.5	1,805.7	490	.20	60	69	1.5	1,500	1,130	
Water Year 1965	4,319.90	54,647.90	18,200	.10	150	2,100	46	11,100	4,690	
October.....	482	286.2	29	3.9	9.2	11	.24	480	220	
November.....	298.2	164.7	24	2.2	5.5	6.3	.14	500	205	
December.....	246.7	393	270	1.4	13	15	.33	4,180	590	
Cal. Year 1965	5,089.90	55,392.00	18,200	.10	152	2,130	46	11,100	4,030	
January.....1966	211.2	128.4	21	.80	4.1	4.9	.11	670	225	
February.....	199.9	360.2	87	.70	13	14	.30	1,200	667	
March.....	417.5	1,293.9	430	2.3	42	50	1.1	4,600	1,150	
April.....	210	102.3	22	.40	3.4	3.9	.09	780	180	
May.....	406.1	6,393.1	5,600	2.6	206	246	5.3	10,600	5,830	
June.....	1,300	99,950.2	93,000	2.6	3,330	3,840	83	31,600	28,500	
July.....	197.1	59.9	8.2	.30	1.9	2.3	.05	480	113	
August.....	122.9	294.2	270	.10	9.5	11	.25	1,060	887	
September.....	36.6	4.5	.40	t	.15	.17	0	130	46	

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
Water Year 1966	4,128.20	109,430.60	93,000	t	300	4,210	91	31,600	9,820	
October.....	33.2	3.8	.40	t	.12	.15	0	110	42	
November.....	29.8	4.8	.60	t	.16	.18	0	150	60	
December.....	25	7.2	.90	t	.23	.28	.01	320	107	
Cal. Year 1966	3,189.30	108,602.50	93,000	t	298	4,180	91	31,600	12,600	
January.....	21.3	10.2	1.3	t	.33	.39	.01	940	177	
February.....	55	33.6	5.8	t	1.2	1.3	.03	500	226	
March.....	59.3	37.3	9.1	t	1.2	1.4	.03	650	233	
April.....	36.6	11.8	5.6	t	.39	.45	.01	420	119	
May.....	34.5	6.9	3.2	t	.22	.27	.01	220	74	
June.....	2,057.4	80,687.5	15,700	t	2,690	3,100	67	11,500	14,500	
July.....	263.4	90.5	9.2	t	2.9	3.5	.08	350	127	
August.....	64.7	9.1	.90	t	.29	.35	.01	170	52	
September.....	38.06	10.2	5.2	t	.34	.39	.01	530	99	
Water Year 1967	2,718.26	80,912.90	15,700	t	222	3,110	68	11,500	11,000	
October.....	42.6	3.6	.30	t	.12	.14	0	67	31	
November.....	43.1	3.7	.50	t	.12	.14	0	190	32	
December.....	29.5	4	.40	t	.13	.15	0	140	50	
Cal. Year 1967	2,745.46	80,908.40	15,700	t	222	3,110	68	11,500	10,900	
January.....	44.72	12.7	3.2	t	.41	.49	.01	240	105	
February.....	25.25	11.4	4.4	t	.39	.44	.01	560	167	
March.....	30.23	13.1	1.3	t	.42	.50	.01	600	160	
April.....	62.55	122.3	91	t	4.1	4.7	.10	1,900	724	
May.....	38.87	5.4	.50	t	.17	.21	0	150	52	
June.....	13.64	2.4	.90	t	.08	.09	0	750	65	
July.....	5.72	.9	.10	t	.03	.03	0	160	58	
August.....	5.06	2.2	.20	t	.07	.08	0	410	161	
September.....	16.4	16.7	13	t	.56	.64	.01	1,300	377	
Water Year 1968	357.64	198.40	91	t	.54	7.6	.17	1,900	205	

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis
			Concentration (mg/L)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Percent finer than indicated size, in millimeters		
June 15, 1954	44	19.5	9450	1120	69	92	99	SPWC
June 21,.....	107	20.0	10200	2950	60	85	97	SPWC
Aug. 22,.....	20	20.5	971	52	86	95	100	SPWC
Aug. 27,.....	14	24.0	405	15	77	96	99	SPWC
Oct. 14, 1954	14	11.5	1270	48	89	98	100	SPWC
Mar. 3, 1955	*155	.5	652		35	60	97	SPWC
Mar. 8,.....	*16	2.0	1080		49	77	99	SPWC
Apr. 19,.....	145	8.0	36200	14200	38	72	99	SPWC
Apr. 23,.....	54	13.5	23000	3350	36	69	98	SPWC
May 9,.....	24	11.0	3550	230	62	89	99	SPWC
July 10,.....	44	20.0	8280	984	66	92	100	SPWC
May 30, 1956	23	19.0	4050	252	84	99	99	SPWC
July 3,.....	160	20.0	10100	4360	40	80	95	SPWC
Aug. 16,.....	406	20.5	1040	1140	61	82	97	SPWC
Sept. 4,.....	435	13.5	763	896	67	77	96	SPWC
Sept. 5,.....	392	13.0	833	882	68	77	96	SPWC
Nov. 5, 1956	94	9.0	1320	335	54	80	99	SPWC
May 14, 1957	24	14.0	2000	130	54	80	100	SPWC
May 14,.....	24	14.0	2000	130	38	81	100	SPN
June 14,.....	22	20.0	6320	375	76	95	100	SPWC
June 14,.....	22	20.0	6320	375	70	97	100	SPN
June 16,.....	1030	18.0	5290	14700	74	93	99	SPWC
June 16,.....	1030	18.0	5290	14700	43	76	98	SPN
June 17,.....	130	21.0	16800	5900	30	56	87	SPWC
June 17,.....	199	21.0	7080	3800	50	78	95	SPWC
Oct. 8, 1957	43	12.0	1320	153	31	65	98	SPWC
Feb. 23, 1958	60	1.0	1350	219	34	56	92	SPWC
Feb. 24,.....	200	1.5	2510	1360	30	57	92	SPWC
June 13,.....	150	18.0	14900	6030	65	95	99	SPWC
June 13,.....	30	18.0	1250	101	72	90	99	SPWC
June 23,.....	24	20.0	8490	550	53	90	100	SPWC
July 2,.....	329	21.0	2710	2410	72	90	98	SPWC

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieves; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters							
July 19,.....	503	16.5	1900	2580	43	78	99	100	SPWC			
Feb. 27, 1959	50	1.0	1830	247	33	44	90	95	98	99	100	SPWC
Feb. 28,.....	45	1.0	3120	379	26	49	95	98	99	99	100	SPWC
Mar. 13,.....	80	1.0	6880	1490	23	45	91	96	100			SPWC
Mar. 19,.....	180	2.0	9620	4680	22	46	83	90	98			SPWC
Apr. 16,.....	20	11.0	7170	387	50	67	99	100				SPWC
May 3,.....	44	16.5	2620	311	41	67	95	97	99			SPWC
May 28,.....	116	15.5	14700	4600	37	59	93	96	99			SPWC
May 29,.....	68	15.0	3060	562	33	53	83	86	92			SPWC
May 29,.....	68	15.0	3060	562	22	47						SPN
May 30,.....	89	15.5	5020	1210	38	52	78	84	95			SPWC
May 30,.....	53	13.5	240	1680	42	64	93	96	99			SPWC
June 30,.....	82	15.0	3060	677	38	66	94	97	100			SPWC
June 30,.....	82	15.0	3060	677	25	56						SPN
Mar. 29, 1960	*250	1.5	3790		27	46	84	91	98			SPWC
Mar. 29,.....	*250	1.5	3790		12	36						SPN
May 25,.....	329	15.5	32500	28900	34	69	96	97	99			SPWC
May 25,.....	329	15.5	32500	28900	15	57						SPN
June 20,.....	122	17.0	4290	1410	45	61	98	99	100			SPWC
June 30,.....	114	18.5	10500	3230	32	65	98	99	100			SPWC
Feb. 21, 1961	*50	.0	3580		28	49	94	97	99			SPWC
Feb. 22,.....	*110	1.0	5020		34	51	92	96	100			SPWC
Mar. 11,.....	321	3.0	14600	12700	23	33	90	95	99			SPWC
Mar. 11,.....	321	3.0	14600	12700	12	33						SPN
June 7,.....	57	14.5	8650	1330	39	69	93	99	100			SPWC
June 13,.....	172	16.5	9860	4580	44	71	89	95	97			SPWC
Oct. 10, 1961	100	16.0	10100	2730	31	44	87	99	100			SPWC
Cct. 10,.....	100	16.0	10100	2730	13	28	84					SPN
May 26, 1962	30	14.5	2340	190	28	44	83	93	96			SPWC
May 26,.....	30	14.5	2340	190	13	36	82	82	99			SPN
June 10,.....	192	15.5	9280	4810	24	64	88	97	99			SPWC
June 19,.....	385	15.5	27700	28800	41	66	88	96	98			SPWC
May 4, 1963	252	10.0	12100	8230	41	63	86	93	96			SPWC

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis					
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	Percent finer than indicated size, in millimeters							
Apr. 2, 1964	804	8.0	12100	27600	27	35	41	57	75	88	96	100	VPWC
Apr. 2,	846	5.0	2000	113	42	50	71	71	92	92	95	99	VPWC
Apr. 3,	21	8.0	480	12	36	49	78	84	99	99	99	100	VPWC
Apr. 8,	98	3.5	4900	1300	43	52	46	79	98	98	99	100	SPWC
Apr. 13,	61	5.0	14100	2320	39	52	47	68	88	99	100	100	VPWC
Apr. 20,	88	10.0	7300	1730	36	47	54	83	97	99	99	100	VPWC
May 26,	88	15.5	7300	1730	19	26	78	88	93	98	98	100	VPWC
May 26,	480	18.0	23200	19400	30	47	67	79	93	98	99	100	VPWC
June 20,	310	17.0	5600	726	65	78	91	100	100	100	100	100	VPWC
June 22,	48	23.5	3800	523	45	50	59	72	93	100	100	100	VPWC
July 7,	51	15.5	3800	523	9	29	55	86	86	97	99	100	VPWC
Sept. 22,	51	15.5	3800	523	9	29	55	86	86	97	99	100	VPWC
Sept. 22,	22	1.0	1400	83	35	39	44	58	86	97	99	100	VPWC
Feb. 27, 1965	685	.5	4300	7950	32	36	41	53	76	91	93	99	VPWC
Mar. 30,	685	.5	9700	8170	33	37	46	60	86	98	99	100	VPWC
Mar. 31,	312	2.0	11100	9710	32	37	44	57	83	95	98	99	VPWC
Apr. 5,	324	2.0	11100	9710	15	23	31	49	79	100	100	100	VPWC
Apr. 5,	52	10.5	17200	2410	45	56	67	84	97	100	100	100	VPWC
May 15,	33	16.5	6300	561	22	36	49	73	98	98	99	100	SPN
May 26,	29	20.0	2100	164	63	76	83	95	97	100	100	100	SPWC
May 11, 1966	13	5.5	6220	218	35	41	53	67	89	99	100	100	VPWC
June 12,	670	16.5	39100	70700	31	37	45	59	88	98	99	100	VPWC
June 5, 1967	51	16.0	5890	811	42	50	62	75	93	97	98	100	VPWC
June 9,	698	19.5	114000	215000	21	22	33	50	84	90	92	95	VPWC
June 9,	111	19.5	4980	1490	43	50	59	70	83	85	87	90	VPWC
June 9,	111	19.5	4980	1490	18	32	44	59	77	99	99	97	VPWC
June 10,	698	19.5	22900	43200	37	38	53	72	90	98	99	100	VPWC
June 27,	790	20.0	52400	112000	34	38	46	61	89	99	100	100	VPWC

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters	
Feb. 6, 1969	1.8	.0	54	.26		
Mar. 17,.....	1160	2.0	4070	12800		
Apr. 17,.....	24	9.0	273	18		
May 5,.....	7.5	17.0	59	1.2		
June 5,.....	8.2	16.0	86	1.9		
June 30,.....	34	18.0	377	35		
Aug. 6,.....	8.7	23.0	33	.78		
Sept. 3,.....	3.3	19.0	112	1.0		
Dec. 3, 1969	1.4	.5	154	.58		
Jan. 14, 1970	1.9	.0	86	.44		
Feb. 6,.....	3.4	.5	372	3.4		
Mar. 4,.....	7.0	3.5	283	5.3		
Apr. 2,.....	2.2	1.0	90	.53		
May 5,.....	2.8	17.0	31	.23		
June 4,.....	5.8	16.5	99	1.6		
July 7,.....	2.0	24.5	61	.33		
Aug. 5,.....	.70	24.0	92	.17		
Aug. 31,.....	.12	22.0	79	.03		
Cct. 6, 1970	.11	18.0	91	.03		
Nov. 3,.....	1.4	5.0	115	.40		
Dec. 2,.....	.76	5.0	145	.30		
Mar. 4, 1971	12	.5	151	4.9		
Apr. 7,.....	4.8	11.5	206	2.7		
May 4,.....	2.8	9.0	40	.30		
June 2,.....	7.7	17.0	65	1.4		
July 1,.....	4.8	22.0	188	2.4		
Aug. 3,.....	2.3	22.5	95	.60		
Cct. 5, 1971	.18	13.0	39	.02		
Jan. 11, 1972	4.0	.5	87	.94		

PERIODIC SAMPLES

* Daily mean discharge

NISHNABOTNA RIVER BASIN

06809500 EAST NISHNABOTNA RIVER AT RED CAK, IOWA

LOCATION.--Lat 41°00'41", long 95°14'07", in NW 1/4 SE 1/4 sec.29, T.72 N., R.38 W., Montgomery County, at gage on Coolbaugh Street Bridge in Red Oak, and 0.2 mi (0.3 km) upstream from Red Oak Creek.

RAINAGE AREA.--894 mi² (2,315 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--11 years (1962-73), 2,225,000 tons (2,019,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 48,400 mg/l May 26, 1964; minimum daily, 3 mg/l Oct. 11, 1966.

Sediment discharge: Maximum daily, 970,000 tons (880,000 tonnes) May 26, 1964; minimum daily, 0.4 ton (0.36 tonne) Jan. 18, 1964, Oct. 11, 25, 1966.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Year	W.S.P. no.	Daily suspended sediment					
		Concentrations (mg/l)		Loads (tons)			
		Max.	Min.	Date	Date		
1963	1949	11,100	8	Nov. 11	Mar. 11	2	several days
1964	1956	48,400	4	Jan. 18, 19	May 26	.4	Jan. 18, 19
1965	1963	21,200	5	Jan. 29	Apr. 5	.8	Jan. 29
1966	1993	24,200	6	Sept. 30	June 12	1.0	Sept. 30
1967	2013	26,700	3	Oct. 11, 25	June 16	.4	Oct. 11, 25
1968	2095	8,400	6	Nov. 18	May 16	.8	Jan. 6
1969	2145	21,600	8	Feb. 5	Mar. 18	.81	Dec. 16
1970	2155	29,700	10	Sept. 13, 30	May 14	.92	Sept. 30
1971	2165	28,200	11	Sept. 23	June 6	.88	Feb. 12
1972	+	17,000	11	Oct. 5, Feb. 5	Sept. 11	.81	Oct. 12
1973	+	22,700	65	Dec. 6	May 8	.43	Sept. 24

Water Resources Data for Iowa, Part 2, Water Quality Records

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Minimum						Maximum
December.....	1,836	132.6	9.7	1.4	4.3	.15	.11	82	27		
Cal. Year 1967	99,029	3,403,428.30	615,000	.50	9,320	3,810	2,840	26,700	12,700		
January....1968	868	130.2	19	.80	4.2	.15	.11	160	56		
February.....	1,371	210.2	47	1.1	7.2	.24	.18	290	57		
March.....	2,246	326.2	35	2.8	11	.36	.27	110	54		
April.....	2,596	1,099.5	370	3.4	37	1.2	.92	770	157		
May.....	2,011	10,911.9	6,300	2.6	352	12	9.1	8,400	2,010		
June.....	1,215	303.8	90	2.6	10	.34	.25	500	93		
July.....	1,240	4,072.6	3,040	1.5	131	4.6	3.4	4,610	1,220		
August.....	1,224	355.8	100	1.4	11	.40	.30	430	108		
September.....	1,255	350	200	1.0	12	.39	.29	580	103		
Water Year 1968	20,082	18,143.30	6,300	.80	50	20	15	8,400	335		
October.....	4,183	30,619.2	26,800	.87	988	34	26	8,280	2,710		
November.....	1,819	204.2	20	2.5	6.8	.23	.17	127	42		
December.....	1,418	490.57	224	.81	16	.55	.41	553	128		
Cal. Year 1968	21,446	49,074.17	26,800	.80	134	55	41	8,400	848		
January....1969	3,138	2,209.53	1,020	.89	71	2.5	1.8	1,260	261		
February.....	17,541	167,529.8	64,000	1.7	5,980	187	140	4,940	3,540		
March.....	42,583	1,735,832	601,000	18	56,000	1,940	1,450	21,600	15,100		
April.....	10,291	32,575	12,000	59	1,090	36	27	6,100	1,170		
May.....	15,545	191,708	53,600	74	6,180	214	160	11,300	4,570		
June.....	15,798	454,503	212,000	57	15,200	508	379	18,600	10,700		
July.....	24,405	406,951	210,000	273	13,100	455	340	13,300	6,170		
August.....	6,423	9,611	2,270	26	310	11	8.0	1,710	554		
September.....	3,053	696	73	7.4	23	.78	.58	154	84		
Water Year 1969	146,201	3,032,929.30	601,000	.81	8,310	3,390	2,530	21,600	7,680		
October.....	2,822	691	97	3.0	22	.77	.58	233	91		
November.....	2,319	254.6	16	3.6	8.5	.28	.21	63	41		
December.....	2,031	263.2	19	4.1	8.5	.29	.22	102	48		
Cal. Year 1969	145,953	3,002,824.13	601,000	.89	8,230	3,360	2,510	21,600	7,620		
January....1970	1,984	306.6	34	1.8	9.9	.34	.26	115	57		
February.....	2,896	1,469.7	169	6.5	52	1.6	1.2	556	188		
March.....	13,945	308,591	202,000	38	9,950	345	258	11,200	8,190		
April.....	3,802	949.9	153	8.0	32	1.1	.79	234	93		
May.....	23,247	1,228,328	670,000	5.3	39,600	1,370	1,030	29,700	19,600		
June.....	4,801	19,844.5	6,380	8.5	661	22	17	4,890	1,530		

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Minimum		Maximum				Maximum daily	Weighted mean
			Minimum	Maximum	Mean	Maximum daily				
July.....	2,433	1,732.1	3.1	611	56	1.9	1.4	1,430	264	
August.....	2,398	14,211.8	2.5	9,900	458	16	12	5,350	2,200	
September.....	1,334	157.82	.92	29	5.3	.18	.13	122	44	
Water Year 1970	64,016	1,576,790.22	.92	670,000	4,320	1,760	1,320	29,700	9,120	
October.....	2,310	1,981.3	1.4	650	64	2.2	1.7	860	318	
November.....	1,788	264.8	3.5	39	8.8	.30	.22	156	55	
December.....	1,748	306	3.9	20	9.9	.34	.26	118	65	
Cal. Year 1970	62,690	1,578,143.52	.92	670,000	4,320	1,770	1,320	29,700	9,320	
January.....	617	93.67	.97	7.0	3.0	.10	.08	163	56	
February.....	35,576	461,261.1	.88	218,000	16,500	516	385	7,850	4,800	
March.....	21,393	364,736	64	150,000	11,800	408	304	13,300	6,310	
April.....	3,724	1,237.7	4.3	276	41	1.4	1.0	432	123	
May.....	10,325	358,018.7	5.8	141,000	11,500	400	299	28,200	12,800	
June.....	12,408	504,686	38	225,000	16,800	565	421	22,000	15,100	
July.....	3,566	1,633.7	3.5	291	53	1.8	1.4	533	170	
August.....	1,929	291.9	1.6	83	9.4	.33	.24	312	56	
September.....	1,014	72.18	.98	11	2.4	.08	.06	65	26	
Water Year 1971	96,398	1,694,583.05	.88	225,000	4,640	1,900	1,410	28,200	6,510	
October.....	1,357	861.48	.81	635	28	.96	.72	940	235	
November.....	3,130	5,189	4.4	1,020	173	5.8	4.3	1,400	614	
December.....	2,135	304.9	4.1	22	9.8	.34	.25	143	53	
Cal. Year 1971	97,174	1,698,386.33	.81	225,000	4,650	1,900	1,420	28,200	6,470	
January.....	1,514	174.7	1.6	21	5.6	.20	.15	95	43	
February.....	5,968	67,391	1.0	44,000	2,320	75	56	7,890	4,180	
March.....	4,974	9,034.5	4.7	4,700	291	10	7.5	2,500	673	
April.....	4,926	39,344.2	2.9	22,400	1,310	33	33	6,970	2,960	
May.....	22,516	283,061	341	72,700	9,130	317	236	17,000	4,660	
June.....	8,947	34,039	112	6,650	1,130	38	28	5,300	1,410	
July.....	8,156	44,913	37	15,400	1,450	50	37	5,040	2,040	
August.....	8,899	52,390.4	9.4	23,200	1,690	59	44	4,950	2,180	
September.....	92,220	894,879.6	5.0	252,000	29,800	1,000	747	8,590	3,590	
Water Year 1972	164,742	1,431,582.78	.81	252,000	3,910	1,600	1,190	17,000	3,220	
October.....	19,689	35,962	127	9,070	1,160	40	30	2,400	676	
November.....	40,060	86,598	744	15,300	2,890	97	72	2,500	801	
December.....	28,970	322,668	114	246,000	10,400	361	269	13,600	4,130	

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CCONTINUED

Mcnth	Water discharge (cfs-days)	Load (tcns)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
Cal. Year 1972	246,839	1,870,455.40	252,000	1.0	5,110	2,090	1,560	17,000	2,810	
January.....1973	33,422	262,277	140,000	212	8,460	293	219	9,300	2,910	
February.....	40,276	408,099	86,800	300	14,600	456	341	10,800	3,750	
March.....	56,550	616,850	104,000	2,260	19,900	690	515	10,600	4,040	
April.....	65,810	522,830	152,000	2,460	17,400	585	436	9,830	2,940	
May.....	75,639	742,780	319,000	1,080	24,000	831	620	10,800	3,640	
June.....	33,022	182,082	68,600	448	6,070	204	152	11,700	2,040	
July.....	38,052	592,824	192,000	488	19,100	663	495	12,100	5,770	
August.....	15,381	65,179	18,700	76	2,100	73	54	3,700	1,570	
September.....	16,005	360,657	199,000	43	12,000	403	301	22,700	8,350	
Water Year 1973	462,876	4,198,806	319,000	43	11,500	4,700	3,500	22,700	3,360	

06809500 EAST NISHNABOTNA RIVER AT RED CAK, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters							
Mar. 15, 1963	3140	1.0	9700	82200	24	38	59	81	87	96	100	SPWC
May 14,	597	18.0	15200	24500	48	84	95	98	99	100		SPWC
May 14,	482	18.0	17200	22400	51	88	96					SPN
June 6,	343	28.0	7400	6850	26	72	88	95	100			SPWC
June 6,	343	28.0	7400	6850	20	69	84	94				SPN
Apr. 2, 1964	6980	11.0	32600	614000	28	38		93	96	99	100	VPWC
Apr. 3,	1270	6.0	19200	62400	40	53	61	76	93	99	100	VPWC
Apr. 3,	1270	6.0	18200	62400	16	25	36	53	90			VPN
Apr. 13,	7480	9.0	32600	658000	40	41		69	97	98	100	VPWC
Apr. 13,	9500	8.0	18200	467000	38	45		67	94	96	99	VPWC
Apr. 27,	2240	13.5	17200	104000	32	41		62	98	98	100	VPWC
May 26,	11300	19.0	35700	1090000	39	44	54	69	89	99	100	VPWC
May 26,	11300	19.0	35700	1090000	17	27	36	56	85	99	100	VPWC
June 14,	2780	22.0	16200	122000	36	40	47	60	86	98		VPWC
June 14,	2780	22.0	16200	122000	18	29	45	81				VPN
June 15,	3260	21.0	11100	97700	37	42	60	95	97	99	100	VPWC
June 20,	2400	21.0	15200	98500	39	45	69	99	100			VPWC
June 20,	11900	20.0	27500	884000	39	49	50	84	96	97	100	VPWC
June 20,	11900	20.0	27500	884000	17	25	38	51	81			VPN
June 22,		23.0	9900		36	44	64	99	100			VPWC
June 23,	8500	23.5	15200	349000	36	44	51	62	96	98	100	VPWC
July 3,	4800	28.0	21200	275000	32	38	61	97	93	100		VPWC
July 11,	6400	21.0	17200	297000	38	43	50	63	86	97	100	VPWC
Aug. 30,	1770		7900	37800	33	41	51	67	96	97	100	VPWC
Sept. 6,	3180	20.0	10100	86700	32	37	43	55	81	92	99	VPWC
Sept. 6,	3180	20.0	10100	86700	10	16	25	44	74			VPN
Sept. 23,	1090	18.0	4600	13500	33	37		54	92	96	100	VPWC
Feb. 10, 1965	2310	.0	2900	18100	21	25	36	62	83	94	100	VPWC
Feb. 20,	828	2.0	5800	13000	22	24	30	39	74	80	96	VPWC
Mar. 1,	15700	.0	6300	267000	26	29	34	45	63	74	93	VPWC
Mar. 15,	2230	2.0	4700	28300	31	34	40	53	79	93	100	VPWC
Mar. 15,	2230	2.0	4700	28300	14	21	31	46	77			VPN
Mar. 17,	15100	2.0	5900	241000	36	42	49	62	80	93	100	VPWC
Apr. 1,	1970	2.0	12100	64400	34	38	45	61	85	96	100	VPWC
Apr. 1,	1970	2.0	12100	64400	14	23	32	50	80	93		VPN
Apr. 5,	12900	4.5	30600	1070000	26	27	37	48	76	91	94	VPWC

06809500 EAST NISHNABOTNA RIVER AT RED CAK, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis				
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters							
May 22,.....	1170	18.0	19200	60700	40	47	57	71	91	98	100	VPWC
May 22,.....	1170	18.0	19200	60700	19	28	38	56	84	98	100	VPN
May 27,.....	600	22.0	17200	27900	48	63	69	81	94	98	100	VPWC
June 29,.....	7240	20.5	43300	846000	27	30	36	52	79	94	97	VPWC
June 29,.....	7240	20.5	43300	846000	11	17	25	40	72	92	99	VPN
Sept. 7,.....	788		7000	14900	47	52	59	76	92	98	99	VPWC
Sept. 7,.....	788		7000	14900	22	32	47	65	92	92	99	VPN
Sept. 8,.....	1590	19.0	4000	17200	36	40	46	54	77	91	94	VPWC
Sept. 21,.....	2110	15.5	3900	22200	29	36	48	58	76	88	91	VPWC
Nov. 12, 1965	1780	4.5	6280	30200	26	32	37	48	69	78	80	VPWC
Feb. 9, 1966	448	.0	5200	6290	37	40	46	56	88	96	97	VPWC
Feb. 9,.....	448	.0	5200	6290	12	21	31	49	78	93	99	VPN
May 12,.....	1680	7.0	11100	26700	34	42	53	70	93	98	98	VPWC
May 15,.....	2440	15.5	37000	163000	34	41	57	65	90	97	98	VPWC
May 23,.....	377	19.0	53100	350000	35	45	53	70	92	98	98	VPWC
June 9,.....	547	15.5	2880	2930	38	42	47	67	89	97	98	VPWC
June 10,.....	12100	15.5	9030	13300	41	50	62	75	92	99	100	VPWC
June 12,.....	12100	19.0	52400	1710000	31	36	45	62	88	98	99	VPWC
June 12,.....	15100	19.0	52400	1710000	13	22	31	48	82	88	99	VPN
June 12,.....	1210	19.0	25700	1050000	41	50	60	74	88	96	98	VPWC
June 25,.....	1210	23.5	23500	76800	34	39	50	67	90	97	98	VPWC
June 25,.....	1210	23.5	23500	76800	16	24	34	51	78	93	95	VPN
July 15,.....	2250	21.5	7990	48500	32	37	43	58	81	93	95	VPWC
June 6, 1967	2550	20.0	7140	49200	34	42	50	65	83	92	93	VPWC
June 8,.....	8260	20.0	13800	419000	39	47	58	70	90	97	99	VPWC
June 9,.....	11600	20.0	18800	419000	14	22	31	45	73	93	95	VPWC
June 12,.....	11600	19.5	22500	705000	35	41	47	62	80	93	95	VPWC
June 12,.....	11600	19.5	22500	705000	15	23	32	45	72	95	97	VPN
June 16,.....	2790	20.0	29400	726000	34	38	47	58	85	95	97	VPWC
June 21,.....	5910	20.5	12300	92700	34	38	46	55	79	96	98	VPWC
June 28,.....	5910	20.0	36000	574000	37	46	53	68	90	96	98	VPWC
June 28,.....	5910	20.0	36000	574000	15	31	35	55	86	96	98	VPN
May 16, 1968	348	18.0	20100	18900	51	66	75	88	96	100	100	SPWC

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment										Methods of analysis		
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters										
					0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.00	
Jan. 16, 1969	300	1.0	1830	1480	27	31	36	48	76	94	98	100			VPWC
Jan. 16,	300	1.0	1830	1480	20	26		79							VPWC
Feb. 27,	6210	2.0	3460	58000	29	32	35	52	82	98	99	100			VPWC
Mar. 17,	8570	12.0	13100	303000	16	21	25	33	58	82	92	99	100		VPWC
Mar. 17,	8570	12.0	13100	303000	16	21	25	33	58	82	92	99	100		VPWC
May 6,	1610	19.0	24800	110000	40	46	55	71	91	96	97	99	100		VPWC
May 22,	2030	11.0	10500	57600	32	33	45	54	80	92	94	97	100		VPWC
June 27,	1980	22.0	12500	66900	44	51	61	74	87	95	96	98	100		VPWC
July 9,	8880	21.0	20600	504000	42	48	55	70	89	98	99	100			VPWC
Mar. 2, 1970	7540	4.5	21400	436000	29	35	41	52	80	95	98	100			VPWC
May 12,	6830	17.0	39200	723000	36	47	52	66	88	98	99	100			VPWC
May 14,	11100	17.0	37300	1120000	34	42	50	66	88	97	98	100			VPWC
May 14,	5470	16.0	29400	434000	27	39	54	70	93	99	100				VPWC
May 30,	1140	24.0	22100	68000	44	52	63	78	96	99	100				VPWC
Aug. 3,	774	21.0	6010	12600	46	52	61	78	94	99	100				SPWC
Feb. 18, 1971	3160	.0	6130	52300	22	27	32	42	62	85	90	99	100		VPWC
Feb. 18,	9440	.0	9350	213000	22	25	31	42	65	81	86	96	100		VPWC
Mar. 12,	3610	2.0	9310	90700	23	29	36	49	82	95	97	100			VPWC
Mar. 13,	3360	4.0	12100	110000	22	30	36	48	72	86	88	98	100		VPWC
Mar. 14,	3460	4.0	13900	130000	27	35	44	60	84	96	97	99	100		VPWC
May 7,	172	12.0	6680	3100	54	63	75	87	97	99	100				SPWC
May 11,	885	15.0	25400	60700	39	52	62	77	91	99	100				VPWC
May 18,	2120	15.0	38200	219000	35	45	55	68	79	99	99	100			VPWC
June 6,	4700	20.0	33700	428000	35	44	55	69	87	98	98	100			VPWC
June 14,	1670	22.0	31500	142000	38	55	60	84	95	99	99	100			VPWC
Feb. 28, 1972	1340	3.0	6260	22600	25	30	41	51	73	94	96	99	100		VPWC
Feb. 29,	2200	2.0	7870	46700	32	38	47	61	84	98	99	100			VPWC
Mar. 8,	303	2.0	1440	1180	57	62	77	87	96	100					SPWC
Apr. 29,	1180	16.0	7130	22700	36	41	52	70	90	99	100				VPWC
May 7,	2790	11.0	9610	72400	22	27	35	48	73	93	95	98	100		VPWC
May 27,	1800	20.0	19900	96700	35	48	62	75	93	98	99	100			VPWC
June 18,	1100	23.0	6540	19400	42	51	63	76	91	99	100				VPWC
July 19,	297	22.0	1510	1210	67	76	79	90	93	100					VPWC
July 27,	1060	24.0	3300	9450	48	56	66	82	85	98					SPWC
Aug. 7,	1920	21.0	4460	23100	54	59	72	82	85	98					VPWC

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis					
			Concentration (mg/l)	Suspended sediment discharged (tons per day)	Percent finer than indicated size, in millimeters								
Sept. 11,	5280	20.0	11200	160000	26	29	37	48	78	91	95	100	VPWC
Sept. 11,	14700	20.0	8140	323000	33	39	47	57	81	97	99	100	VPWC
Sept. 13,	27800	21.0	2870	215000	46	56	66	80	90	98	98	100	VPWC
Sept. 13,	30700	22.0	3400	282000	43	49	57	68	86	96	97	100	VPWC
Sept. 13,	34000	21.5	2920	268000	41	47	56	69	85	98	98	100	VPWC
Oct. 24, 1972	1300	7.0	2090	7340	43	47	64	66	83	93	95	99	VPWC
Dec. 30,	7030	1.0	12900	245000	21	25	30	41	65	79	83	90	VPWC
Jan. 17, 1973	3000	2.0	11200	90700	23	26	32	45	72	94	98	100	VPWC
Feb. 2,	2690	0	2660	19300	25	28	33	48	71	92	96	100	VPWC
Feb. 24,	3320	4.0	9920	88900	31	35	39	55	82	98	99	100	VPWC
Mar. 1,	3610	4.0	11300	110000	29	32	39	55	81	98	99	100	VPWC
Mar. 14,	5080	9.0	11200	154000	29	34	38	52	78	97	99	100	VPWC
Mar. 31,	4490	7.0	10400	126000	23	26	30	40	63	86	91	98	VPWC
July 4,	8140	24.0	18500	407000	29	35	42	55	93	93	96	100	VPWC
Sept. 27,	2980	17.0	25300	204000	30	35	45	58	99	99	99	100	VPWC

Miscellaneous samples collected at site but outside period of record.

May 22, 1945	11300	9700	296000
May 22,	15700	8100	343000
May 23,	5480	3880	57400
May 29, 1947	3440	10000	92900
June 2,	13900	6880	258000

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size										Methods of analysis	
				Percent finer than indicated size, in millimeters											
				.062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	
May 4, 1965	264		3	0	1	53	83	97	98	99	100				S
Apr. 6, 1966	234		5	0	1	10	38	97	99	100					S
Apr. 3, 1968	82		3		0	12	50	94	99	100					S
May 27, 1971	223	14.5				13	81	94	98	99	100				SV
Aug. 28, 1973	300	27.5	3	1	3	20	74	94	97	100					SV

NISHNABOTNA RIVER BASIN
06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA

LOCATION.--Lat 40°37'57", long 95°37'32", in SW 1/4 SE 1/4 sec. 11, T.67 N., R.42 W., Fremont County, at gaging station, on left bank 1.6 mi (2.6 km) downstream from confluence of East Nishnabotna and West Nishnabotna Rivers and 2 mi (3.2 km) northeast of Hamburg, and at mile 11.0 (17.7 km).

DRAINAGE AREA.--2,806 mi² (7,268 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--12 years (1939-51), 14,020,000 tons (12,720,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 155,000 mg/l Apr. 18, 1941; minimum daily, not determined. Sediment discharge: Maximum daily, 6,520,000 tons (5,910,000 tonnes) June 14, 1947; minimum daily, 0 ton (0.0 tonne) on several days in 1939, 1940, 1941, 1944.

REMARKS.--No important diversions or storage above station. Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		+Max.	| Min.	| Date	Date	Max.	| Min.	| Date	Date
1940	A	76,400	*	July 9	July 9	610,000	0	July 28	several days
1941	A	155,000	*	Apr. 18	Apr. 18	1,790,000	0	June 9	Jan. 18
1942	A	67,100	*	July 19	July 19	829,000	120	June 20	several days
1943	A	45,600	*	Apr. 28	Apr. 28	1,400,000	4	May 16	Sept. 30
1944	A	51,100	*	June 28	June 28	1,050,000	0	June 14	Nov. 15
1945	A	40,600	*	July 25	July 25	620,000	27	May 21	Nov. 18
1946	A	32,500	*	Mar. 6	Mar. 6	721,000	53	Sept. 4	Dec. 5
1947	A	65,700	*	Apr. 10	Apr. 10	16,520,000	100	June 14	several days
1948	A	54,000	*	Feb. 27	Feb. 27	12,690,000	33	Feb. 28	Sept. 30
1949	A	68,000	*	May 22	May 22	11,030,000	32	Mar. 7	Oct. 2, 3
1950	A	64,100	*	May 6	May 6	627,000	20	May 10	Nov. 15
1951	A	61,800	*	July 3	July 3	12,930,000	50	June 3	Mar. 10

A Published by Corps of Engineers
+ Maximum measured concentration
* Not determined

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment						Concentration (mg/l)	
		Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-foot	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
1939									
Feb.	5,420	3,885	0	130	1.4	3.2	265	9,210	
Mar.	3,358	83,513	52	2,690	30	70	23,500	23,500	
Apr.	28,447	1,807,354	85	60,200	644	1,510	22,400	13,400	
May	38,729	2,347,350	430	75,700	837	1,960	13,400	129	
June	32,532	1,175,280	190	37,900	419	.64			
July	2,195	767	0	26	.27				
August									
September									
October	1,992	3,052	0	98	1.1	2.5	567		
November	1,476	119	1.0	4.0	.04	.10	30		
December	1,513	50	1.0	1.6	.02	.04	12		
1940									
January	661	71	1.0	2.3	.03	.06	40		
February	879	534	5.0	18	.19	.45	225		
March	20,772	446,340	40	14,400	159	373	7,960		
April	6,639	25,630	40	854	9.1	21	1,430		
May	5,353	13,920	50	449	5.0	12	963		
June	7,857	320,640	40	10,700	114	268	15,100		
July	30,682	2,247,750	10	72,500	801	1,880	27,100		
August	76,130	4,375,660	520	141,000	1,560	3,650	21,300		
September	4,708	9,180	30	306	3.3	7.7	722		
Water Year 1940	158,662	7,442,946	0	20,300	2,650	6,210	17,400		
1941									
October	2,668	2,636	2.0	85	.94	2.2	366		
November	4,214	4,040	20	135	1.4	3.4	355		
December	3,833	1,430	0	46	.51	1.2	138		
Water Year 1941	164,396	7,447,831	0	20,300	2,650	6,220	16,800		
1942									
January	5,451	3,181	0	103	1.1	2.7	216		
February	9,229	91,966	4.0	3,280	33	77	3,690		
March	11,430	171,380	150	5,530	61	143	5,550		
April	14,618	1,237,590	60	41,300	441	1,030	31,400		
May	7,503	316,540	30	10,200	113	264	15,600		
June	77,816	4,594,140	140	153,000	1,640	3,830	21,900		
July	15,894	498,140	110	16,100	178	416	11,600		
August	4,685	53,065	5.0	1,710	19	44	4,200		
September	37,916	1,610,462	16	53,700	574	1,340	15,700		
Water Year 1942	195,257	8,584,570	0	23,500	3,060	7,170	16,300		
1943									
October	49,624	905,200	230	29,200	323	756	6,760		
November	31,241	240,260	440	8,010	86	201	2,850		
December	24,047	216,240	160	6,980	77	180	3,330		

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
Cal. Year 1941	289,454	9,938,164	1,790,000	0	27,200	3,540	8,300			12,700	
January....1942	31,020	46,610	8,100	120	1,500	17	39			557	
February.....	23,709	53,810	5,060	360	1,920	19	45			841	
March.....	44,376	734,930	180,000	1,560	23,700	262	613			6,130	
April.....	25,171	75,220	9,700	520	2,510	27	63			1,110	
May.....	71,182	3,817,090	666,000	660	123,000	1,360	3,190			19,900	
June.....	70,199	4,376,350	829,000	2,130	146,000	1,560	3,650			23,100	
July.....	52,269	2,056,120	572,000	810	66,300	1,733	1,720			14,600	
August.....	19,301	449,600	234,000	220	14,500	160	375			8,630	
September.....	25,948	752,750	173,000	620	25,100	268	628			10,700	
Water Year 1942	468,087	13,724,180	829,000	120	37,600	4,890	11,500			10,900	
October.....	9,244	10,142	1,960	49	327	3.6	8.5			406	
November.....	7,005	2,890	200	6.0	96	1.0	2.4			153	
December.....	9,612	40,084	14,100	5.0	1,290	14	33			1,540	
Cal. Year 1942	389,036	12,415,596	829,000	5.0	34,000	4,420	10,400			11,800	
January....1943	6,838	4,476	1,350	24	144	1.6	3.7			242	
February.....	50,616	279,684	97,000	30	9,990	100	233			2,050	
March.....	28,270	355,710	143,000	270	11,500	127	297			4,660	
April.....	13,848	146,851	74,000	28	4,900	52	123			3,930	
May.....	37,841	3,314,760	1,400,000	130	107,000	1,180	2,770			32,400	
June.....	82,007	6,044,430	860,000	1,270	201,000	2,150	5,050			27,300	
July.....	21,860	681,990	173,000	210	22,000	243	569			11,600	
August.....	32,878	1,139,700	364,000	160	36,800	406	951			12,800	
September.....	10,137	133,885	65,400	4.0	4,460	48	112			4,890	
Water Year 1943	310,156	12,154,602	1,400,000	4.0	33,000	4,330	10,100			14,500	
October.....	3,887	314	130	3.0	10	.11	.26			30	
November.....	5,050	2,473	250	0	82	.88	2.1			181	
December.....	3,704	99	5.0	2.0	3.2	.04	.08			10	
Cal. Year 1943	296,936	12,104,372	1,400,000	0	33,200	4,310	10,100			15,100	
January....1944	5,435	19,303	5,700	2.0	623	6.9	16			1,320	
February.....	7,856	66,681	16,500	1.0	2,300	24	56			3,140	
March.....	17,148	170,140	33,500	130	5,490	61	142			3,670	
April.....	35,515	1,391,550	152,000	460	46,400	496	1,160			14,500	
May.....	91,900	3,498,910	487,000	6,400	113,000	1,250	2,920			14,100	
June.....	150,010	7,399,710	1,050,000	7,590	247,000	2,640	6,180			18,300	
July.....	53,367	1,313,550	211,000	1,970	42,400	468	1,100			9,120	

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tons)			Maximum daily	Weighted mean
Just.....	48,650	1,309,010	218,000	550	42,200	467	1,090	.....	9,970
September.....	15,741	292,030	142,000	250	9,730	104	244	.....	6,870
Year 1944	438,263	15,463,770	1,050,000	0	42,200	5,510	12,900	.....	13,100
October.....	17,865	223,195	64,500	44	7,200	80	186	.....	4,630
November.....	10,411	4,388	400	27	146	1.6	3.7	.....	156
December.....	5,940	6,052	420	60	195	2.2	5.1	.....	377
Year 1944	459,838	15,694,519	1,050,000	1.0	42,900	5,590	13,100	.....	12,600
January.....	8,120	21,377	2,260	97	690	7.6	18	.....	975
February.....	19,160	222,300	64,900	100	7,940	79	186	.....	4,300
March.....	75,116	1,584,300	371,000	1,540	51,100	565	1,320	.....	7,810
April.....	73,708	2,079,810	413,000	820	69,300	741	1,740	.....	10,500
May.....	168,300	4,281,270	620,000	2,700	138,000	1,530	3,570	.....	9,420
June.....	140,410	3,962,900	395,000	17,500	132,000	1,410	3,310	.....	10,500
July.....	66,870	1,365,820	306,000	2,810	44,100	487	1,140	.....	7,560
August.....	53,242	766,910	266,000	180	24,700	273	640	.....	5,330
September.....	16,507	86,160	31,300	130	2,870	31	72	.....	1,930
Year 1945	655,649	14,604,482	620,000	27	40,000	5,200	12,200	.....	8,250
October.....	12,349	14,868	4,300	95	480	5.3	12	.....	446
November.....	10,636	6,154	1,390	84	205	2.2	5.1	.....	214
December.....	8,850	2,875	130	53	93	1.0	2.4	.....	120
Year 1945	653,268	14,394,744	620,000	53	39,400	5,130	12,000	.....	8,160
January.....	33,185	33,194	10,800	92	1,070	12	28	.....	370
February.....	64,052	515,420	162,000	580	18,400	184	430	.....	2,980
March.....	54,700	1,839,990	400,000	620	59,400	656	1,540	.....	12,500
April.....	19,773	50,280	5,100	830	1,680	18	42	.....	942
May.....	32,933	210,420	28,200	760	6,790	75	176	.....	2,370
June.....	52,839	2,176,430	693,000	220	72,500	776	1,820	.....	15,300
July.....	19,196	149,670	26,000	510	4,830	53	125	.....	2,890
August.....	38,062	792,960	240,000	260	25,600	283	662	.....	7,720
September.....	60,241	2,010,950	721,000	1,060	67,000	717	1,680	.....	12,400
Year 1946	406,816	7,803,211	721,000	53	21,400	2,780	6,510	.....	7,100
October.....	49,784	484,470	127,000	1,390	15,600	173	404	.....	3,600
November.....	32,986	93,030	8,200	1,330	3,100	33	78	.....	1,040
December.....	19,745	18,290	1,330	100	590	6.5	15	.....	343
Year 1946	477,496	8,375,104	721,000	92	22,900	2,980	6,990	.....	6,500

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
January...1947	16,340	23,380	2,360	100	754	8.3	20	.....	530	
February.....	21,575	57,190	19,000	280	2,040	20	48	.....	982	
March.....	33,264	167,190	23,900	750	5,390	60	140	.....	1,860	
April.....	81,953	4,195,500	1,650,000	1,800	140,000	1,500	3,500	.....	19,000	
May.....	61,960	1,374,010	266,000	3,160	44,300	490	1,150	.....	8,210	
June.....	493,010	28,854,100	6,520,000	46,000	962,000	10,300	24,100	.....	21,700	
July.....	90,010	1,761,970	645,000	2,140	56,800	628	1,470	.....	7,250	
August.....	26,746	85,860	36,500	400	2,770	31	72	.....	1,190	
September.....	11,253	11,900	660	260	397	4.2	9.9	.....	392	
Water Year 1947	938,626	37,126,890	6,520,000	100	102,000	13,200	31,000	.....	14,600	
October.....	10,199	12,500	1,240	130	403	4.5	10	.....	454	
November.....	13,335	23,350	4,270	130	778	8.3	19	.....	649	
December.....	10,581	11,060	1,720	62	357	3.9	9.2	.....	387	
Cal. Year 1947	870,226	36,578,010	6,520,000	62	100,000	13,000	30,500	.....	15,600	
January...1948	9,000	13,050	2,460	43	421	4.7	11	.....	537	
February.....	46,900	4,958,620	2,690,000	110	171,000	1,770	4,140	.....	39,200	
March.....	127,355	3,732,920	1,170,000	600	120,000	1,330	3,120	.....	10,900	
April.....	32,781	91,440	15,700	260	3,050	33	76	.....	1,030	
May.....	19,959	36,150	11,000	220	1,170	13	30	.....	671	
June.....	9,330	8,250	950	150	275	2.9	6.9	.....	327	
July.....	30,354	950,340	378,000	160	30,700	339	793	.....	11,600	
August.....	18,353	212,321	61,100	40	6,850	76	177	.....	4,280	
September.....	12,433	235,749	86,900	33	7,860	84	197	.....	7,020	
Water Year 1948	340,580	10,285,750	2,690,000	33	28,100	3,670	8,590	.....	13,400	
October.....	5,006	8,646	2,210	32	279	3.1	7.2	.....	640	
November.....	9,139	95,465	31,000	83	3,180	34	80	.....	3,870	
December.....	7,876	4,272	300	39	138	1.5	3.6	.....	201	
Cal. Year 1948	328,486	10,347,223	2,690,000	32	28,300	3,690	8,640	.....	11,700	
January...1949	42,400	183,020	41,000	160	5,900	65	153	.....	1,600	
February.....	33,760	250,790	89,800	210	8,960	89	209	.....	2,750	
March.....	147,144	3,185,770	1,030,000	1,530	103,000	1,140	2,660	.....	8,020	
April.....	24,072	84,370	18,800	490	2,810	30	70	.....	1,300	
May.....	23,195	909,690	632,000	410	29,300	324	759	.....	14,500	
June.....	62,327	4,210,550	746,000	1,710	140,000	1,500	3,510	.....	25,000	
July.....	24,268	391,460	136,000	290	12,600	140	327	.....	5,970	
August.....	9,789	43,810	25,900	110	1,410	16	37	.....	1,660	
September.....	8,818	50,830	16,500	100	1,690	18	42	.....	2,130	

06810000 WISHNABOTNA RIVER ABOVE HAMBURG, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment					Concentration (mg/l)	
		Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-foot	Maximum daily	Weighted mean
			Maximum	Minimum					Mean
Year 1949	397,794	9,418,673	32	25,800	3,360	7,860	8,770	
October	9,749	52,158	98	1,680	19	44	1,980	
November	5,686	1,903	20	63	.68	1.6	124	
December	6,200	4,569	17	147	1.6	3.8	273	
Year 1949	397,408	9,368,920	17	25,700	3,340	7,820	8,730	
January	3,565	4,419	83	143	1.6	3.7	459	
February	39,943	212,200	110	7,580	76	177	1,970	
March	48,406	321,260	230	10,400	114	268	2,460	
April	7,759	5,557	54	185	2.0	4.6	265	
May	72,687	2,274,530	150	73,400	811	1,900	11,600	
June	41,758	2,041,570	930	62,100	728	1,700	18,100	
July	27,657	1,001,000	210	32,300	357	836	13,400	
August	29,476	657,690	210	21,200	234	549	8,260	
September	8,250	18,062	57	1,602	6.4	15	811	
Year 1950	301,136	6,594,918	17	18,100	2,350	5,500	8,110	
October	20,632	238,888	84	7,710	85	199	4,290	
November	9,042	3,179	57	106	1.1	2.7	130	
December	6,346	6,350	120	205	2.3	5.3	371	
Year 1950	315,521	6,784,705	54	18,600	2,420	5,660	7,960	
January	5,020	4,220	120	136	1.5	3.5	311	
February	19,475	80,870	120	2,890	29	68	1,540	
March	80,786	742,771	50	24,000	265	620	3,410	
April	78,730	1,898,180	3,290	63,300	676	1,580	8,930	
May	163,880	5,747,440	9,740	185,000	2,050	4,800	13,000	
June	182,370	9,259,340	7,370	309,000	3,300	7,730	18,800	
July	98,380	4,427,670	2,670	143,000	1,580	3,700	16,700	
August	65,857	1,524,850	1,020	49,200	543	1,270	8,580	
September	39,016	327,780	820	10,900	117	274	3,110	
Year 1951	769,534	24,261,538	50	66,500	8,650	20,300	11,700	

TARKIO RIVER BASIN

06812000 TARKIO RIVER AT BLANCHARD, IOWA

LOCATION.--Lat 40°36'00", long 95°14'00", in NE 1/4 sec.29, T.67 N., R.38 W., Page County, at bridge on State Highway 333, 1 mile (1.6 km) north of Blanchard, and 8.2 mi (13.2 km) downstream from Snake Creek.

DRAINAGE AREA.--200 mi² (518 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--5 years (1934-39), 798,000 tons (724,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Not reported.

Sediment discharge: Maximum daily, 298,000 tons (270,000 tonnes) May 21, 1937; minimum daily, 0 ton (0.0 tonne) July 25, 1934, Dec. 11, 1937.

REMARKS.--Compilation of rainfall, runoff, and soil loss data, 1934-40, published by U.S. Department of Agriculture, Soil Conservation Service, Technical Publication 42, "Hydrologic Studies at the West Tarkio Creek Demonstration Project, SCS-IA-1, Shenandoah, Iowa".

ANNUAL EXTREMES

Water year	W.S.P. no.	Daily suspended sediment					
		Concentrations (mg/l)		Loads (tons)			
		Max.	Date	Min.	Date		
1935	A	*		42,000	June 26	0.01	several days
1936	A	*		132,000	Apr. 28	.02	Dec. 28, Jan. 17, 30, Feb. 21
1937	A	*		298,000	May 21	t	many days
1938	A	*		95,800	May 31	0	Dec. 11
1939	A	*		208,000	Mar. 12	t	several days

A Iowa Geological Survey, Water Supply Bulletin No. 5

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Suspended sediment			Tons per sq mi	Acre-feet daily	Concentration (mg/l) Maximum daily	Weighted mean
		Load (tons)	Daily loads (tons)	Mean				
April.....1934	134.05	64.8	25	-10	30	.32	.05	179
May.....	163.57	5,943.02	5,090	-01	192	5.0		13,500

06812000 TARKIO RIVER AT BLANCHARD, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum			Maximum daily	Weighted mean
			Maximum	Minimum						
June.....	74.61	2,610.26	1,170	.01	87	13	2.2	.....	13,000
July.....	12.99	61.99	39	0	2.0	.31	.05	.....	1,770
August.....	7.66	43.13	43	t	1.4	.22	.04	.....	2,090
September.....	295.74	2,112.35	948	.04	70	11	1.8	.....	2,650
October.....	433.22	7,139.95	5,260	.01	230	36	6.0	.....	6,100
November.....	271.65	1,376.9	281	.10	46	6.9	1.1	.....	1,880
December.....	115.69	22.7	2.9	.01	.73	.11	.02	.....	.73
January..... 1935	877.22	14,015.04	13,600	.02	452	70	12	.....	5,920
February.....	489.82	11,470.94	6,320	.03	410	57	9.6	.....	8,670
March.....	336.43	1,985.8	720	.02	64	9.9	1.7	.....	2,190
April.....	53.08	1.74	.50	.01	.06	.01	0	.....	12
May.....	1,366.75	62,597.85	34,300	.02	2,020	313	52	.....	17,000
June.....	4,297.3	138,650.6	42,000	2.8	4,620	693	116	.....	11,900
July.....	931.9	21,547.7	19,100	.90	695	108	18	.....	8,560
August.....	37.33	5.68	.80	.03	.18	.03	0	.....	56
September.....	187.2	723.5	234	.10	24	3.6	.60	.....	1,430
Water Year 1935	9,397.59	259,538.40	42,000	.01	711	1,300	217	.....	10,200
October.....	335.46	3,695.44	1,520	.05	119	18	3.1	.....	4,080
November.....	827.8	7,359	3,770	.10	245	37	6.1	.....	3,290
December.....	310.9	37.92	6.8	.02	1.2	.19	.03	.....	45
Cal. Year 1935	10,051.19	262,091.21	42,000	.01	718	1,310	219	.....	9,660
January..... 1936	250.7	3.31	.90	.02	.11	.02	0	.....	5
February.....	3,501.2	25,156.07	7,650	.02	867	126	21	.....	2,660
March.....	6,111	198,364.7	85,100	4.2	6,400	992	166	.....	12,000
April.....	1,279.4	147,667.8	132,000	.10	4,920	738	123	.....	42,700
May.....	2,679	122,767.8	53,700	1.0	3,960	614	102	.....	17,000
June.....	1,190	75,167.5	48,300	.40	2,510	376	63	.....	23,400
July.....	35.29	11.88	5.3	.04	.38	.06	.01	.....	125
August.....	24.36	104.28	100	.04	3.4	.52	.09	.....	1,590
September.....	1,293.5	55,424.87	37,400	.07	1,850	277	46	.....	15,900
Water Year 1936	17,838.61	635,760.57	132,000	.02	1,740	3,180	531	.....	13,200
October.....	1,142.4	68,163.66	59,900	.05	2,200	341	57	.....	22,100
November.....	119.2	1,085.97	901	.08	36	5.4	.91	.....	3,370
December.....	440.54	38,734.66	34,800	.02	1,250	194	32	.....	32,600
Cal. Year 1936	18,066.59	732,652.50	132,000	.02	2,000	3,660	612	.....	15,000
January..... 1937	39.76	188.36	80	t	6.1	.94	.16	.....	1,750

06812000 TARKIO RIVER AT BLANCHARD, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Suspended sediment						Concentration (mg/l)	
		Load (tons)	Daily loads (tons)		Tons per sq mi.	Acres	Maximum daily	Weighted mean	
			Maximum	Minimum					Mean
February	6,336.77	82,275.8	t	2,940	411	69	.....	4,810
March	5,757.5	268,760.3	.80	8,670	1,340	224	.....	17,300
April	1,040.6	99,951.5	1.6	3,330	500	83	.....	35,600
May	4,265.5	573,876.4	.20	18,500	2,870	479	.....	49,800
June	2,485.5	177,321.6	.20	5,910	887	148	.....	30,100
July	1,653.27	133,080.1	.05	4,290	665	111	.....	29,800
August	36.51	6.76	.01	.22	.03	.01	.....	69
September	10.57	.28	t	.01	0	0	.....	10
Water Year 1937	23,028.12	1,443,445.39	t	3,950	7,220	1,200	.....	23,200
October	15.78	.49	t	.02	0	0	.....	12
November	13.16	.31	t	.01	0	0	.....	9
December	9.21	.04	0	0	0	0	.....	2
Cal. Year 1937	21,364.13	1,335,451.94	0	3,660	6,680	1,110	.....	23,200
January	12.19	.06	t	0	0	0	.....	2
February	57.92	14.74	t	.53	.07	.01	.....	94
March	43.31	7.46	.01	.24	.04	.01	.....	64
April	431.92	47,811.6	.01	1,590	239	40	.....	41,000
May	1,463.22	152,719.4	.07	4,930	764	127	.....	38,700
June	1,061.74	81,097.92	.02	2,700	405	68	.....	28,300
July	53.89	362.79	.01	12	1.8	.30	.....	2,490
August	2,310.43	111,430	.07	3,590	557	93	.....	17,900
September	1,334.96	56,515.07	.02	1,880	283	47	.....	15,700
Water Year 1938	6,807.73	449,959.88	0	1,230	2,250	376	.....	24,500
October	13.9	1	t	.03	.00	0	.....	27
November	126.69	809.21	.01	27	4.0	.68	.....	2,370
December	31.14	2.17	t	.07	.01	0	.....	26
Cal. Year 1938	6,941.31	450,771.42	t	1,230	2,250	376	.....	24,100
January	46.11	5.15	.01	.17	.03	0	.....	41
February	268.42	2,583.48	t	92	13	2.2	.....	3,560
March	10,628.13	497,553.8	.30	16,100	2,490	415	.....	17,300
April	193.5	2,138.13	.02	71	11	1.8	.....	4,090
May	68.1	256.96	.03	8.3	1.3	.21	.....	1,400
June	5,358.3	471,957.4	.20	15,700	2,360	394	.....	32,600
July	3,099.3	182,649.7	.07	5,890	913	152	.....	21,800
August	1,314.95	41,601.96	.08	1,340	208	35	.....	11,700
September	7.4	.67	t	.02	0	0	.....	34
Water Year 1939	21,155.94	1,199,559.63	t	3,290	6,000	1,000	.....	21,000

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
October.....	21	.21	.08	0	0	.01	0	0	.....	4
November.....	16.8	.06	.01	0	0	0	0	0	.....	1
December.....	17.1	.08	.01	0	0	0	0	0	.....	2
Cal. Year 1939	21,039.11	1,198,747.60	208,000	0	0	3,280	5,990	1,000	.....	21,100
January.....1940	6.2	.22	.03	0	0	.01	0	0	.....	13
February.....	50.3	2.73	.30	.00	.00	.09	.01	0	.....	20
March.....	590.4	5,706.5	4,020	.40	.40	184	29	4.8	.....	3,580
April.....	410	6,653.73	4,170	.05	.05	222	33	5.6	.....	6,010
May.....	285.5	335.57	146	.05	.05	11	1.7	.28	.....	435
June.....	210.3	5,095.59	2,120	.09	.09	170	25	4.3	.....	8,970

PLATTE RIVER BASIN

06818750 PLATTE RIVER NEAR DIAGONAL, IOWA

LOCATION.--Lat 40°46'02", long 94°24'46", in NE 1/4 NW 1/4 sec. 22, T. 69 N., R. 31 W., Ringgold County, on left bank at downstream side of bridge on county highway, 2.2 mi (3.5 km) upstream from Turkey Creek, 4.6 mi (7.4 km) southwest of Diagonal, and 4.9 mi (7.9 km) downstream from Gard Creek.

DRAINAGE AREA.--217 mi² (562 km²).

REMARKS.--Records of periodic suspended sediment.

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis
			Concentration (mg/l)	Percent finer than indicated size, in millimeters	Suspended sediment discharge (tons per day)	Visual accumulation tube	
May 7, 1968	16	16.0	44		1.9		
June 5,	9.6	24.0	94		2.4		
Sept. 5,	64	17.0	445		77		
Feb. 4, 1969	2.5	.0	15		.10		
May 8,	3760	17.0	1580		16000		
July 9,	3840	23.0	944		9790		
Nov. 5, 1969	24	9.0	51		3.3		
Jan. 8, 1970	3.0	.0	42		.34		
Feb. 4,	5.6	.0	22		.33		
Mar. 4,	110	6.0	1030		306		
Apr. 8,	23	16.0	31		1.9		
July 8,	3.8	32.0	11		.11		
Jan. 20, 1971	14	.0	14		.50		
Mar. 3,	62	2.5	78		13		
Apr. 14,	20	19.0	16		.90		
May 24,	6090	15.0	3520	67	57900	67	72
Aug. 18,	3.2	35.0	13	89	.10	89	95
Cct. 6, 1971	2.3		2	100	.01	100	99

VPWC

06818750 PLATTE RIVER NEAR DIAGONAL, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment			Methods of analysis
			Concentration (mg/l)	Percent finer than indicated size, in millimeters	Suspended sediment discharge (tons per day)	
Feb. 8, 1972	2.6	.0	17		.12	
Mar. 15,	21	10.5	126		7.1	
Apr. 19,	8.0	12.5	19		.41	
June 1,	31	23.0	119		10	
Sept. 12,	4710	21.5	1110		14100	
Sept. 13,	5820	22.5	686		10800	
Sept. 14,	2010	22.0	1130		6130	
Oct. 6, 1972	27	15.5	40		2.9	
Dec. 20,	56	.0	17		2.6	
Jan. 31, 1973	139	.0	172		65	
Feb. 28,	149	7.0	209		84	
May 23,	58	17.0	46		7.2	
June 26,	17	23.0	18		.83	
Aug. 8,	35	27.0	241		23	

GRAND RIVER BASIN

06897950 ELK CREEK NEAR DECATUR CITY, IOWA
(Hydrologic bench-mark station)

LOCATION.--Lat 40°43'18", long 93°56'19", near the southeast corner sec.34, T.69 N., R.27 W., Decatur County, on right bank 300ft (91 m) upstream from bridge on county highway, 700 ft (213 m) downstream from West Elk Creek, 5.2 mi (8.4 km) upstream from mouth, and 5.7 mi (9.2 km) southwest of Decatur City.

DRAINAGE AREA.--52.5 mi² (136 km²).

REMARKS.--Records of periodic suspended sediment.

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
May 31, 1967	86	13.0	680	158
June 6,.....	4.2	28.5	22	.25
Nov. 7, 1967	.17	6.0	25	.01
Dec. 5,.....	.10	2.0	84	.02
Feb. 6, 1968	2.9	1.0	7	.05
Mar. 5,.....	1.8	3.0	93	.45
Apr. 2,.....	1.4	8.0	28	.11
June 4,.....	.49	30.0	14	.02
July 2,.....	.02	29.0	96	.01
Sept. 4,.....	.14	23.0	14	.01
Oct. 9, 1968	.17	13.0	34	.02
Nov. 6,.....	.03	6.0	23	.00
Dec. 4,.....	.19	1.0	13	.01
Feb. 4, 1969	.32	.0	1	.00
Mar. 4,.....	17	1.0	214	9.8
Apr. 8,.....	34	7.0	340	31
June 6,.....	3.4	21.0	41	.38
Aug. 7,.....	3.1	23.5	27	.23
Sept. 5,.....	.60	23.0	18	.03
Nov. 6, 1969	4.0	8.0	15	.16
Dec. 4,.....	.92	.0	37	.09
Feb. 5, 1970	.20	.0	63	.03
Mar. 4,.....	5.0	1.0	143	1.9
Apr. 8,.....	9.6	15.0	46	1.2
May 7,.....	12	21.0	55	1.8
June 3,.....	5.5	15.0	23	.34
July 8,.....	.04	31.0	154	.02
July 27,.....	.01	31.0	35	.00
Aug. 20,.....	.30	22.5	99	.08

06897950 ELK CREEK NEAR DECATUR CITY, IOWA--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (C0010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Oct. 21, 1970	5.3	9.5	44	.63
Nov. 5,.....	9.3	4.5	41	1.0
Dec. 9,.....	8.6	.0	55	1.3
Jan. 20, 1971	4.7	.0	103	1.3
Mar. 3,.....	20	.0	48	2.6
Apr. 15,.....	3.8	11.0	16	.16
May 25,.....	5.4	17.0	77	1.1
Feb. 9, 1972	.11	.0	109	.03
Mar. 16,.....	10	5.0	17	.46
May 9,.....	75	12.0	365	74
July 13,.....	.52	25.5	78	.11
Sept. 13,.....	79	22.5	408	87
Oct. 6, 1972	2.3	5.0	79	.49
Dec. 21,.....	8.8	.0	26	.62
Feb. 1, 1973	4600	1.0	5540	68800
Mar. 1,.....	41	6.5	173	19
May 23,.....	6.4	19.5	33	.57
June 27,.....	1.4	18.5	66	.25
Aug. 9,.....	191	20.5	5590	2880
Sept. 20,.....	6.7	15.0	15	.27

GRAND RIVER BASIN

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA

LOCATION.--Lat 40°38'25", long 93°48'29", in SE1/4 SE1/4 sec.35, T.68 N., R.26 W., Decatur County, 40 ft (12 m) upstream from gaging station, on upstream side of bridge on U.S. Highway 69 at Davis City, 2.6 mi (4.2 km) upstream from Dickersons Branch, and 5.2 mi (8.4 km) upstream from Iowa-Missouri State line.

DRAINAGE AREA.--701 mi² (1,816 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--9 years (1949-53, 1968-73), 1,231,000 tons (1,117,000 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 27,000 mg/l Feb. 26, 1969; minimum daily, not determined. Sediment discharge: Maximum daily, 260,000 tons (236,000 tonnes) May 26, 1951; minimum daily, 0 ton (0.0 tonne) Oct. 26, 1953.

REMARKS.--Flow affected by ice during winter months each year. Records of suspended-sediment furnished by the Corps of Engineers for the period 1949-54.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Loads (tons)			
		Max.	Min.	Date	Max.	Min.	Date	Date	
1950	A	15,500b	*	May 9	195,000	0.8	May 10	Nov. 4	
1951	A	17,400b	*	Apr. 25	260,000	.2	May 26	Jan. 30	
1952	A	11,400b	*	June 21	68,100	.8	Mar. 19	Nov. 7	
1953	A	13,900b	*	Mar. 30	74,200	.9	June 11	Sept. 24, 30	
1969	2145	27,000	5	Feb. 26	55,500	.24	July 19	Dec. 4	
1971	2165	10,100	18	Mar. 15	55,500	.66	May 8	Sept. 2	
1972	+	7,180	17	Sept. 12	89,300	.45	Sept. 12	Oct. 12	
1973	+	8,620	25	Apr. 16	169,000	5.9	Apr. 16	Oct. 17	

A Published by Corps of Engineers

b Maximum measured concentration

* Not determined

† Water Resources Data for Iowa, Part 2, Water Quality Records

0689800 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acres	Concentration (mg/l)	
			Maximum	Daily loads (tcns)		Mean	Maximum daily			Weighted mean	
				Minimum	Maximum						Minimum
June.....1949	20,139	333,129	55,400	12	11,100	475	278	.....	.....	6,130
July.....	6,950	65,471	37,400	10	2,110	93	55	.....	.....	3,490
August.....	2,962	20,724.9	8,550	4.3	669	30	17	.....	.....	2,590
September.....	1,844	10,501.7	10,100	3.4	350	15	8.8	.....	.....	2,110
October.....	684	267	41	2.2	8.6	.38	.22	.....	.....	145
November.....	502	65.6	6.2	.80	2.2	.09	.05	.....	.....	48
December.....	669.2	1,134.5	704	.70	37	1.6	.95	.....	.....	628
January.....1950	1,970	8,538.2	2,670	1.9	275	12	7.1	.....	.....	1,610
February.....	15,386	71,752.1	22,000	1.6	2,560	102	60	.....	.....	1,730
March.....	12,571	61,458	25,700	22	1,980	88	51	.....	.....	1,810
April.....	1,925	695.7	95	3.8	23	.99	.58	.....	.....	134
May.....	28,858	460,059	195,000	11	14,800	656	384	.....	.....	5,900
June.....	30,361	459,701	140,000	24	15,300	656	384	.....	.....	5,610
July.....	4,943	53,002.4	41,100	5.2	1,710	76	44	.....	.....	3,970
August.....	7,384	73,868.5	46,700	5.9	2,380	105	62	.....	.....	3,710
September.....	716.8	422.4	190	2.2	14	.60	.35	.....	.....	218
Water Year 1950	105,970.00	1,190,964.40	195,000	.70	3,260	1,700	994	.....	.....	4,160
October.....	436.5	122.9	18	1.6	4.0	.18	.10	.....	.....	104
November.....	397.2	58.9	6.4	.40	2.0	.08	.05	.....	.....	55
December.....	173.8	15.2	1.4	.30	.49	.02	.01	.....	.....	32
Cal. Year 1950	105,122.30	1,189,694.30	195,000	.30	3,260	1,700	993	.....	.....	4,190
January.....1951	198.6	53.4	4.5	.20	1.7	.08	.04	.....	.....	100
February.....	21,580.8	136,907.8	43,900	.50	4,890	195	114	.....	.....	2,350
March.....	26,350	399,747	74,800	10	12,900	570	334	.....	.....	5,620
April.....	40,318	556,711	139,000	219	18,600	794	465	.....	.....	5,110
May.....	80,604	997,508	260,000	321	32,200	1,420	833	.....	.....	4,580
June.....	38,380	278,439	45,600	356	9,280	397	232	.....	.....	2,690
July.....	17,308	142,237	72,800	12	4,590	203	119	.....	.....	3,040
August.....	6,074.3	44,444.1	22,900	2.5	1,430	63	37	.....	.....	2,710
September.....	4,640	13,525.7	4,870	7.0	451	19	11	.....	.....	1,080
Water Year 1951	236,461.20	2,569,770.00	260,000	.20	7,040	3,670	2,140	.....	.....	4,030
October.....	4,227	4,086.9	1,810	5.5	132	5.8	3.4	.....	.....	358
November.....	11,883	110,612.9	50,200	.80	3,690	158	92	.....	.....	3,450
December.....	2,522	449.8	37	6.1	15	.64	.38	.....	.....	66
Cal. Year 1951	254,085.70	2,684,722.60	260,000	.20	7,360	3,830	2,240	.....	.....	3,910

0689800 THOMPSON RIVER AT LAVIS CITY, IOWA--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
January...1952	8,129	15,499.1	5,090	6.0	500	22	13	.....	706
February.....	4,953	2,210	139	22	78	3.2	1.8	.....	165
March.....	38,670	338,609	68,100	11	10,900	483	283	.....	3,240
April.....	11,435	27,383	9,120	127	913	39	23	.....	887
May.....	19,119	175,705.9	58,500	7.2	5,670	251	147	.....	3,400
June.....	19,294	235,560	64,900	31	7,990	342	200	.....	4,600
July.....	3,301	7,376	1,880	10	238	11	6.2	.....	828
August.....	2,242	5,734.1	1,450	3.3	185	8.2	4.8	.....	947
September.....	473.6	171.7	8.1	3.2	5.7	.24	.14	.....	134
Water Year 1952	126,248.60	927,358.40	68,100	.80	2,540	1,320	774	.....	2,720
October.....	244.7	147.4	28	1.8	4.8	.21	.12	.....	223
November.....	6,045.5	9,845.7	3,790	2.4	328	14	8.2	.....	603
December.....	1,540	2,749	240	44	89	3.9	2.3	.....	661
Cal. Year 1952	115,446.80	824,950.90	68,100	1.8	2,260	1,180	689	.....	2,650
January...1953	1,689	347.2	64	1.9	11	.50	.29	.....	76
February.....	12,632	83,365.3	30,600	6.9	2,870	119	70	.....	2,440
March.....	16,448	132,231	60,600	65	4,270	189	110	.....	2,980
April.....	16,381	114,233	49,900	54	3,810	163	95	.....	2,580
May.....	8,493	25,613	7,940	19	826	37	21	.....	1,120
June.....	11,110	157,819	74,200	18	5,260	225	132	.....	5,260
July.....	1,457	822.8	181	5.7	27	1.2	.69	.....	209
August.....	383.7	172.1	23	2.3	5.6	.25	.14	.....	166
September.....	123.8	67	5.7	.90	2.2	.10	.06	.....	200
Water Year 1953	76,547.70	527,412.50	74,200	.90	1,440	752	440	.....	2,550
October.....	98.7	41.1	5.8	0	1.3	.06	.03	.....	154
November.....	125.9	88.6	15	.30	3.0	.13	.07	.....	261
December.....	92	11.2	1.0	.10	.36	.02	.01	.....	45
Cal. Year 1953	69,034.10	514,811.30	74,200	0	1,410	734	430	.....	2,760
January...1954	56.4	5.2	.50	.10	.17	.01	0	.....	34
February.....	229.5	90.7	19	.10	3.2	.13	.08	.....	146
March.....	331.2	313	144	.20	10	.45	.26	.....	350
April.....	1,259.1	8,327.8	5,420	1.5	278	12	7.0	.....	2,450
May.....	3,357.5	43,315.5	21,200	1.7	1,400	62	36	.....	4,780
June.....	14,452	204,337	53,500	14	6,810	291	171	.....	5,240
April.....1968	13,069	202,146.2	122,000	2.1	6,740	288	169	.....	5,730
May.....	1,885	304.9	53	3.0	9.8	.43	.25	.....	60

06898C00 THOMPSON RIVER AT LAVIS CITY, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Daily loads (tons)		Mean	Maximum daily			Weighted mean	
				Minimum	Maximum						Minimum
June.....	2,356	29,871.7	13,600	2.0	996	43	25	6,700	4,700		
July.....	1,615.2	15,796.2	5,930	2.1	510	23	13	5,600	3,620		
August.....	4,327.5	73,616.4	61,600	1.2	2,370	105	61	8,190	6,300		
September.....	294.1	50.9	5.6	.30	1.7	.07	.04	91	64		
October.....	178.7	28.4	2.1	.33	.92	.04	.02	84	59		
November.....	318.6	36.77	4.9	.38	1.2	.05	.03	200	43		
December.....	1,568.3	1,765.02	887	.24	57	2.5	1.5	764	417		
January.....1969	9,349.6	18,852.75	6,860	.63	608	27	16	1,400	747		
February.....	7,637	57,534	32,800	.50	1,980	82	48	27,000	2,790		
March.....	11,297	43,139	10,400	7.3	1,390	62	36	3,000	1,410		
April.....	21,247	261,220	79,300	14	8,710	373	218	9,400	4,550		
May.....	24,052	186,390	55,900	34	6,010	266	156	5,200	2,870		
June.....	20,515	266,482	89,600	14	8,880	380	222	8,360	4,810		
July.....	56,568	807,181	234,000	146	26,000	1,150	674	11,200	5,280		
August.....	4,781	16,441.3	6,920	8.3	530	23	14	3,530	1,270		
September.....	4,446	36,626.3	26,100	4.3	1,220	52	31	5,910	3,050		
Water Year 1969	161,958.20	1,655,696.54	234,000	.24	4,630	2,420	1,420	27,000	3,880		
October.....	3,269	2,426.7	843	3.6	78	3.5	2.0	594	275		
November.....	6,056	11,117.9	7,530	3.3	371	16	9.3	1,620	680		
December.....	1,678	335.7	35	3.2	11	.48	.28	367	74		
Cal. Year 1969	170,895.60	1,707,746.65	234,000	.50	4,670	2,440	1,430	27,000	3,700		
January...1970	3,970	4,590.6	1,430	2.4	148	6.5	3.8	882	428		
February.....	2,036	1,510.27	857	.97	54	2.2	1.3	1,270	275		
March.....	7,507	49,477.6	25,200	2.4	1,600	71	41	4,600	2,440		
April.....	15,339	136,673.7	43,400	9.3	4,560	195	114	8,500	3,300		
May.....	16,044	142,309	43,900	17	4,590	203	119	7,140	3,290		
June.....	2,329	1,835.7	371	5.2	61	2.6	1.5	1,880	292		
July.....	596	1,994.4	1,760	3.8	64	2.8	1.7	5,780	1,240		
August.....	5,854	80,391.4	38,500	3.3	2,590	115	67	8,710	5,090		
September.....	10,024	90,759.7	17,700	3.1	3,030	130	76	4,890	3,350		
Water Year 1970	74,702	523,462.67	43,900	.97	1,430	747	437	8,710	2,600		
October.....	9,923	61,865.9	35,100	4.8	2,000	88	52	7,260	2,310		
November.....	12,751	56,654	27,300	14	1,890	81	47	4,320	1,650		
December.....	7,463	10,557	4,340	11	341	15	8.8	2,040	524		
Cal. Year 1970	93,836	638,659.27	43,900	.97	1,750	911	533	8,710	2,520		
January.....1971	1,804	515.7	62	4.4	17	.74	.43	440	106		

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Maximum	Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
				Minimum	Mean					
February.....	28,439	129,314.5	28,400	3.5	4,620	184	108	3,820	1,680	
March.....	19,528	125,186	46,600	52	4,040	179	104	10,100	2,370	
April.....	3,941	2,557.4	986	5.6	85	3.6	2.1	1,000	240	
May.....	20,543	208,752	55,500	19	6,730	298	174	7,970	3,760	
June.....	3,287	1,416	182	13	47	2.0	1.2	355	160	
July.....	1,094	327.9	37	3.5	11	.47	.27	160	111	
August.....	524.7	705.42	414	.92	23	1.0	.59	1,380	498	
September.....	440.1	524.04	261	.66	17	.75	.44	1,180	441	
Water Year 1971	109,737.80	598,375.86	55,500	.66	1,640	854	499	10,100	2,020	
October.....	306.3	111.36	42	.45	3.6	.16	.09	216	135	
November.....	4,476	31,740.1	23,200	2.1	1,060	45	26	4,670	2,630	
December.....	2,904	2,708.6	1,300	1.9	87	3.9	2.3	1,030	345	
Cal. Year 1971	87,287.10	503,859.02	55,500	.45	1,380	719	421	10,100	2,140	
January.....1972	792	193.1	11	2.3	6.2	.28	.16	126	90	
February.....	1,698.6	811.9	109	2.3	29	1.2	.68	722	177	
March.....	2,319	419.2	48	2.9	14	.60	.35	140	67	
April.....	4,446	26,780.3	13,100	3.9	893	38	22	3,640	2,230	
May.....	26,289	180,962	86,200	17	5,840	258	151	4,950	2,550	
June.....	4,801	18,797.1	8,260	7.0	627	27	16	3,310	1,450	
July.....	5,954	30,833.5	12,700	4.7	995	44	26	3,550	1,920	
August.....	2,299	1,109.2	370	3.9	36	1.6	.93	461	179	
September.....	47,514	312,330.7	89,300	3.9	10,400	446	261	7,180	2,430	
Water Year 1972	103,798.90	606,797.06	89,300	.45	1,660	866	506	7,180	2,170	
October.....	5,098	3,301.2	1,400	5.9	106	4.7	2.8	716	240	
November.....	31,710	102,994	19,200	38	3,430	147	86	3,000	1,200	
December.....	20,879	135,126.8	70,800	9.8	4,360	193	113	3,860	2,400	
Cal. Year 1972	153,799.60	813,659.00	89,300	2.3	2,230	1,160	679	7,180	1,960	
January.....1973	31,395	76,359	18,100	39	2,460	109	64	2,020	901	
February.....	51,764	232,456	48,600	130	8,020	332	194	3,090	1,660	
March.....	67,005	543,198	162,000	249	17,500	775	453	8,380	3,000	
April.....	77,575	723,779	169,000	126	24,100	1,030	604	8,670	3,460	
May.....	46,147	315,153	54,400	79	10,200	450	263	4,310	2,530	
June.....	8,380	30,787	7,620	23	1,030	44	26	3,400	1,360	
July.....	14,981	90,536	34,100	11	2,920	129	76	4,670	2,240	
August.....	14,141	77,250	33,100	17	2,490	110	64	3,450	2,020	
September.....	22,454	110,700	41,700	12	3,690	158	92	2,780	1,830	
Water Year 1973	391,529	2,441,640	169,000	5.9	6,670	3,480	2,040	8,670	2,310	

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED
 PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Concentration (mg/l)	Suspended sediment discharge (tons per day)	Suspended sediment					Methods of analysis		
					Percent finer than indicated size, in millimeters	100	75	50	25			
June 11, 1968	916	22.0	6900	17100	53	63	76	89	95	99	100	VPWC
July 24,	220	27.0	4160	2480	65	77	41	95	97	100	86	SPWC
Aug. 4,	4410	27.0	11800	141000	32	35	41	50	76	86	100	VPWC
Apr. 4, 1969	1130	15.0	12200	37200	43	49	55	74	92	99	100	VPWC
May 8,	5630	20.0	5030	76500	51	54	60	69	85	95	98	VPWC
May 23,	1940	16.0	2870	15000	43	54	60	71	87	96	100	SPWC
June 12,	4240	19.0	10100	116000	48	56	68	83	96	99	100	SPWC
June 28,	2250	16.0	12300	74700	35	42	49	60	79	94	99	VPWC
July 5,	1370	24.0	11200	41400	43	51	58	73	93	99	100	SPWC
July 18,	6080	27.0	11600	190000	21	25	29	34	49	66	84	VPWC
Aug. 22,	780	26.0	2330	4910	57	66	73	87	91	99	100	SPWC
Sept. 7,	1660	24.0	3490	15600	38	39	50	62	81	95	100	SPWC
Nov. 1, 1969	1650	10.0	2210	9850	45	48	54	68	80	90	97	VPWC
Mar. 4, 1970	2030	4.5	5200	28500	47	48	54	69	87	97	98	VPWC
Mar. 5,	2000	3.5	3870	20900	41	46	48	60	76	87	94	VPWC
Mar. 5,	2000	3.5	3870	20900	35	43	48	58	78	87	94	VPN
Apr. 13,	1760	10.0	6140	29200	47	48	60	73	99	94	100	SPWC
Apr. 19,	2370	10.0	5990	38300	41	46	54	66	84	90	100	SPWC
May 14,	4590	19.0	5780	71600	50	57	61	70	82	90	96	VPWC
Aug. 8,	1840	24.5	7020	34900	41	44	52	59	74	83	94	VPWC
Sept. 16,	1080	16.0	3190	9300	51	58	65	73	81	96	98	VPWC
Dec. 11, 1970	525	4.5	1530	2170	60	63	70	91	95	99	100	SPWC
Mar. 15, 1971	1710	5.5	2760	12700	46	48	56	72	88	97	100	SPWC
May 6,	1200	12.0	12700	41100	47	54	66	82	97	100	100	VPWC
May 8,	3280	18.0	8480	75100	40	46	53	68	86	94	97	VPWC
May 20,	1100	20.5	3940	11700	36	42	48	62	86	97	100	SPWC
May 25,	2750	15.0	6180	45900	46	55	64	74	88	98	100	SPWC
May 26,	1840	15.5	2840	14100	46	55	58	68	80	94	97	VPWC
June 16, 1972	894	25.5	3370	8130	58	69	82	92	97	99	99	SPWC
June 17,	1280	24.0	3480	12000	56	67	77	88	94	99	100	SPWC
July 26,	1730	24.5	6990	32700	31	37	45	59	66	96	96	VPWC
July 27,	574	24.5	2230	3460	54	63	76	86	94	99	99	SPWC

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieves; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis						
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters								
Sept. 12,	4520	21.0	13300	162000	19	22	24	35	55	79	95	100	VPWC
Sept. 12,	7870	21.5	4550	96700	32	36	40	45	65	77	87	100	VPWC
Dec. 30, 1972	6850	3.5	4740	87700	24	27	32	41	64	89	94	100	VPWC
Mar. 26, 1973	5920	9.0	2440	39000	31	34	39	46	60	80	91	99	VPWC
Mar. 31,	7910	10.0	15600	333000	29	33	38	49	71	91	97	100	VPWC
Mar. 31,	9220	9.0	13100	326000	34	38	44	55	74	90	96	100	VPWC
May 3,	3690	14.0	3850	38400	45	47	51	58	71	89	93	99	VPWC
July 5,	2280	26.5	3920	24100	47	55	64	76	96	96	98	100	VPWC
July 6,	1030	26.5	2220	6170	59	67	77	87	99	99	99	98	SPWC
July 20,	1020	24.5	2120	5840	42	51	60	75	98	98	98	98	SPWC
Sept. 25,	4700	19.5	2990	37900	31	38	45	59	93	93	97	100	VPWC

Miscellaneous samples collected at site but outside period of record.

Apr. 17, 1945 8840 4110 98100

CHARITON RIVER BASIN
06903400 CHARITON RIVER NEAR CHARITON, IOWA

LOCATION.--Lat 40°57'12", long 93°15'37", in SW 1/4 NE 1/4 sec.15, T.71 N., R.21 W., Lucas County, near center of span on downstream side of bridge on county highway S43, 15 ft (5 m) upstream from gaging station, 0.4 mi (0.6 km) downstream from Wolf Creek and 5.0 mi (8.0 km) southeast of Chariton.

DRAINAGE AREA.--182 mi² (471 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 3,780 mg/l May 19, 1971; minimum daily, 3 mg/l Dec. 17, 1965.

Sediment discharge: Maximum daily, 21,600 tons (19,600 tonnes) Aug. 8, 1970; minimum daily, 0.06 ton (0.054 tonnes) July 14, 1970, Jan. 30, 31, 1972.

REMARKS.--Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Daily suspended sediment				
		Concentrations (mg/l)		Loads (tons)		
		Max.	Min.	Date	Date	
1970	2155	1,750	3	Dec. 17	21,600 Aug. 8	0.06 July 14
1971	2165	3,780	11	Jan. 23, Feb. 8, 14	2,420 May 19	.11 Feb. 8, 14
1972	A	2,260	12	Jan. 30, 31	2,060 May 8	.06 Jan. 30, 31
1973	A	3,560	5	Dec. 25	11,700 June 18	.10 Oct. 19, 21

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MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tcns)	Daily loads (tons)			Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean			Maximum daily	Weighted mean
October.....1969	1,047	396.52	325	.07	13	2.2	.33	290	140
November.....	1,602.7	451.31	183	.18	15	2.5	.38	180	104
December.....	336.3	10.15	.96	.09	.33	.06	.01	42	11
January.....1970	1,825.2	588.16	134	.07	19	3.2	.49	720	119
February.....	368.3	150.49	26	.38	6.8	1.0	.16	1,000	192
March.....	2,040.5	1,924.39	706	.43	62	11	1.6	820	349

06903400 CHARITON RIVER NEAR CHARITON, ICWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tcns)	Suspended sediment					Tons per sq mi	Acres-foot	Concentration (mg/l)	
			Daily loads (tcns)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
April.....	8,383	9,158.2	2,130	1.6	305	50	7.6	920	405		
May.....	6,838.7	8,996.8	4,440	1.8	290	49	7.5	1,000	487		
June.....	246.3	152.11	26	.49	5.1	.84	.13	410	229		
July.....	436.63	2,040.6	1,300	.06	66	11	1.7	1,750	1,730		
August.....	9,292.78	24,890.69	21,600	.26	803	137	21	1,400	992		
September.....	6,545.2	7,410.06	3,000	.15	247	41	6.2	570	419		
Water Year 1970	38,962.61	56,209.48	21,600	.06	154	309	47	1,750	534		
October.....	7,308.5	2,222.44	919	.86	72	12	1.9	302	113		
November.....	1,131	98.42	18	.57	3.3	.54	.08	73	32		
December.....	1,574.3	440.96	114	.19	14	2.4	.37	192	104		
Cal. Year 1970	45,990.41	58,113.32	21,600	.06	159	319	49	1,750	468		
January.....	215.7	18.76	1.0	.18	.61	.10	.02	56	32		
February.....	4,480.2	1,455.99	295	.11	52	8.0	1.2	204	120		
March.....	5,393	3,602.3	987	1.6	116	20	3.0	572	247		
April.....	458.6	127.24	31	.65	4.2	.70	.11	265	103		
May.....	1,105.8	5,205.6	2,420	2.7	168	29	4.3	3,780	1,740		
June.....	66.48	104.92	12	.61	3.5	.58	.09	980	585		
July.....	1,276.72	1,659.25	592	.54	54	9.1	1.4	701	481		
August.....	68.74	32.73	3.4	.26	1.1	.18	.03	272	176		
September.....	99.23	98.12	28	.24	3.3	.54	.08	480	366		
Water Year 1971	23,178.27	15,066.73	2,420	.11	41	83	13	3,780	241		
October.....	39.99	16.28	3.0	.11	.53	.09	.01	312	151		
November.....	958.9	1,153.67	544	.86	38	6.3	.96	732	446		
December.....	1,488.9	1,404.06	510	.81	45	7.7	1.2	950	349		
Cal. Year 1971	15,652.26	14,878.92	2,420	.11	41	82	12	3,780	352		
January.....	268	32.3	3.4	.06	1.0	.18	.03	85	45		
February.....	1,035.4	166.67	29	.08	5.7	.92	.14	118	60		
March.....	914	459.1	105	1.2	15	2.5	.38	507	186		
April.....	1,702.6	3,350.7	1,420	2.3	113	19	2.8	1,170	738		
May.....	6,390.1	10,274.5	2,060	3.3	331	56	8.6	2,260	596		
June.....	558.5	1,159.07	496	.91	39	6.4	.97	1,220	769		
July.....	738.06	1,226.71	253	.16	40	6.7	1.0	735	616		
August.....	1,231.4	2,242.53	1,470	.96	72	12	1.9	1,110	674		
September.....	9,285.6	5,926.6	1,750	1.0	198	33	4.9	699	236		
Water Year 1972	24,611.45	27,452.19	2,060	.06	75	151	23	2,260	413		
October.....	167.4	14.12	1.2	.10	.46	.08	.01	56	31		

069C3400 CHARITON RIVER NEAR CHARITON, ICWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Lead (tons)	Suspended sediment				Tons per sq mi	Acre-feet	Concentration (mg/l)		
			Daily loads (tons)		Mean	Maximum			Daily	Maximum daily	Weighted mean
			Minimum	Maximum							
November.....	2,731.2	817.17	.32	170	27	4.5	.68	214	111		
December.....	2,354	1,584.79	.16	827	51	8.7	1.3	428	249		
Cal. Year 1972	27,376.26	27,294.26	.06	2,060	75	150	23	2,260	369		
January.....1973	5,868	2,636.21	.68	860	85	14	2.2	354	166		
February.....	10,199	7,818.3	1.6	2,160	279	43	6.5	800	284		
March.....	15,653	23,166.1	5.3	3,570	747	127	19	1,160	548		
April.....	19,283	22,722.3	6.4	3,940	757	125	19	934	436		
May.....	14,784	32,052.6	3.0	10,400	1,030	176	27	2,800	803		
June.....	5,474	28,769.7	2.2	11,700	959	158	24	3,560	1,950		
July.....	5,764.3	20,342.47	.55	9,070	656	112	17	3,290	1,310		
August.....	2,689.6	7,454.77	.41	5,270	240	41	6.2	1,570	1,030		
September.....	9,205.5	12,627.86	.39	4,880	421	69	11	1,400	508		
Water Year 1973	94,177.00	160,006.39	.10	11,700	438	879	134	3,560	629		

06903400 CHARITON RIVER NEAR CHARITON, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF BED MATERIAL

(Methods of analysis: H, hydrometer; O, optical analyzer; S, sieve, V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Number of samplings	Particle size						Methods of analysis			
				.062	.125	.250	.500	1.00	2.00		4.00	8.00	16.0	32.0	64.0
				Percent finer than indicated size, in millimeters									
May 27, 1970	11	21.0	3	27	39	63	95	99	100				S
May 26, 1971	27	14.0	3	92	95	98	99	100					SV
May 21, 1973	15	20.0	1	69	72	78	92	95	96	99	100		SV

CHARITON RIVER BASIN
06903500 HONEY CREEK NEAR RUSSELL, IOWA

LOCATION.--Lat 40°55'25", long 93°07'55", in SW 1/4 NW 1/4 sec.26, T.71 N., R.20 W., Lucas County, at gaging station on county highway bridge, 0.7 mi (1.1 km) upstream from Chariton River and 5.5 mi (8.8 km) southeast of Russell.

DRAINAGE AREA.--13.2 mi² (34.2 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--10 years (1952-62), 4,440 tons (4,030 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 9,940 mg/l June 20, 1952; no flow on many days each year. Sediment discharge: Maximum daily, 6,300 tons (5,720 tonnes) May 21, 1959; minimum daily, 0 ton (0.0 tonne) on many days each year.

REMARKS.--Flow affected by ice during winter months when flow is present.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	
1952a	1251	9,940	no flow	June 20	e2,500	0	June 21	many days	
1953	1291	1,500	no flow	June 8	970	0	Mar. 30	many days	
1954	1351	2,400	no flow	Apr. 26	940	0	Apr. 26	many days	
1955	1401	2,320	no flow	July 9	202	0	July 9	many days	
1956	1451	1,600	no flow	July 4	500	0	Aug. 1	many days	
1957	1521	1,780	no flow	June 14	550	0	May 21	many days	
1958	1572	750	no flow	May 4	380	0	July 2	many days	
1959	1643	1,100	no flow	May 21, June 30	6,300	0	May 21	many days	
1960	1743	1,460	no flow	May 16	2,480	0	May 16	many days	
1961	1883	1,600	no flow	Mar. 6	864	0	Mar. 6	many days	
1962	1943	600	no flow	Feb. 4	340	0	Nov. 2	many days	

a June 6 to September 30
e Estimated

06903500 HONEY CREEK NEAR RUSSELL, IOWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
										Maximum	Weighted mean
July.....1952	8.66	5.8	3.8	0	.19	.44	0	375	248	
August.....	93.93	361.1	280	0	12	27	.30	1,400	1,420	
September....	8.54	38.4	38	0	1.3	2.9	.03	830	1,670	
October.....	0	0	0	0	0	0	0	0	0	
November.....	149.6	316	240	0	11	24	.26	770	782	
December.....	41.8	5.2	.....	t	.17	.39	0	.....	46
January....1953	62.6	15.4	4.8	t	.50	1.2	.01	120	91	
February.....	356.9	772.3	480	.....	28	59	.64	1,200	801
March.....	1,092.1	2,806.9	970	.....	91	213	2.3	1,200	952
April.....	268.9	205.7	91	.....	6.9	16	.17	520	283
May.....	101.4	19.7	4.1	.....	.64	1.5	.02	.....	72
June.....	136.3	892.9	450	t	30	68	.75	1,500	2,430	
July.....	5.4	63.7	62	0	2.1	4.8	.05	1,400	4,370	
August.....	0	0	0	0	0	0	0	0	0	
September....	0	0	0	0	0	0	0	0	0	
Water Year 1953	2,215.00	5,097.80	970	0	14	386	4.3	1,500	852	
October.....	0	0	0	0	0	0	0	0	0	
November.....	0	0	0	0	0	0	0	0	0	
December.....	0	0	0	0	0	0	0	0	0	
Cal. Year 1953	2,023.60	4,776.60	970	0	13	362	4.0	1,500	874	
January....1954	0	0	0	0	0	0	0	0	0	
February.....	0	0	0	0	0	0	0	0	0	
March.....	0	0	0	0	0	0	0	0	0	
April.....	72.8	1,043.9	940	0	35	79	.87	2,400	5,310	
May.....	28.5	91.7	64	0	3.0	6.9	.08	1,600	1,190	
June.....	38.1	61.8	26	0	2.1	4.7	.05	1,700	601	
July.....	0	0	0	0	0	0	0	0	0	
August.....	10.7	70.9	62	0	2.3	5.4	.06	2,100	2,450	
September....	0	0	0	0	0	0	0	0	0	
Water Year 1954	150.10	1,268.30	940	0	3.5	96	1.1	2,400	3,130	
October.....	54	111.3	89	0	3.6	8.4	.09	548	763	
November.....	0	0	0	0	0	0	0	0	0	
December.....	0	0	0	0	0	0	0	0	0	
Cal. Year 1954	204.10	1,379.60	940	0	3.8	105	1.2	2,400	2,500	

06903500 HONEY CREEK NEAR RUSSELL, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Concentration (mg/l)		
			Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Maximum daily	Weighted mean	
			Maximum	Minimum						
January...1955	6	4.9	2.6	0	.16	.37	0	340	302	
February.....	187.8	113.9	63	0	4.1	8.6	.10	225	225	
March.....	64.9	18.5	2.6	.....	.60	1.4	.02	280	106
April.....	54.9	99.9	89	t	3.3	7.6	.08	967	674	
May.....	51.6	73.7	36	+	2.4	5.6	.06	1,250	529	
June.....	5.7	19.9	8.1	0	.66	1.5	.02	914	1,290	
July.....	38.1	216.3	202	0	7.0	16	.18	2,320	2,100	
August.....	0	0	0	0	0	0	0	0	0	
September.....	0	0	0	0	0	0	0	0	0	
Water Year 1955	463.00	658.40	202	0	1.8	50	.55	2,320	527	
October.....	0	0	0	0	0	0	0	0	0	
November.....	0	0	0	0	0	0	0	0	0	
December.....	0	0	0	0	0	0	0	0	0	
Cal. Year 1955	409.00	547.10	202	0	1.5	41	.46	2,320	495	
January...1956	0	0	0	0	0	0	0	0	0	
February.....	0	0	0	0	0	0	0	0	0	
March.....	0	0	0	0	0	0	0	0	0	
April.....	0	0	0	0	0	0	0	0	0	
May.....	0	0	0	0	0	0	0	0	0	
June.....	0	0	0	0	0	0	0	0	0	
July.....	32	247.6	110	0	8.0	19	.21	1,600	2,870	
August.....	348.65	1,554.8	500	0	50	118	1.3	1,500	1,650	
September.....	0	0	0	0	0	0	0	0	0	
Water Year 1956	380.65	1,802.4	500	0	4.9	137	1.5	1,600	1,750	
October.....	0	0	0	0	0	0	0	0	0	
November.....	0	0	0	0	0	0	0	0	0	
December.....	0	0	0	0	0	0	0	0	0	
Cal. Year 1956	380.65	1,802.4	500	0	4.9	137	1.5	1,600	1,750	
January...1957	0	0	0	0	0	0	0	0	0	
February.....	0	0	0	0	0	0	0	0	0	
March.....	12.26	2.9	1.0	0	.09	.22	0	0	88	
April.....	425.4	842.7	460	.....	28	64	.70	1,200	734
May.....	201.73	814	550	t	26	62	.68	1,200	1,490	
June.....	118.29	475	395	t	16	36	.40	1,780	1,490	
July.....	32.47	175.5	120	0	5.7	13	.15	900	2,000	
August.....	.04	t	t	0	0	0	0	0	0	
September.....	14.39	28.5	26	0	.95	2.2	.02	650	734	

06903500 HONEY CREEK NEAR RUSSELL, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)				Tons per sq mi	Acres	Concentration (mg/l)	
			Maximum	Minimum	Mean	Maximum daily			Weighted mean	
Water Year 1957	804.58	2,338.60	550	0	6.4	177	2.0	1,780	1,080	
October.....	9.1	1.8	1.1	0	.06	.14	0	80	73	
November.....	26.52	2.9	1.0	t	.10	.22	0	.....	41
December.....	37.09	3.7	1.9	t	.12	.28	0	120	37	
Water Year 1957	877.29	2,347.00	550	0	6.4	178	2.0	1,780	991	
January.....	31.55	.8	t	t	.03	.06	0	.....	9
February.....	212.4	146.5	85	t	5.2	11	.12	339	255	
March.....	134.7	15.7	3.9	.....	.51	1.2	.01	110	43
April.....	66.06	7.8	1.1	.....	.26	.59	.01	100	44
May.....	140.01	178.7	160	t	5.8	14	.15	750	473	
June.....	31.14	26.9	18	0	.90	2.0	.02	480	320	
July.....	1,268.66	1,125.2	380	0	36	85	.94	440	328	
August.....	185.16	70.3	44	t	2.3	5.3	.06	170	141	
September.....	233.77	246.7	100	t	8.2	19	.21	340	391	
Water Year 1958	2,376.16	1,827.00	380	0	5.0	138	1.5	750	285	
October.....	35.89	5.2	3.8	t	.17	.39	0	180	54	
November.....	178.07	149	135	t	5.0	11	.12	465	310	
December.....	17.4	1.1	.....	t	.04	.08	0	.....	23
Water Year 1958	2,534.81	1,973.90	380	0	5.4	150	1.6	750	288	
January.....	41.86	3.5	2.0	t	.11	.27	0	.....	31
February.....	633.26	134.5	38	t	4.8	10	.11	230	79	
March.....	1,171.55	1,483.3	550	.20	48	112	1.2	700	469	
April.....	862.6	1,706.8	750	.....	57	129	1.4	750	733
May.....	2,048.7	10,026.5	6,300	.....	323	760	8.4	1,100	1,810
June.....	188.18	320	280	t	11	24	.27	1,100	630	
July.....	114.55	184.3	180	0	5.9	14	.15	500	596	
August.....	24.85	38.5	19	0	1.2	2.9	.03	700	574	
September.....	193.08	212.1	200	0	7.1	16	.18	.....	407
Water Year 1959	5,509.99	14,264.80	6,300	0	39	1,080	12	1,100	959	
October.....	263.2	113.6	48	t	3.7	8.6	.09	220	160	
November.....	60.04	4.6	.50	t	.15	.35	0	.....	28
December.....	268.4	164	108	.10	5.3	12	.14	400	226	
Water Year 1959	5,870.27	14,391.70	6,300	0	39	1,090	12	1,100	908	
January.....	439.5	672.8	574	.20	22	51	.56	850	567	
February.....	90.6	13.2	2.4	.10	.46	1.0	.01	120	54	

06903500 HONEY CREEK NEAR RUSSELL, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment					Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Daily loads (tons)		Mean	Maximum	Minimum			Maximum daily	Weighted mean
			Maximum	Minimum							
March.....	1,876.4	1,207.6	596	.10	39	91	1.0	280	238		
April.....	850.2	2,185.9	1,280	.50	73	166	1.8	1,100	952		
May.....	1,601.4	4,663.4	2,480	.30	150	353	3.9	1,460	1,080		
June.....	286.6	260.4	97	.20	8.7	20	.22	455	337		
July.....	126.95	148.7	113	t	4.8	11	.12	895	434		
August.....	15.63	17.4	9.1	0	.56	1.3	.01	650	412		
September.....	2.93	3.4	2.0	0	.11	.26	0	.....	430	
Water Year 1960	5,881.85	9,455.00	2,480	0	26	716	7.9	1,460	595		
October.....	88.8	109.9	108	0	3.5	8.3	.09	500	458		
November.....	111	65.5	50	.10	2.2	5.0	.05	400	219		
December.....	27.9	3.6	1.1	t	.12	.27	0	80	48		
Cal. Year 1960	5,517.91	9,351.80	2,480	0	26	708	7.8	1,460	628		
January.....1961	9.6	.7	t	0	.02	.05	0	30	27		
February.....	241.8	357.4	300	0	13	27	.30	1,110	547		
March.....	1,661.8	3,950.6	864	.40	127	299	3.3	1,600	880		
April.....	178.6	49.5	22	.20	1.6	3.7	.04	320	103		
May.....	58.9	10.2	3.0	t	.33	.77	.01	.....	64	
June.....	16.3	8.2	2.7	0	.27	.62	.01	225	186		
July.....	21.1	8.1	2.0	0	.26	.61	.01	.....	142	
August.....	4.9	1.5	.60	0	.05	.11	0	180	113		
September.....	586.7	427.3	259	0	14	32	.36	320	270		
Water Year 1961	3,007.40	4,992.50	864	0	14	378	4.2	1,600	615		
October.....	307.9	132.4	76	.10	4.3	10	.11	280	159		
November.....	1,243.7	755.6	340	.20	25	57	.63	340	225		
December.....	92.7	5.3	.30	.10	.17	.40	0	30	21		
Cal. Year 1961	4,424.00	5,706.80	864	0	16	432	4.8	1,600	478		
January.....1962	321.4	41.3	11	.10	1.3	3.1	.03	105	48		
February.....	1,003.5	443.2	243	.30	16	34	.37	600	164		
March.....	1,220.3	698.6	255	.20	23	53	.58	450	212		
April.....	102.5	21	7.0	.10	.70	1.6	.02	185	76		
May.....	300.4	285.8	138	t	9.2	22	.24	430	352		
June.....	219.9	172.4	123	0	5.7	13	.14	350	290		
July.....	30.7	20	1.7	0	.71	1.7	.02	300	264		
August.....	62.3	54.8	33	0	1.8	4.2	.05	450	326		
September.....	54.5	48.4	33	0	1.6	3.7	.04	380	329		
Water Year 1962	4,959.80	2,680.70	340	0	7.3	203	2.2	600	200		

06903500 HONEY CREEK NEAR RUSSELL, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis: B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment				Methods of analysis
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters		
Apr. 3, 1957	151	3.5	698	285	62	85	SPWC
June 14,	80	21.0	971	210	68	90	SPWC
July 2, 1958	620	18.5	569	953	53	76	SPWC
July 19,	166	18.0	559	251	56	83	SPWC
July 30,	294	18.0	480	381	70	87	SPWC
July 30,	535	18.0	604	872	71	94	SPWC
May 21, 1959	1480	15.5	850	3400	76	95	SPWC
May 28,	246	15.5	1550	1030	56	81	SPWC
May 29,	598	14.5	950	1530	71	92	SPWC
May 30,	296	15.5	915	731	66	88	SPWC

CHARITON RIVER EASIN

06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IOWA

LOCATION.--Lat 40°48'02", long 93°11'32", in SW1/4 SW1/4 sec.5, T.69 N., R.20 W., Wayne County, on upstream handrail of county highway 550 bridge, 1.3 mi (2.1 km) downstream from Jordan Creek and 4.3 mi (6.9 km) northwest of Promise City.

DRAINAGE AREA.--168 mi² (435 km²).

EXTREMES.--Period of record: October 1969 to September 1973. Sediment concentration: Maximum measured, 9,300 mg/l April 2, 1973; minimum daily, not determined.

Sediment discharge: Maximum daily, 52,193 tons (47,300 tonnes); minimum daily, 0.0 tons (0.0 tonnes) many days all years.

REMARKS.--Records of suspended sediment have been furnished by Corps of Engineers.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)		Daily suspended sediment	
		Max.	Date	Min.	Date	Max.	Date
1970	A	6,420	Aug. 3	*		22,570	May 14
1971	A	5,560	May 19	*		11,500	Oct. 9
1972	A	6,660	June 6	*		16,400	Sept. 14
1973	A	9,300	Apr. 2	*		52,193	Mar. 31

A Published by Corps of Engineers.
 * Maximum measured concentration.

* Not determined.

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Lead (tons)	Daily loads (tons)		Mean	Tons per Sq mi	Concentration (mg/l)	
			Maximum	Minimum			Maximum daily	Weighted mean
October...1969	649.02	274	127	0	8.8	1.6	.23	156
November.....	535.6	141	118	0	4.7	.84	.12	98
December.....	154.4	0	0	0	0	0	0	0
January...1970	1,064.3	217	66	0	7.0	1.3	.18	76
February.....	145.6	7	3.0	0	0	.04	.01	18
March.....	964.8	535	238	17	3.2	.45	.45	205

06903700 SOUTH FORK CHARLTON RIVER NEAR PROMISE CITY, IOWA--CONTINUED

Mcnth	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tons)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
April.....	4,801	16,239	8,920	1.0	541	97	14	.....	1,250
May.....	4,968.7	25,343	22,570	1.0	818	151	21	.....	1,890
June.....	426.2	480	399	0	16	2.9	.40	.....	417
July.....	98.56	29	13	0	.94	.17	.02	.....	109
August.....	5,789.73	18,829	14,100	0	607	112	16	.....	1,200
September.....	14,934.3	25,904	8,812	0	863	154	22	.....	642
Water Year 1970	34,532.21	87,598	22,570	0	241	524	73	.....	944
October.....	10,340.8	21,474	11,501	0	693	128	18	.....	769
November.....	1,297	228	115	0	7.6	1.4	.19	.....	65
December.....	1,518.5	1,341	809	1.0	43	8.0	1.1	.....	327
Cal. Year 1970	46,349.45	110,626	22,570	0	303	658	92	.....	884
January.....1971	212.5	37	2.0	1.0	1.2	.22	.03	.....	65
February.....	9,443.0	12,011	4,700	0	428	71	10	.....	471
March.....	3,888	15,330	10,194	0	495	91	13	.....	1,460
April.....	449.3	58	15	0	1.9	.35	.05	.....	48
May.....	2,251.9	9,131	3,809	1.0	295	54	7.6	.....	1,500
June.....	195.0	79	29	0	2.6	.47	.07	.....	150
July.....	371.68	2,661	2,404	0	86	16	2.2	.....	2,650
August.....	26.28	7	1.0	0	.23	.04	.01	.....	99
September.....	24.57	7	1.0	0	.23	.04	.01	.....	106
Water Year 1971	30,018.53	62,364	11,501	0	171	371	52	.....	769
October.....	42.19	13	2.0	0	.42	.08	.01	.....	114
November.....	839.9	6,252	5,582	0	208	37	5.2	.....	2,760
December.....	1,289.5	5,392	4,876	0	174	32	4.5	.....	1,550
Cal. Year 1971	19,033.82	50,978	10,191	0	140	303	43	.....	992
January.....1972	211.98	30	10	0	.97	.18	.03	.....	52
February.....	1,566.16	410	70	0	14	2.4	.34	.....	97
March.....	907.9	575	323	1.0	19	3.4	.48	.....	235
April.....	2,455	10,153	7,990	0	338	60	8.5	.....	1,530
May.....	4,432	19,195	5,930	1.0	619	114	16	.....	1,600
June.....	1,523.8	10,995	5,768	0	367	65	9.2	.....	2,670
July.....	607.8	837	332	0	27	5.0	.70	.....	510
August.....	1,839.1	9,722	8,597	0	314	58	8.1	.....	1,960
September.....	5,327.6	26,084	16,418	0	869	155	22	.....	1,810
Water Year 1972	21,072.93	89,658	16,418	0	246	534	75	.....	1,580
October.....	516.3	75	10	0	2.4	.45	.06	.....	54

C6903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment									
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Concentration (mg/l)					
			Maximum	Minimum			Mean	Maximum daily	Weighted mean			
November.....	2,682	743	326	0	25	4.4	.62	103				
December.....	3,878.1	5,445	2,877	0	176	32	4.5	520				
Cal. Year 1972	25,577.74	84,264	16,418	0	231	502	70	1,200				
January....1973	5,223.0	6,647	3,780	0	214	40	5.5	471				
February.....	8,056	16,894	9,666	3.0	582	101	14	777				
March.....	19,017	129,150	52,193	7.0	4,170	769	108	2,520				
April.....	20,031	126,932	39,890	5.0	4,230	756	106	2,350				
May.....	14,954	57,964	19,218	1.0	1,870	345	48	1,440				
June.....	3,388.1	13,484	5,659	2.0	449	80	11	1,470				
July.....	3,120.9	20,085	10,889	1.0	648	120	17	2,380				
August.....	792.3	1,873	1,732	0	60	11	1.6	876				
September.....	2,762.9	9,338	6,994	0	311	56	7.8	1,250				
Water Year 1973	84,421.60	388,630	52,193	0	1,060	2,310	324	1,700				

06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IOWA--CONTINUED

PERIODIC SEDIMENT

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
Sept. 22, 1965	290	19.0	400	313
Nov. 6, 1967	29	2.0	40	3.1
Apr. 1, 1968	25	10.0	77	5.2
July 1, .....	.74	27.0	18	.04
Aug. 5, 1969	7.6	26.0	94	1.9
Sept. 3,	2.2	22.0	27	.16
Oct. 7, 1969	.97	16.5	33	.09
Nov. 4,	25	6.5	25	1.7
Dec. 2,	5.0	.5	19	.26
Jan. 6, 1970	2.4	.0	91	.59
Feb. 3,	6.4	.0	13	.22
Mar. 3,	91	2.0	432	106
Apr. 7,	92	12.0	118	29
May 5,	28	20.0	27	2.0
June 2,	148	17.0	595	238
Jan. 19, 1971	5.8	.0	112	1.8
Mar. 2,	26	.0	210	15
Apr. 13,	11	15.5	17	.50
May 26,	54	16.0	389	57
July 7, .....	.38		96	.10
Aug. 17, .....	.29	28.0	123	.10
Oct. 5, 1971	.20	15.5	71	.04
Nov. 9,	2.0		84	.45
Feb. 7, 1972	.86	.0	40	.09

CHARITON RIVER BASIN
06903900 CHARITON RIVER NEAR RATHBUN, IOWA

LOCATION.--Lat 40°49'22", Long 92°53'22", in SE1/4 NE1/4 sec.35, T.70 N., R.18 W., Appanoose County, at outlet of Rathbun Dam, 1.8 mi (2.9 km) north of Rathbun and 3.7 mi (6.0 km) upstream from Walnut Creek and at mile 142.1 (228.6 km).

DRAINAGE AREA.--551 mi² (1,427 km²).

AVERAGE ANNUAL SUSPENDED-SEDIMENT DISCHARGE.--11 years (1962-73), 81,100 tons (73,600 tonnes).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 4,100 mg/l June 9, 1969; minimum daily, 2 mg/l Nov. 26, Dec. 22, 1964, prior to regulation.
Sediment discharge: Maximum daily, 13,900 tons (12,600 tonnes) June 21, 1967; minimum daily, 0 ton (0.0 tonne) many days 1970-73, less than .05 ton (0.045 tonne) during many periods prior to regulation.

REMARKS.--Peak discharges affected by construction of Rathbun dam from July 10, 1969 to Nov. 20, 1969, and the flow has been regulated since Nov. 21, 1969. Records of suspended-sediment have been furnished by Corps of Engineers for water years 1970 to 1973. Prior to Sept. 30, 1969, samples collected at site 2.9 miles (4.7 km) below Rathbun Dam. Flow affected by ice during winter months each year.

ANNUAL EXTREMES

Water year	W.S.P. no.	Concentrations (mg/l)				Daily suspended sediment			
		Max.	Min.	Date	Max.	Min.	Date	Loads (tons)	
1963	1949	2,800	7	Dec. 30, Feb. 4	10,000	0.3	Mar. 26	Aug. 15, 16, Sept. 1	
1964	1956	2,500	4	Feb. 6, 9, Mar. 26	10,000	<.05	Apr. 21	many days	
1965	1963	2,000	2	Nov. 26, Dec. 22	13,000	<.05	Apr. 10	Dec. 22	
1966	1993	3,460	5	Dec. 10, Jan. 29	12,000	.1	June 14	Aug. 27, Sept. 3, 10-13	
1967	2013	3,680	6	Dec. 3, 5, Jan. 7, 8	13,900	<.05	June 21	many days	
1968	2095	2,080	5	Feb. 27, 28	5,380	.1	Apr. 18	Sept. 6, 15	
1969	2145	4,100	5	Mar. 5	7,950	.05	July 3	Nov. 1, 10	
1970	A	200 b	*	Sept. 11	173	0	Nov. 3	many days	
1971	A	220 b	*	Oct. 15	729	0	Oct. 15	many days	
1972	A	140 b	*	May 16	347	0	Jan. 5	many days	
1973	A	60 b	*	July 3, 4	341	0	July 1	many days	

A Records published by Corps of Engineers.

b Maximum measured concentration.

* Not determined.

06903900 CHARITON RIVER NEAR RATHBUN, ICWA--CONTINUED
MONTHLY AND YEARLY SUMMARIES

Mcnth	Water discharge (cfs-days)	Lead (tons)	Daily loads (tons)			Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum	t				Maximum daily	Weighted mean
October...1962	14,178.6	18,024.9	4,000	.90	581	33	15	1,100	471	
November.....	6,774	5,398	2,900	1.0	180	9.8	4.5	860	295	
December.....	1,259	65.1	5.0	.50	2.1	.12	.05	60	19	
January...1963	772	51	5.0	.50	1.6	.09	.04	62	25	
February.....	4,983	811.4	160	.40	29	1.5	.68	120	60	
March.....	43,561	92,582	10,000	3.0	2,990	169	77	2,800	787	
April.....	4,856	6,161	3,000	8.0	205	11	5.1	1,400	470	
May.....	5,689	7,917	2,000	12	255	14	6.6	1,100	515	
June.....	472.2	179.6	.27	.80	6.0	.33	1.15	200	141	
July.....	649.9	1,343.3	770	.80	43	2.4	1.1	1,500	766	
August.....	113	26	2.0	.30	.84	.05	.02	150	85	
September.....	754.8	1,345.8	440	.30	45	2.5	1.1	870	660	
Water Year 1963	84,062.50	133,905.10	10,000	.30	367	244	112	2,800	590	
October.....	39.8	23.6	7.0	t	.76	.04	.02	340	220	
November.....	215.9	77.8	23	t	2.6	.14	.06	250	133	
December.....	71.8	7.6	2.0	t	.25	.01	.01	88	39	
Cal. Year 1963	62,178.40	110,526.10	10,000	t	303	201	92	2,800	658	
January...1964	164	8.1	.80	t	.26	.01	.01	46	18	
February.....	173.7	5.4	.60	.10	.19	.01	0	50	12	
March.....	589.8	38.3	8.0	.10	1.2	.07	.03	150	24	
April.....	8,262	26,425.9	10,000	.90	881	48	22	2,500	1,180	
May.....	2,873	4,760	960	4.0	154	8.7	4.0	1,200	614	
June.....	26,032	42,516	8,600	2.0	1,420	77	35	1,900	605	
July.....	2,298	2,117	520	2.0	68	3.9	1.8	600	341	
August.....	186.2	79.3	11	.40	2.6	.14	.07	320	158	
September.....	9,858	16,509	4,500	6.0	550	30	14	1,700	620	
Water Year 1964	50,764.2	92,568.00	10,000	t	253	169	77	2,500	675	
October.....	388.4	39.1	8.8	.20	1.3	.07	.03	69	37	
November.....	242.1	15.8	2.1	.10	.53	.03	.01	50	24	
December.....	570.8	19.4	4.4	t	.63	.04	.02	82	13	
Cal. Year 1964	51,638.00	92,533.30	10,000	t	253	169	77	2,500	664	
January...1965	7,976	9,474.2	3,200	.30	306	17	7.9	1,000	440	
February.....	9,460	4,926.6	1,100	2.6	176	9.0	4.1	400	193	
March.....	28,484	31,217.2	10,000	5.7	1,010	57	26	1,100	406	
April.....	45,861	58,393	13,000	27	3,280	179	82	2,000	795	

Mcnth	Water discharge (cfs-days)	Suspended sediment									
		Load (tons)	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)			
			Maximum	Minimum				Maximum daily	Weighted mean		
May.....	2,788	1,745.4	470	7.1	56	3.2	1.5	820	232		
June.....	3,948.6	9,648	3,400	1.5	322	18	8.1	1,900	905		
July.....	349.1	289.3	70	.50	9.3	.53	.24	1,200	307		
August.....	83	26.5	6.9	.20	6.85	.05	.02	300	118		
September.....	43,662.5	26,352	5,100	4.8	878	48	22	1,400	224		
Water Year 1965	143,813.50	182,146.50	13,000	t	499	332	152	2,000	469		
October.....	1,565	725.9	90	1.7	23	1.3	.61	420	172		
November.....	902	76.2	11	.40	2.5	.14	.06	79	31		
December.....	7,123	10,026.3	3,600	.40	323	18	8.4	1,100	521		
Cal. Year 1965	152,202.20	192,900.60	13,000	.20	528	351	161	2,000	469		
January....1966	7,484	7,562.6	4,100	.30	244	14	6.3	1,100	374		
February.....	8,885	18,816.3	7,000	.40	672	34	16	1,920	784		
March.....	3,920	950.8	110	1.1	31	1.7	.79	240	90		
April.....	3,331	2,228.7	730	1.1	74	4.1	1.9	540	248		
May.....	15,379	41,222	11,000	3.7	1,330	75	34	1,880	993		
June.....	7,658	34,766	12,000	3.6	1,160	63	29	3,460	1,680		
July.....	562.9	408.6	140	.60	13	.74	.34	750	269		
August.....	383.8	225.3	62	.10	7.3	.41	.19	430	217		
September.....	144.7	32.8	5.0	.10	1.1	.06	.03	320	84		
Water Year 1966	57,338.40	117,041.50	12,000	.10	321	213	98	3,460	756		
October.....	64.7	4.7	.40	t	.15	.01	0	58	27		
November.....	49.7	3.2	.30	t	.11	.01	0	71	24		
December.....	163.5	24.4	11	t	.79	.04	.02	130	55		
Cal. Year 1966	48,026.30	106,245.40	12,000	t	291	194	89	3,460	819		
January....1967	282	483	200	t	16	.88	.40	2,070	634		
February.....	563.6	78.5	8.8	.20	2.8	.14	.07	180	52		
March.....	1,200.6	698.4	230	.20	23	1.3	.58	490	215		
April.....	12,519	32,656	5,480	26	1,100	60	27	2,280	972		
May.....	7,223	25,855.3	7,040	4.5	834	47	22	3,680	1,330		
June.....	72,667	82,896	13,900	48	2,760	151	69	1,520	423		
July.....	1,608	567.2	190	.90	31	1.8	.81	740	223		
August.....	917.7	1,907.6	920	.10	62	3.5	1.6	1,790	770		
September.....	306	113.3	18	.30	3.8	.21	.09	430	137		
Water Year 1967	97,564.80	145,887.60	13,900	t	400	266	122	3,680	554		
October.....	6,128.6	11,194	3,780	.40	361	20	9.3	1,300	676		
November.....	6,050	3,219.9	1,090	.80	107	5.9	2.7	430	197		

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Daily loads (tchs)		Maximum	Mean			Maximum daily	Weighted mean
			Minimum	Maximum						
December.....	1,399	214.7	.80	34	6.9	.39	.18	290	57	
Cal. Year 1967	110,864.50	160,483.90	t	13,900	440	292	134	3,680	536	
January....1968	3,621	510.8	.20	110	16	.93	.43	110	52	
February.....	1,695	240.1	.20	68	8.3	.44	.20	110	53	
March.....	1,615	104.9	.30	13	3.4	.19	.09	110	24	
April.....	26,933	46,849.4	2.5	5,380	1,560	85	39	2,080	644	
May.....	12,844	12,278.4	5.1	3,760	396	22	10	770	354	
June.....	513.5	185.6	.20	34	6.2	.34	.15	280	134	
July.....	547.3	448	.30	100	14	.82	.37	1,300	303	
August.....	266	207.3	.20	48	6.7	.38	.17	890	289	
September.....	178.4	82.2	.10	15	2.7	.15	.07	380	171	
Water Year 1968	61,790.80	75,535.30	.10	5,380	206	138	63	2,080	453	
October.....	199.5	26.46	.08	8.0	.85	.05	.02	159	49	
November.....	349.4	86.71	.05	21	2.9	.16	.07	225	92	
December.....	128.9	8.41	.07	.70	.27	.02	.01	56	24	
Cal. Year 1968	48,891.00	61,028.28	.05	5,380	167	111	51	2,080	462	
January....1969	9,464.3	1,547.31	.14	246	50	2.8	1.3	566	61	
February.....	9,210	5,244.9	3.9	1,490	187	9.6	4.4	2,500	211	
March.....	8,549	3,035.6	2.8	625	98	5.5	2.5	390	132	
April.....	9,992	10,923.6	2.4	1,840	364	20	9.1	1,280	405	
May.....	11,775	29,355	11	7,090	947	53	25	4,050	923	
June.....	4,378	14,219	12	4,800	474	26	12	4,100	1,200	
July.....	24,240	39,023	35	7,950	1,260	71	33	3,770	596	
August.....	4,582	5,273.7	3.4	982	170	9.6	4.4	708	426	
September.....	4,172	3,389.8	2.5	884	113	6.2	2.8	748	301	
Water Year 1969	87,040.10	112,133.49	.05	7,950	307	204	94	4,100	477	
October.....	1,905.0	59	0	9.0	3.2	.18	.08	.....	19
November.....	3,052.3	586	0	173	20	1.1	.49	.....	71
December.....	171.6	0	0	0	0	0	0	.....	0
Cal. Year 1969	91,491.20	112,696.91	0	7,950	309	205	94	.....	456
January....1970	278.5	12	0	2.0	.39	.02	.01	.....	16
February.....	156.9	4	0	1.0	0	.01	0	.....	9
March.....	291.5	35	0	2.0	1.1	.06	.03	.....	45
April.....	202.26	23	0	3.0	.77	.04	.02	.....	42
May.....	3,142	232	1.0	39	7.5	.42	.19	.....	27
June.....	3,500.8	551	1.0	77	18	1.0	.46	.....	58

C65C3900 CHARLTON RIVER NEAR RATHBUN, Iowa--CONTINUED

Suspended sediment

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Mean	Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum				Maximum daily	Weighted mean
July.....	202.5	29	2.0	0	.94	.05	.02	.....	53
August.....	282.1	90	5.0	1.0	2.9	.16	.08	.....	118
September.....	405.4	89	10	0	3.0	.16	.07	.....	81
Water Year 1970	13,590.86	1,750	173	0	4.8	3.2	1.5	.....	48
October.....	8,037.0	1,701	729	0	55	3.1	1.4	.....	78
November.....	6,234	521	54	2.0	17	.95	.43	.....	31
December.....	4,983	366	24	1.0	12	.67	.31	.....	27
Cal. Year 1970	27,715.96	3,653	729	0	10	6.7	3.0	.....	49
January.....	3,023	242	24	2.0	7.8	.44	.20	.....	30
February.....	6,118	426	68	1.0	15	.78	.36	.....	26
March.....	28,452	1,993	108	27	64	3.6	1.7	.....	26
April.....	7,152	336	54	0	11	.61	.28	.....	17
May.....	5,109.7	266	68	0	8.6	.22	.06	.....	19
June.....	626.8	72	22	0	2.4	.13	.06	.....	43
July.....	335.1	54	2.0	1.0	1.7	.10	.05	.....	60
August.....	384	70	5.0	1.0	2.3	.13	.06	.....	68
September.....	366	69	3.0	0	2.3	.13	.06	.....	70
Water Year 1971	70,820.60	6,116	729	0	17	11	5.1	.....	32
October.....	389	66	4.0	0	2.1	.12	.06	.....	63
November.....	378	35	3.0	0	1.2	.06	.03	.....	34
December.....	365	26	2.0	0	.84	.05	.02	.....	26
Cal. Year 1971	52,698.60	3,655	108	0	10	6.7	3.1	.....	26
January....1972	11,723	1,004	347	0	32	1.8	.84	.....	32
February.....	3,291	227	71	0	8.0	.41	.19	.....	26
March.....	2,992	114	13	1.0	3.7	.21	.10	.....	14
April.....	925	120	20	0	4.0	.22	.10	.....	48
May.....	11,552	1,576	307	0	51	2.9	1.3	.....	51
June.....	5,186.3	363	32	0	12	.66	.30	.....	26
July.....	263.6	41	3.0	0	1.3	.07	.03	.....	58
August.....	2,262.7	752	292	0	24	1.4	.63	.....	123
September.....	8,035.6	859	225	0	29	1.6	.72	.....	40
Water Year 1972	47,363.20	5,193	347	0	14	9.4	4.3	.....	41
October.....	1,932.9	174	59	0	5.6	.32	.15	.....	33
November.....	1,316	77	19	0	2.6	.14	.06	.....	22
December.....	14,639	652	42	4.0	21	1.2	.54	.....	17

06903900 CHARITON RIVER NEAR RATHBUN, ICWA--CONTINUED

Month	Water discharge (cfs-days)	Lead (tcns)	Suspended sediment				Tons per sq mi	Acre-foot	Concentration (mg/l)	
			Maximum	Minimum	Mean	Daily loads (tcns)			Maximum daily	Weighted mean
Cal. Year 1972	64,119.10	5,959	347	0	16	11	5.0	.....	.....	34
January....1973	11,013	444	50	1.0	14	.81	.37	.....	.....	15
February.....	36,975	1,298	167	2.0	44	2.4	1.1	.....	.....	13
March.....	29,198	1,445	198	1.0	47	2.6	1.2	.....	.....	18
April.....	19,951.8	2,162	276	0	72	3.9	1.8	.....	.....	40
May.....	39,716	2,534	129	0	82	4.6	2.1	.....	.....	24
June.....	47,200	4,120	240	66	137	7.5	3.4	.....	.....	32
July.....	31,588	3,003	341	9.0	97	5.5	2.5	.....	.....	35
August.....	36,761	2,729	119	26	88	5.0	2.3	.....	.....	28
September.....	22,058	1,398	95	1.0	47	2.5	1.2	.....	.....	24
Water Year 1973	292,748.70	20,036	341	0	55	36	17	.....	.....	25

06 903900 CHARLTON RIVER NEAR RATHBUN, IOWA--CONTINUED

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT

(Methods of analysis; B, bottom-withdrawal tube; P, pipette; D, decantation; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; V, visual accumulation tube)

Date	Instantaneous discharge (cfs)	Water temperature (°C)	Suspended sediment					Methods of analysis						
			Concentration (mg/l)	Suspended sediment discharge (tons per day)	Percent finer than indicated size, in millimeters									
					0.002	0.004	0.016	0.031	0.062	0.125	0.250	0.500	1.00	
Mar. 26, 1963	1350	10.0	3000	10900	51	66	76	87	97	99	100			SPWC
Apr. 30,.....	852	13.5	1500	3450	40	49	62	79	95	99	100			SPWC
Apr. 21, 1964	1540	13.5	2600	10800	43	57	77	88		97	99	100		VPN
Apr. 21,.....	1540	13.5	2600	10800	59	69	82	90	96	99				VPWC
Apr. 24,.....	702	14.0	880	1670	63									SPWC
June 4, 1965	681	20.0	2300	4230	58	74	88	95		100				SPWC
June 4,.....	681	20.0	2300	4230	39	57	77	92	98					SPN
June 6,.....	560	20.0	770	1160	71	81	91	97		100				SPWC
Sept. 20,.....	2450	19.0	600	3970	73	85	92		98	100				SPWC
May 12, 1966	2400	7.0	1930	12500	66	80	89	95		100				SPWC
May 12,.....	2400	7.0	1930	12500	52	69	84		98					SPN
Apr. 1, 1967	579	10.0	2470	3860	66	89			98	99	100			SPWC
Apr. 14,.....	1450	10.0	990	3880	70	91			99	99	100			SPWC
Apr. 14,.....	1450	10.0	990	3880	39	59	79	91	98					SPN
May 30,.....	1450	16.5	950	3720	62	81	84	92	94	100				SPWC
May 30,.....	1450	16.5	950	3720	47	70	92		99					SPN
Aug. 8,.....	328	24.5	2160	1910	72	89	95	96		100				SPWC
Apr. 20, 1968	1460	14.0	820	3230	70	85	88	97	98	100				SPWC
Apr. 18, 1969	870	12.0	739	1740	59	70	84	96	99	99	100			SPWC
May 8,.....	1140	16.0	2540	7820	63	75	83		100					SPWC
May 8,.....	1140	16.0	2540	7820	46	64	82	94	98					SPN
June 30,.....	836	24.0	2150	4850	74	96	96	98	99	99	100			SPWC
June 30,.....	836	24.0	2150	4850	38	76	89	96	98					SPN

Miscellaneous samples collected at site but outside period of record.

Dec. 2, 1969	5.9		12	0.19										
Jan. 7, 1970	7.7		122	2.5										
Feb. 3,.....	10		31	0.84										
Mar. 3,.....	11		44	1.3										
June 3,.....	10		20	0.54										

CHARITON RIVER BASIN

06904000 CHARITON RIVER NEAR CENTERVILLE, IOWA

LOCATION.--Lat 40°44'20", long 92°48'05", in NE 1/4 NW 1/4 sec. 34, T. 69 N., R. 17 W., 10 ft (3 m) upstream from gaging station on bridge on State Highway 2, 3 mi (4.8 km) east of Centerville, and 3.5 mi (5.6 km) downstream from Cooper Creek.

DRAINAGE AREA.--708 mi² (1,834 km²).

EXTREMES.--Period of record: Sediment concentrations: Maximum daily, 10,700 mg/l June 14, 1950; minimum daily, not determined. Sediment discharge: Maximum daily, 47,000 tons (42,600 tonnes) June 14, 1950; 0 tons (0.00 tonnes) on several days in 1953.

REMARKS.--Records of suspended-sediment furnished by the Corps of Engineers.

ANNUAL EXTREMES

Water Year	W.S.P. no.	Concentrations (mg/l)		Loads (tons)	
		Max.	Date	Min.	Date
1950	A	10,700	June 14	*	June 14
1951	A	3,440	May 10	*	Apr. 7
1952	A	7,840	June 22	*	June 3
1953	A	1,890	Mar. 31	*	Mar. 31

A Published by Corps of Engineers

* Not determined

MONTHLY AND YEARLY SUMMARIES

Month	Water discharge (cfs-days)	Load (tons)	Daily loads (tons)		Tons per sq mi	Acre-feet	Concentration (mg/l)	
			Maximum	Minimum			Mean	Maximum daily	Weighted mean
May.....1949	1,949	3,341	1,990	2.4	4.7	2.8	.....	635
June.....	27,145	102,936	26,300	3.8	145	86	.....	1,400
July.....	16,685	50,266	15,300	20	71	42	.....	1,120
August.....	11,772	30,080.4	12,800	1.1	42	25	.....	946
September.....	2,409	4,717.5	3,470	.40	6.7	3.9	.....	725
October.....	1,112.5	1,222.3	591	.40	1.7	1.0	.....	407
November.....	586	155	47	.40	.22	.13	.....	98
December.....	883	170.9	58	.20	.24	.14	.....	72

06904000 CHARITON RIVER NEAR CENTERVILLE, IOWA--CONTINUED

Month	Water discharge (cfs-days)	Load (tons)	Suspended sediment						Concentration (mg/l)	
			Daily loads (tcns)		Tons per sq mi	Acre-feet	Maximum daily	Weighted mean		
			Maximum	Minimum					Mean	
January...1950	6,525	5,368.1	1,650	2.3	173	7.6	4.5	305		
February.....	21,953	42,701.4	6,570	1.0	1,530	60	36	720		
March.....	15,661	34,454.6	5,640	7.2	1,110	49	29	815		
April.....	7,393	8,779.3	3,330	6.2	293	12	7.3	440		
May.....	15,252	63,761.7	22,400	9.7	2,060	90	53	1,550		
June.....	56,748	237,132	47,000	20	7,900	335	198	1,550		
July.....	4,388	21,986.2	12,500	3.2	709	31	18	1,860		
August.....	2,074.5	6,358.1	2,310	.80	205	9.0	5.3	1,140		
September.....	135.3	23.1	1.6	.40	.77	.03	.02	63		
Water Year 1950	132,711.30	422,112.70	47,000	.20	1,160	596	352	1,180		
October.....	75.3	15.3	.90	.30	.49	.02	.01	75		
November.....	95.6	19.5	2.3	.30	.65	.03	.02	76		
December.....	110.6	19.3	1.6	.20	.62	.03	.02	65		
Cal. Year 1950	130,411.30	420,618.60	47,000	.20	1,150	594	351	1,190		
January...1951	159.9	53	8.1	.20	1.7	.07	.04	123		
February.....	16,466.3	15,767.9	3,530	.20	563	22	13	355		
March.....	12,206	32,700.3	8,130	6.7	1,050	46	27	992		
April.....	30,693	104,672	28,800	53	3,490	148	87	1,260		
May.....	34,637	115,576	20,700	57	3,730	163	96	1,240		
June.....	32,595	92,998	12,900	103	3,100	131	78	1,060		
July.....	8,292	27,687.7	12,100	2.6	893	39	23	1,240		
August.....	2,618	4,930.8	1,560	.50	159	7.0	4.1	698		
September.....	480.7	132	16	1.7	4.4	.19	.11	102		
Water Year 1951	138,429.40	394,571.80	28,800	.20	1,080	557	329	1,060		
October.....	6,132.8	12,549	5,860	.70	405	18	10	758		
November.....	4,859	11,394.5	4,560	3.8	380	16	9.5	869		
December.....	1,841	379.6	22	2.3	12	.54	.32	76		
Cal. Year 1951	150,980.70	418,840.80	28,800	.20	1,150	592	350	1,030		
January...1952	6,318	8,186.7	2,970	5.6	264	12	6.8	480		
February.....	4,560	1,614.2	332	3.0	56	2.3	1.3	131		
March.....	44,436	117,074.3	15,900	3.8	3,780	165	98	976		
April.....	10,779	14,926	5,460	14	498	21	12	513		
May.....	10,643	18,322	4,560	12	591	26	15	638		
June.....	34,771	195,149.8	37,500	3.3	6,500	276	163	2,080		
July.....	1,428.1	594.6	205	1.8	19	.84	.50	154		
August.....	4,649.4	11,538.3	3,550	1.4	372	16	9.6	919		
September.....	288.2	109.1	27	.60	3.6	.15	.09	140		

MISCELLANEOUS RECORDS

MISCELLANEOUS RECORDS

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DFG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
05388320	BEAR CREEK NEAR DORCHESTER, IOWA			
June 8, 1966	56	19.5	52	7.9
05388350	VILLAGE CREEK AT VILLAGE CREEK, IOWA			
June, 8, 1966	450	19.5	450	844
05389500	MISSISSIPPI RIVER AT MC GREGOR, IOWA			
Oct. 22, 1946	30800		40	3330
Apr. 11, 1967	163000	9.0	26	11400
05414500	LITTLE MAQUOKETA RIVER NEAR DURANGO, IOWA			
June 26, 1944	6120		19000	314000
June 9, 1966	287	15.5	770	597
05418500	MAQUOKETA RIVER NEAR MAQUOKETA, IOWA			
June 27, 1944	43700		5440	642000
June 10, 1966	1800	15.5	3830	18600
05420500	MISSISSIPPI RIVER AT CLINTON, IOWA			
Apr. 11, 1967	189000	8.5	110	56100
05422000	WAPSIPINICON RIVER NEAR DEWITT, IOWA			
June 27, 1944	23100		1580	98500
June 29,.....	17000		856	39300
05451700	TIMBER CREEK NEAR MARSHALLTOWN, IOWA			
Feb. 18, 1966	57	.5	108	17
05451900	RICHLAND CREEK NEAR HAVEN, IOWA			
Feb. 18, 1966	18	.0	250	12
05452000	SALT CREEK NEAR ELBERON, IOWA			
Sept.28, 1966	19	16.5	9	.46

MISCELLANEOUS RECORDS--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
05452200 WALNUT CREEK NEAR HARTWICK, IOWA				
Feb. 18, 1966	26	.0	270	19
05452500 IOWA RIVER NEAR BELLE PLAINE, IOWA				
June 17, 1944	16500		860	38300
05453000 BIG BEAR CREEK AT LADORA, IOWA				
June 28, 1948	72		5540	1080
Feb. 18, 1966	79		120	26
05460500 SHELL ROCK RIVER AT MARBLE ROCK, IOWA				
June 13, 1944	13000		463	16300
05464000 CEDAR RIVER AT WATERLOO, IOWA				
June 15, 1944	18800		150	7610
Mar. 17, 1945	54300		365	53500
05465000 CEDAR RIVER NEAR CONESVILLE, IOWA				
May 29, 1944	19800		178	9520
June 20,	30400		524	43000
Mar. 21, 1945	49100		384	50900
05465500 IOWA RIVER AT WAPELLO, IOWA				
May 29, 1944	45900		309	38300
June 21,	51600		440	61300
Mar. 22, 1945	57700		270	42100
June 6, 1947	58200		563	88500
05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IOWA				
May 23, 1946	1300		3780	13300
June 13,	2730		10500	77400
June 3, 1947	5260		1240	17600
Apr. 7, 1965	10800		670	20000
July 7, 1969	2980	24.0	563	4530

MISCELLANEOUS RECORDS--CONTINUED

SUSPENDED
SEDIMENT
DISCHARGE
(T/DAY)
(80155)

TEMPER-
ATURE
(DEG C)
(00010)

SUSPENDED
SEDIMENT
(MG/L)
(80154)

DISCHARGE
(CFS)
(00061)

DATE

05473000 SKUNK RIVER NEAR COPPOCK, IOWA				
May 25, 1944	35300	1210		115000
05474000 SKUNK RIVER AT AUGUSTA, IOWA				
May 26, 1944	43700	1750		206000
05474500 MISSISSIPPI RIVER AT KEOKUK, IOWA				
July 1, 1944	209000	765		432000
Apr. 6, 1945	180000	311		151000
05481500 DES MOINES RIVER NEAR ROONE, IOWA				
June 17, 1944	17700	212		10100
05484000 SOUTH RACCOON RIVER AT REDFIELD, IOWA				
Apr. 25, 1945	3690	2880		28700
May 22,	8790	4210		99900
May 23,	5150	4050		56300
June 2, 1947	13300	5730		206000
05484500 RACCOON RIVER AT VAN METER, IOWA				
June 17, 1944	14200	388		14900
Apr. 27, 1945	9740	671		17600
May 23,	11900	2300		73900
June 3, 1947	19100	2280		118000
June 25,	39700	2760		296000
05486000 NORTH RIVER NEAR NORWALK, IOWA				
Apr. 17, 1945	2530	1400		9560
05487470 SOUTH RIVER NEAR ACKWORTH, IOWA				
Apr. 17, 1945	4720	9170		117000
June 18, 1946	5660	8790		134000

MISCELLANEOUS RECORDS--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
05488000 WHITE BREAST CREEK NEAR KNOXVILLE, IOWA				
June 20, 1946	6500		2920	51200
June 5, 1947	11200		7870	238000
05488500 DES MOINES RIVER NEAR TRACY, IOWA				
May 25, 1944	61400		960	159000
May 29, -....	44700		474	57200
July 7, 1969	16000	22.0	94	4060
05489000 CEDAR CREEK NEAR BUSSEY, IOWA				
July 7, 1969	578	22.0	1520	2370
05489500 DES MOINES RIVER AT OTTUMWA, IOWA				
May 26, 1944	63200		1030	176000
May 29, -....	52800		671	95700
Apr. 20, 1945	34100		564	51900
05490500 DES MOINES RIVER AT KEOSAUQUA, IOWA				
May 26, 1944	67200		1110	201000
June 29, 1947	78800		970	206000
05491000 SUGAR CREEK NEAR KEOKUK, IOWA				
Apr. 6, 1965	256		2500	1730
05494300 FOX RIVER AT BLOOMFIELD, IOWA				
Oct. 17, 1967	25	10.0	140	9.4
06605600 LITTLE SIOUX RIVER NEAR GILLETTS GROVE, IOWA				
Mar. 26, 1968	35		15	1.4

MISCELLANEOUS RECORDS--CONTINUED

DATE	DISCHARGE (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SUSPENDED SEDIMENT (MG/L) (80154)	SUSPENDED SEDIMENT DISCHARGE (T/DAY) (80155)
06607200 MAPLE RIVER AT MAPLETON, IOWA				
July 18, 1945	4350		7030	82600
06806000 WAUBONSIE CREEK NEAR BARTLETT, IOWA				
May 28, 1947	40		38700	4180
June 4,.....	446		323000	389000
06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA				
Apr. 19, 1945	2240		3330	20100
May 23,.....	20000		5720	309000
June 27,.....	7160		23700	458000
May 29, 1947	5660		16800	257000
June 3,.....	9290		7330	184000
06811840 TARKIO RIVER AT STANTON, IOWA				
Mar. 9, 1966	21	.0	330	19
Mar. 5, 1959	15	.0	436	18
06817000 NODAWAY RIVER AT CIARINDA, IOWA				
June 5, 1947	14700		10500	417000
06898400 WELDON RIVER NEAR LEON, IOWA				
July 2, 1968	.45	22.0	23	.03
July 8, 1969	60	22.0	366	59
06904000 CHAPITON RIVER NEAR CENTERVILLE, IOWA				
Apr. 18, 1945	7040		920	17500
June 20, 1946	18000		880	42800
Sept. 22, 1965	10800	18.5	210	6100

SUMMARY OF SEDIMENT DEPOSITION AT SELECTED RESERVOIRS

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	**C/I ratio	Specific weight (dry) (lb.per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency sup- plying data
		Total | Net					Acre-ft | Tons		
UPPER MISSISSIPPI RIVER BASIN									
Pool No. 19	Keokuk, Ia.	119,000	1913	--	479,550	--	--	--	CE
		--	06-28	15	370,300	--	--	--	
		--	06-38	10	337,000	--	--	--	
		--	06-46	8	312,216	--	--	--	
Upper Pine	Eldora, Ia.	13.9	05-34	--	660	.145	--	--	SCS
		--	09-47	13.3	452	.099	1.14	*1,490	
Pine Lake	Eldora, Ia.	15.34	1924	--	738	*.148	--	--	SCS
		--	1932	8	552	*.111	*60	*1,990	
Beeds Lake	Hampton, Ia.	31.8	1935	--	1,154	*.069	--	--	SCS
		--	1946	11	1,070	*.064	.24	340	
CM ST P & P RR Res.	Madrid, Ia.	2.54	1903	--	43	*.069	--	--	SCS
		--	1918	15	25	*.040	.476	726	
Fairfield No. 3	Fairfield, Ia.	2.05	1927	--	207	*.303	--	--	SCS
		--	1934	7	166	*.242	*51.6	3,327	
		--	07-53	19	135	*.198	*51.6	893	
Springbrook Lake	Guthrie Center, Ia.	2.1	1936	--	185	*.386	--	--	SCS
		--	1946	10	172	*.359	.638	695	
Pool No. 16	Muscataine, Ia.	99,400	03-38	--	113,370	--	--	--	CE
		--	11-49	11.7	106,347	--	--	--	
Bloomfield	Bloomfield, Ia.	2.25	09-37	--	896	*.664	--	--	SCS
		--	09-51	14	831	*.616	2.16	2,823	
Coralville	Iowa City, Ia.	3,115	09-58	--	492,000	.47	--	--	CE
		--	01-64	5.33	485,400	.46	.402	350.2	
		--	04-68	4.33	480,110	.46	.397	443.2	
Backbone Lake	Strawberry Point, Ia.	116	07-34	--	608	--	--	--	SCS
		--	02-42	7.6	539	--	.078	127	
		--	02-49	7.0	473	--	.082	134	
Pool No. 11	Dubuque, Ia.	81,600	04-38	--	171,684	--	--	--	CE
		81,600	02-53	14.8	154,526	--	.014	--	

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	*C/I ratio	Specific weight (dry) (lb.per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown		Agency supplying data
								Acre-ft	Tons	
MISSOURI RIVER BASIN										
Carl Chinguist	Stanton, Ia.	.166	06-38 05-49	-- 10.9	19.46 2.59	*.231 *.063	-- 49.9	-- 3.87	-- 4,200	SCS
Allerton	Allerton, Ia.	4.98	1913 11-39	-- 25.5	511 401	-- --	-- *60	-- .894	-- 1,170	SCS
Centerville #2	Centerville, Ia.	2.70	1926 1937	-- 11	1,111 1,050	-- --	-- *60	-- 2.12	-- 2,760	SCS
Lake of Three Fires	Beaford, Ia.	6.15	07-36 02-50	-- 13.6	1,231 860	-- --	-- --	-- 4.58	-- --	SCS
Honey Creek No. A-2	Russell, Ia.	.278	10-56 10-58	-- 2.00	52.7 52.3	*.750 *.744	-- 66	-- .71	-- 1,000	SCS
		--	09-59	.92	52.2	*.742	66	.74	1,100	
		--	01-61	1.33	52.2	*.742	66	0	0	
Honey Creek No. A-4	Russell, Ia.	.355	08-57 10-58	-- 1.17	64.9 63.5	*.724 *.708	-- 66	-- 3.52	-- 5,100	SCS
		--	08-59	.83	63.3	*.706	66	.71	1,000	
		--	01-61	1.42	63.3	*.706	66	0	0	
Honey Creek No. F-1	Russell, Ia.	1.213	11-55 10-58	-- 2.92	184 181	*.600 *.590	-- 66	-- .77	-- 1,100	SCS
		--	10-59	1.00	179	*.584	66	2.02	2,900	
		--	01-61	1.25	179	*.584	66	0	0	
Honey Creek No. E-1	Russell, Ia.	.478	07-55 06-58	-- 2.92	142 140	*1.175 *1.158	-- 66	-- 1.35	-- 1,900	SCS
		--	09-59	1.25	138	*1.142	66	2.61	3,800	
		--	01-61	1.33	138	*1.142	66	0	0	
Honey Creek No. I-1	Russell, Ia.	.503	11-55 10-58	-- 2.92	106 105	*.833 *.826	-- 66	-- .85	-- 1,200	SCS
		--	09-59	.92	104	*.818	66	2.22	3,200	
		--	01-61	1.33	104	*.818	66	0	0	
Otto Baak	Ricketts, Ia.	.159	09-44 04-49	-- 4.6	16.91 2.28	*.177 *.058	-- 54.9	-- 6.41	-- 7,670	SCS

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	*C/I ratio	Specific weight (dry) (lb. per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency sup- plying data	
		Total	Net					Acre-ft	Tons	
MISSOURI RIVER BASIN--CONTINUED										
Fred Brown	Logan, Ia.	.100	.097	06-41 05-49	-- 7.9	111.89 4.61	*.594 *230	-- 9.51	-- 13,080	SCS
William Esbeck	Elkhorn, Ia.	.208	.204	05-40 05-49	-- 9.0	112.60 4.51	*.238 *087	-- 4.41	-- 5,390	SCS
G & A Evers Lower Reservoir	Denison, Ia.	.187	.139	12-38 04-49	-- 10.3	16.63 1.26	*.138 *026	-- 3.75	-- 5,700	SCS
G & A Evers Upper Reservoir	Denison, Ia.	.045	.044	03-39 04-49	-- 10.1	11.90 .22	*.158 *018	-- 3.77	-- 5,870	SCS
Charles Fienhold	Dunlap, Ia.	.428	.425	05-45 04-49	-- 3.9	112.63 2.90	*.123 *028	-- 5.87	-- 8,070	SCS
C. T. Gaad	Stennett, Ia.	.081	.079	12-40 05-49 06-52	-- 8.4 3.1	14.48 12.82 11.98	*.762 *.675 *.631	-- 2.51 3.43	-- 3,492 4,330	SCS
Otto Goslar	Charter Oak, Ia.	.089	.086	05-40 03-49	-- 8.8	110.18 8.29	*.485 *.395	-- 2.50	-- 3,750	SCS
Thomas Hodkin	Dow City, Ia.	.130	.127	08-41 05-49	-- 22.8	119.39 .21	*.588 *006	-- 53.9	-- 97,740	SCS
Fred Hollrah	Ute, Ia.	.217	.213	08-44 03-49	-- 4.6	118.98 12.76	*.365 *.245	-- 6.35	-- 8,060	SCS
Jones Creek	Pisgah, Ia.	2.26	2.23	02-42 01-49 09-50 01-53	-- 6.9 1.7 2.3	254.2 221.8 211.5 199.2	*.527 *.460 *.439 *.413	-- 2.11 2.68 2.40	-- 2,197 3,620 3,230	SCS
Emma La Frontz	Denison, Ia.	.155	.152	05-42 04-49 07-53	-- 6.9 4.2	15.28 10.38 9.47	*.577 *.392 *.357	-- 4.67 1.41	-- 5,767 1,904	SCS
Alfred Lage	Aspinwall, Ia.	.184	.182	06-41 04-49 06-52	-- 7.8 3.2	11.23 8.56 7.14	*.229 *.175 *.146	-- 1.88 2.42	-- 2,180 2,735	SCS

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	**C/I ratio	Specific weight (dry) (lb. per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency supplying data
		Total	Net					Acre-ft	Tons
MISSOURI RIVER BASIN--CONTINUED									
Herman Lage	Aspinwall, Ia.	.038	.036	07-41 04-49 06-52	-- 7.8 3.2	12.07 10.83 8.98	-- 54.8 49.5	-- 4.417 16.1	SCS 5,270 17,358
Howard Mattson	Denison, Ia.	.100	.098	07-44 04-49 07-53	-- 4.8 4.3	16.44 12.56 5.71	-- 69.1 87.1	-- 8.26 16.3	SCS 12,431 30,900
Wilbur Meyer	Denison, Ia.	.297	.293	11-44 04-49 06-52	-- 4.4 3.2	43.80 37.33 34.63	-- 56.3 56.1	-- 5.02 2.88	SCS 6,160 3,520
Max Miller No. 1	Macedonia, Ia.	.223	.218	11-41 05-49 06-52	-- 7.5 3.1	43.84 35.46 32.10	-- 65.2 69.7	-- 5.12 4.95	SCS 7,280 7,520
Max Miller No. 5	Macedonia, Ia.	.233	.228	11-41 05-49 06-52	-- 7.5 3.1	53.19 41.94 41.06	-- 72.6 74.5	-- 6.58 1.23	SCS 10,405 1,996
Barney Mundt	Denison, Ia.	.336	.330	10-44 04-49 06-52	-- 4.5 3.2	41.35 33.08 29.22	-- 54.8 55.5	-- 35.66 33.67	SCS 36,750 34,440
Pracy North	Vail, Ia.	.245	.238	11-39 03-49 07-53	-- 9.4 4.3	48.64 40.04 37.41	-- 52.7 55.7	-- 3.84 2.57	SCS 4,410 3,120
Mule Creek "A"	Malvern, Ia.	.188	.177	07-54 10-56 09-57 10-58 01-60 12-60 02-62 01-63 01-64 01-65 01-66 01-67 01-68 03-69	-- 2.33 .92 1.08 1.33 .92 1.00 .92 1.00 1.00 1.00 1.00 1.00 1.00 1.17	43.9 42.0 40.2 39.6 38.9 36.5 36.0 34.7 35.54 34.45 31.97 32.81 30.88 31.37	-- 73.4 73.4 72.3 58.7 60.3 60.3 69.5 69.7 60.3 560.3 560.3 560.3 560.3 775.5	-- 4.63 11.40 3.11 2.99 14.50 2.99 7.85 4.66 6.20 13.99 8.28 10.91 8.2372	SCS 7,400 18,200 4,900 3,800 19,000 3,940 11,880 -- 8,140 18,370 -- 14,328 --

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	**C/I ratio	Specific weight (dry) (lb.per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency supplying data
		Total | Net					Acre-ft | Tons		
MISSOURI RIVER BASIN--CONTINUED									
Mule Creek "B"	Malvern, Ia.	.383	08-54	--	55.3	*.684	--	--	SCS
		--	10-56	2.17	52.6	*.651	72.6	3.31	5,200
		--	09-57	.92	51.8	*.641	69.5	2.55	3,900
		--	10-58	1.08	50.3	*.623	59.2	3.64	4,700
		--	01-60	1.33	47.6	*.589	67.2	5.52	8,100
		--	12-60	.92	47.1	*.583	55.3	1.55	1,900
		--	02-62	*1.08	45.1	*.558	55.3	5.11	6,150
		--	01-63	.92	43.5	*.538	62.1	4.73	6,400
		--	01-64	1.00	44.6	*.552	51.8	*-2.88	--
		--	01-65	1.00	42.7	*.528	51.8	4.92	5,550
		--	01-66	1.00	36.5	*.452	51.8	16.91	19,080
		--	08-66	.58	39.89	.494	51.8	*-15.704	--
		--	06-69	2.75	40.069	.50	771.64	*-2.298	--
Mule Creek "C"	Malvern, Ia.	.323	07-54	--	76.2	--	--	--	SCS
		--	10-56	2.33	73.8	--	53.9	3.28	3,900
		--	09-57	.92	69.1	--	66.1	15.50	22,300
		--	10-58	1.08	67.8	--	59.8	3.90	5,100
		--	01-60	1.33	66.9	--	61.9	1.98	2,700
		--	12-60	.92	64.9	--	55.2	6.69	8,000
		--	02-62	*1.00	64.1	--	55.2	2.60	3,120
		--	01-63	.92	61.6	--	58.0	8.42	10,640
		--	01-64	1.00	63.59	--	57.8	*-6.19	--
		--	01-65	1.00	59.88	--	65.44	11.49	1,048
		--	03-69	4.17	57.58	--	765.44	1.71	112
Mule Creek "P"	Malvern, Ia.	.063	10-55	--	19.4	*1.470	--	--	SCS
		--	11-56	1.08	18.6	*1.409	77.2	13.30	22,400
		--	09-57	.83	17.7	*1.341	57.8	17.90	22,500
		--	09-58	1.00	17.6	*1.333	72.8	1.50	2,400
		--	01-60	1.33	17.1	*1.295	44.5	5.83	5,600
		--	12-60	.92	16.3	*1.235	56.5	15.30	18,900
		--	02-62	1.17	16.1	*1.220	55.5	2.67	3,300
		--	01-63	.92	15.4	*1.167	60.3	12.17	16,000
		--	01-64	1.00	--	--	56.0	0	0
		--	01-65	1.00	14.7	*1.114	54.3	11.43	13,500
		--	01-66	1.00	13.7	*1.038	54.3	17.32	20,500
		--	01-67	1.0	14.361	*1.088	54.3	*-7.767	--
		--	01-68	1.0	13.793	1.045	54.3	9.467	11,196
		--	02-69	1.08	13.751	1.042	769.5	.65	30,756

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	**C/I ratio	Specific weight (dry) (lb. per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency supplying data
		Total	Net					Acre-ft	Tons
MISSOURI RIVER BASIN--CONTINUED									
Mule Creek "R"	Malvern, Ia.	.819	.796	10-55	103	*.595	--	--	SCS
		--	--	10-56	100	*.578	66.4	4.17	6,000
		--	--	09-57	97.4	*.563	64.4	3.98	5,600
		--	--	09-58	97.2	*.562	64.8	.40	600
		--	--	12-60	94.6	*.547	55.6	2.39	2,900
		--	--	02-62	90.8	*.539	55.7	1.93	2,300
		--	--	01-63	88.7	*.525	55.7	2.61	3,200
		--	--	01-64	--	*.513	59.4	4.21	5,400
		--	--	01-65	--	--	51.1	8-2.02	--
		--	--	01-66	86.0	*.497	49.9	5.46	5,900
		--	--	02-69	80.5	*.465	49.9	6.86	7,500
		--	--		73.867	.423	766.29	1.055	13,419
C. A. Stiles	Washta, Ia.	.593	.572	12-40	78.0	*.394	--	--	SCS
		--	--	03-49	70.7	*.347	46.9	1.54	1,580
		--	--	09-50	69.1	*.335	*57.8	1.82	2,300
		--	--	02-53	67.7	*.326	57.8	.98	1,240
Farmer's Ditch Old Desilting Basin	Bronson, Ia.	22.9	21.4	04-41	10674	*.178	--	--	SCS
		--	--	02-45	275	*.073	68.3	4.91	7,300
Master's Upper Reservoir	Mapleton, Ia.	.178	.169	12-49	37.95	*.949	--	--	SCS
		--	--	09-50	38.20	*.955	--	--	--
		--	--	08-51	35.25	*.881	*77.7	20.1	34,015
		--	--	04-52	34.80	*.870	*77.7	3.67	6,211
		--	--	11-52	34.80	*.870	77.7	--	--
Nepper Main	Mapleton, Ia.	.196	.186	03-49	38.1	*.866	--	--	SCS
		--	--	07-50	37.8	*.859	*76.1	1.25	2,070
		--	--	07-51	34.4	*.782	*76.1	17.96	29,768
		--	--	11-52	34.4	*.782	76.1	--	--
Nepper Southwest	Mapleton, Ia.	.075	.069	03-49	8.45	*.497	--	--	SCS
		--	--	08-50	8.45	*.497	*72.7	0	0
		--	--	08-51	7.88	*.464	*72.7	8.41	13,319
		--	--	11-52	7.88	*.464	72.7	0	0
Theobald Main	Anthon, Ia.	.483	.442	06-49	103.2	*1.053	--	--	SCS
		--	--	08-50	94.0	*.959	*72.3	18.1	28,502
		--	--	05-51	93.5	*.954	*72.3	1.36	2,142
		--	--	10-52	89.2	*.910	72.3	7.13	11,228

SUMMARY OF SEDIMENT DEPOSITION SURVEYS AT SELECTED RESERVOIRS--CONTINUED

Reservoir	Location	Drainage area (square miles)	Date of survey	Period between surveys (years)	Storage capacity (acre-ft)	**C/I ratio	Specific weight (dry) (lb. per cu. ft.)	Average annual sediment accumulation per sq. mile of net drainage area for period shown	Agency supplying data
		Total						Acre-ft	Tons
		Net							

MISSOURI RIVER BASIN--CONTINUED

Theobald Lateral C.	Anthon, Ia.	.250	.234	--	37.5	*.735	--	--	SCS
		--	--	1.70	34.5	*.676	*67.9	7.65	11,313
		--	--	.83	34.3	*.673	*67.9	1.08	1,597
		--	--	.94	33.5	*.657	67.9	3.60	5,324
Theobald Lateral D.	Anthon, Ia.	.098	.089	--	19.5	*.975	--	--	SCS
		--	--	1.71	18.9	*.945	*73.1	3.63	5,780
		--	--	.82	18.7	*.935	*73.1	2.86	4,560
		--	--	1.42	18.6	*.930	73.1	.72	1,146
Hortenson	Cherokee, Ia.	1.39	1.37	--	229.0	*.718	--	--	SCS

** C/I ratio was derived from the reservoir storage capacity and the average annual inflow. Normally the average annual inflow for the entire period of record was used to compute the C/I ratios.

- 1 Water supply pool capacity. Reservoir has greater capacity at spillway crest elevation.
- 2 Reservoir silted full June 1944.
- 3 Includes 0.13 ac-ft of sediment above emergency spillway.
- 4 Adjusted to correct previous year's error.
- 5 Based on December 1960 sample.
- 6 Pond dry when surveyed.
- 7 Weight determined by gamma probe.
- 8 Minus (-) indicates scour or compaction (treated as negative sediment).
- 9 Includes upstream structures.
- 10 Conservation pool capacity. Flood pool capacity is 1,952 ac-ft.
- 11 Increase in capacity in 1950 was due to settlement of dam.

* Estimated or assumed.

