WATER-QUALITY DATA (JULY 1986 THROUGH SEPTEMBER 1987) AND STATISTICAL SUMMARIES (MARCH 1985 THROUGH SEPTEMBER 1987) FOR THE CLARK FORK AND SELECTED TRIBUTARIES FROM DEER LODGE TO MISSOULA, MONTANA

By John H. Lambing

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CONVERSION FACTORS

The following factors can be used to convert inch-pound units to metric (International System) units.

Multiply inch-pound unit	By	To obtain metric unit
cubic foot per second (ft^3/s)	0.028317	cubic meter per second
mile	1.609	kilometer
part per million	1	microgram per gram
ton (short)	907.2	kilogram
ton per day (ton/d)	907.2	kilogram per day

Temperature can be converted from degrees Celsius (°C) to degrees Fahrenheit (°F) by the equation:

$$°F = 9/5\ (°C) + 32$$

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ABSTRACT

Water-quality sampling was conducted at seven sites on the Clark Fork and selected tributaries from Deer Lodge to Missoula, Montana, from July 1986 through September 1987. This report presents tabulations and statistical summaries of the water-quality data. The data presented in this report supplement previous data collected from March 1985 through June 1986 for six of the seven sites.

Included in this report are tabulations of instantaneous values of streamflow, onsite water quality, hardness, and concentrations of trace elements and suspended sediment for periodic samples. Also included are tables and hydrographs of daily mean values for streamflow, suspended-sediment concentration, and suspended-sediment discharge at three mainstem stations and one tributary.

Statistical summaries are presented for periodic water-quality data collected from March 1985 through September 1987. Selected data are illustrated by graphs showing median concentrations of trace elements, relation of trace-element concentrations to suspended-sediment concentrations, and median concentrations of trace elements in suspended sediment.

INTRODUCTION

The Clark Fork originates south of Deer Lodge in west-central Montana at the confluence of Silver Bow Creek and Warm Springs Creek (fig. 1). Along the reach of the Clark Fork from Deer Lodge to Milltown Dam at Milltown, a distance of about 97 river miles, four major tributaries enter the river: Little Blackfoot River, Flint Creek, Rock Creek, and Blackfoot River. Principal surface-water uses in the upper Clark Fork basin include habitat for trout fisheries, irrigation, stock watering, light industry, and hydroelectric power generation. Major land uses include agriculture, logging, mining, and recreation.

During the past century, deposits of copper, gold, silver, and lead ores have been extensively mined, milled and smelted in the drainages of Silver Bow and Warm Springs Creeks. There has also been moderate- and small-scale mining in the basins of the major tributaries to the Clark Fork. Tailings derived from mineral processing commonly contain large quantities of trace elements that may be potentially toxic

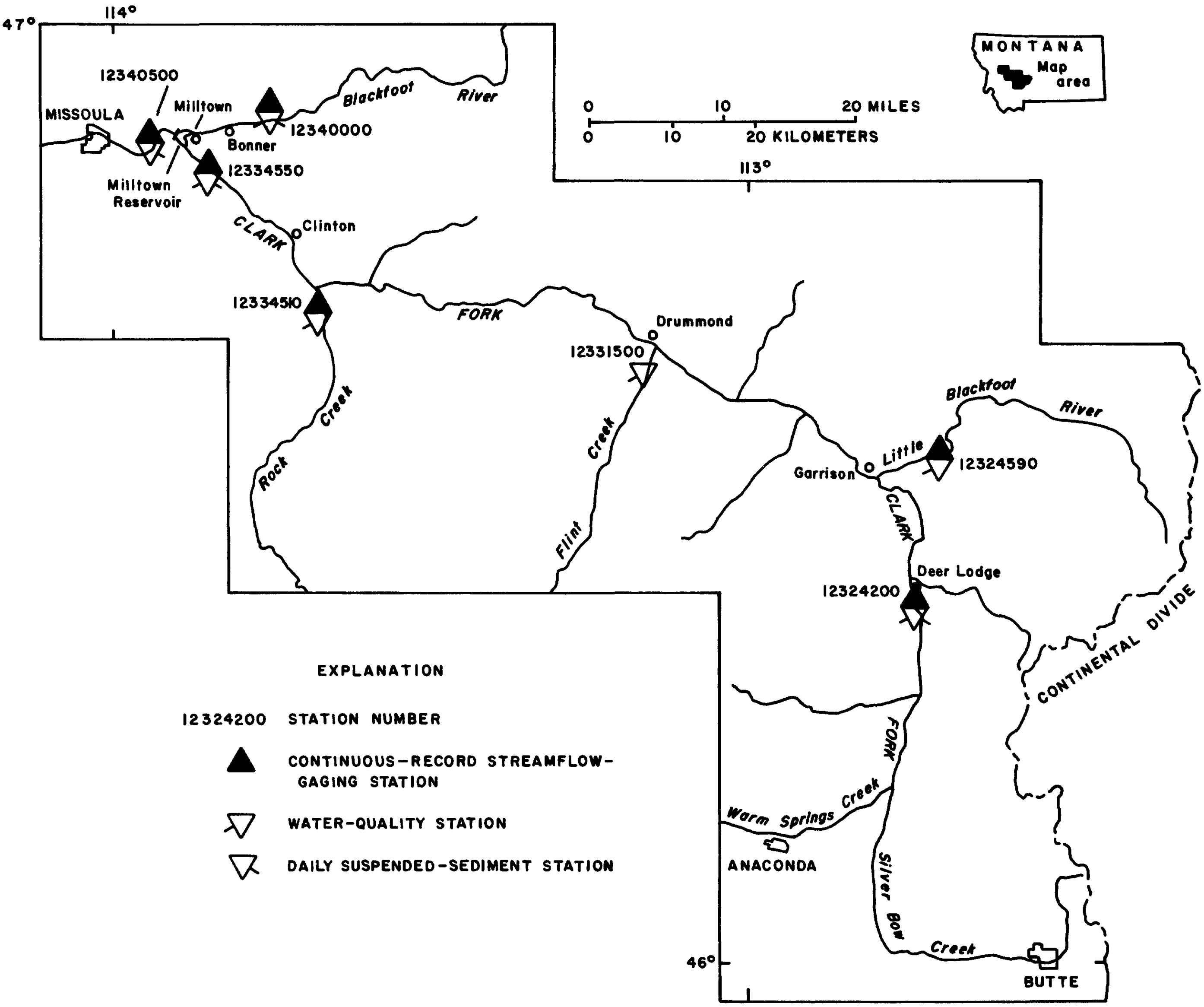

Figure 1.--Location of study area.

in stream and riparian habitats. Since mining began in the basin, overland runoff and floods have transported large quantities of tailings down the Clark Fork and deposited them along the stream channel, on flood plains, and in Milltown Reservoir. The continual processes of channel migration and overland runoff periodically erode unstable sediments and tailings, making them available for transport and redeposition farther downstream in the Clark Fork channel and flood plain.

Large-scale mining operations in Butte ceased in 1983, but subsequent public concern about the effects of tailings distributed throughout the basin has resulted in several studies being conducted to establish a water-quality data base for the river. The data presented in this report are part of a comprehensive effort by State, Federal, and private agencies to determine various aspects of water quality in the Clark Fork basin.

The purpose of this report is to present tabulations and statistical summaries of water-quality data for three sampling stations on the Clark Fork between Deer Lodge and Missoula and for four stations near the mouths of major tributaries entering this reach. The data include onsite measurements of streamflow and water quality, and laboratory analyses of selected trace elements and suspended sediment for six water-quality stations upstream from Milltown Reservoir. These data, which were collected from July 1986 through September 1987, supplement previous data collected at the six stations from March 1985 through June 1986 (Lambing, 1987). Daily suspended-sediment samples were collected at one additional station on the Clark Fork downstream from Milltown Reservoir. Statistical summaries, in the form of a table and graphs, describe the water-quality data for the period March 1985 through September 1987.

The data in this report, which were collected by the U.S. Geological Survey in cooperation with the Montana Department of Health and Environmental Sciences and the Montana Power Company, describe the geographic and hydrologic variability of water quality among the sampling stations. These data can be used as a basis for resource management by documenting baseline conditions and sediment-transport characteristics of the upper Clark Fork basin.

SAMPLING LOCATIONS

Data in this report were collected at various stations as part of two investigations, each with different sampling objectives. Information about the type of data collected at each of the sampling stations is given in table 1.

In one investigation, periodic sampling for trace elements and suspended sediment at the six water-quality stations upstream from Milltown Reservoir was resumed in April 1987 and continued through September 1987; these stations had been sampled previously from March 1985 through June 1986 (Lambing, 1987). At two stations (Clark Fork at Deer Lodge and Clark Fork at Turah Bridge, near Bonner), daily suspended-sediment discharge was determined in addition to periodic water-quality sampling to identify the magnitude of daily variation at each station and the increase in sediment load transported between the stations. This sampling was conducted in cooperation with the Montana Department of Health and Environmental Sciences.

In the other investigation, daily suspended-sediment discharge was determined from July 1986 to April 1987 at two stations upstream from Milltown Reservoir (Clark Fork at Turah Bridge, near Bonner and Blackfoot River near Bonner) and at one station downstream from the reservoir (Clark Fork above Missoula). The daily sediment discharges determined at these three stations can be used to calculate the sediment balance through Milltown Reservoir during repair construction on Milltown Dam by the Montana Power Company. Daily sediment sampling upstream and downstream from Milltown Reservoir was conducted in cooperation with the Montana Power Company.

Table 1.--*Types of data collected at sampling stations*

[--, no data]

Station number (fig. 1)	Station name	Type of data collection		
		Continuous-record streamflow	Periodic cross-sectional water quality[1]	Daily single-vertical suspended sediment
12324200	Clark Fork at Deer Lodge, Mont.	X	X	X
12324590	Little Blackfoot River near Garrison, Mont.	X	X	--
12331500	Flint Creek near Drummond, Mont.	--	X	--
12334510	Rock Creek near Clinton, Mont.	X	X	--
12334550	Clark Fork at Turah Bridge, near Bonner, Mont.	X	X	X
12340000	Blackfoot River near Bonner, Mont.	X	X	X
12340500	Clark Fork above Missoula, Mont.	X	--	X

[1]Trace elements and suspended sediment.

METHODS OF DATA COLLECTION AND ANALYSIS

Periodic trace-element and suspended-sediment samples were collected by cross-sectional depth-integration methods according to standard U.S. Geological Survey procedures described by Guy and Norman (1970), U.S. Geological Survey (1977), and Knapton (1985). Daily suspended-sediment samples were collected by depth integration at a single vertical in the cross section at the daily suspended-sediment stations listed in table 1.

Sampling frequency for periodic cross-sectional samples was designed to identify concentrations throughout the range of hydrologic conditions. To document maximum concentrations of suspended constituents, efforts were made to sample during runoff conditions, rather than on a routine schedule. However, few samples were collected at medium streamflows and no samples were obtained at high streamflows because of a lack of substantial runoff during the 1986-87 sampling period.

Quality-assurance practices for data collection and processing were those used by the Montana District of the U.S. Geological Survey (J.R. Knapton, written commun., 1983). Quality-assurance practices for laboratory analysis are described by Friedman and Erdmann (1982).

Streamflow

Instantaneous streamflow at the time of periodic cross-sectional sampling was determined at all stations, either by direct measurement or from stage-discharge rating tables (Rantz and others, 1982). A continuous record of streamflow was available for all stations except Flint Creek near Drummond (table 1).

Onsite Water Quality

At times of periodic cross-sectional sampling, specific conductance, pH, water temperature, bicarbonate, carbonate, and alkalinity were measured onsite. Measurements were made according to procedures described by Knapton (1985).

Hardness

Samples were analyzed for concentrations of dissolved calcium and magnesium to enable calculation of hardness. Hardness was determined because of its effect on the toxicity of some trace elements. Samples for calcium and magnesium were analyzed at the U.S. Geological Survey water-quality laboratory in Denver, Colorado. Samples were analyzed and hardness was calculated according to procedures described by Fishman and Friedman (1985).

Trace Elements

Periodic cross-sectional samples for trace elements were analyzed for dissolved arsenic, cadmium, copper, iron, lead, manganese, and zinc; total arsenic; and total recoverable cadmium, copper, iron, lead, manganese, and zinc. Samples were analyzed at the U.S. Geological Survey water-quality laboratory in Denver, Colorado. Analytical methods used are described by Fishman and Friedman (1985).

Suspended Sediment

Periodic cross-sectional samples of suspended sediment were analyzed for concentration and particle-size distribution (percent less than 0.062 millimeter diameter). Single-vertical samples at the four daily suspended-sediment stations (table 1) were analyzed only for concentration. Suspended-sediment samples were analyzed at the U.S. Geological Survey sediment laboratory in Helena, Montana. Analytical methods used are described by Guy (1969).

DATA

Streamflow

Instantaneous streamflows at times of periodic cross-sectional sampling from July 1986 through September 1987 are listed in table 2 at the back of the report. Daily mean streamflows at the four daily suspended-sediment stations for the 1986-87 sampling period are presented in tables 3 to 6 at the back of the report.

Onsite Water Quality

Results of onsite measurements of water quality for periodic samples collected during for the 1986-87 sampling period are given in table 2.

Hardness

Concentrations of dissolved and noncarbonate hardness are presented in table 2 for the six water-quality stations. Calcium and magnesium concentrations used to calculate hardness are also in table 2.

Trace Elements

Trace-element concentrations analyzed from periodic cross-sectional samples collected from April through September 1987 at the six water-quality stations (table 1) upstream from Milltown Reservoir are listed in table 2. Values for suspended concentrations of trace elements can be estimated by subtracting the dissolved from the total or total recoverable concentration.

Suspended Sediment

Suspended-sediment cross-sectional samples were collected periodically from July 1986 through September 1987. Suspended-sediment concentrations and particle-size distribution at all seven sampling stations are listed in table 2.

Daily values for suspended-sediment concentrations and discharges at the four daily suspended-sediment stations are presented in tables 3 to 6 for the sampling period 1986-87. Daily mean suspended-sediment concentrations were computed according to procedures described by Porterfield (1972). Daily mean streamflows and daily mean suspended-sediment concentrations were used to calculate daily suspended-sediment discharges according to the equation:

$$Q_s = Q \times C \times K \qquad (1)$$

where:

Q_s = suspended-sediment discharge, in tons per day;
Q = streamflow, in cubic feet per second;
C = suspended-sediment concentration, in milligrams per liter; and
K = conversion constant (0.0027 for concentrations reported in milligrams per liter).

Hydrographs of daily mean streamflows and suspended-sediment concentrations at the four daily suspended-sediment stations are shown in figures 2 to 5. Hydrographs of daily suspended-sediment discharges (fig. 6) at the Clark Fork at Deer Lodge and the Clark Fork at Turah Bridge, near Bonner from July 1986 through September 1987 illustrate daily variations and differences between the quantities of sediment transported at the stations. Hydrographs of the combined daily suspended-sediment discharges for the Clark Fork at Turah Bridge, near Bonner plus the Blackfoot River near Bonner are plotted with the Clark Fork above Missoula July 1986 to April 1987 (fig. 7) to illustrate suspended-sediment loads entering and leaving Milltown Reservoir.

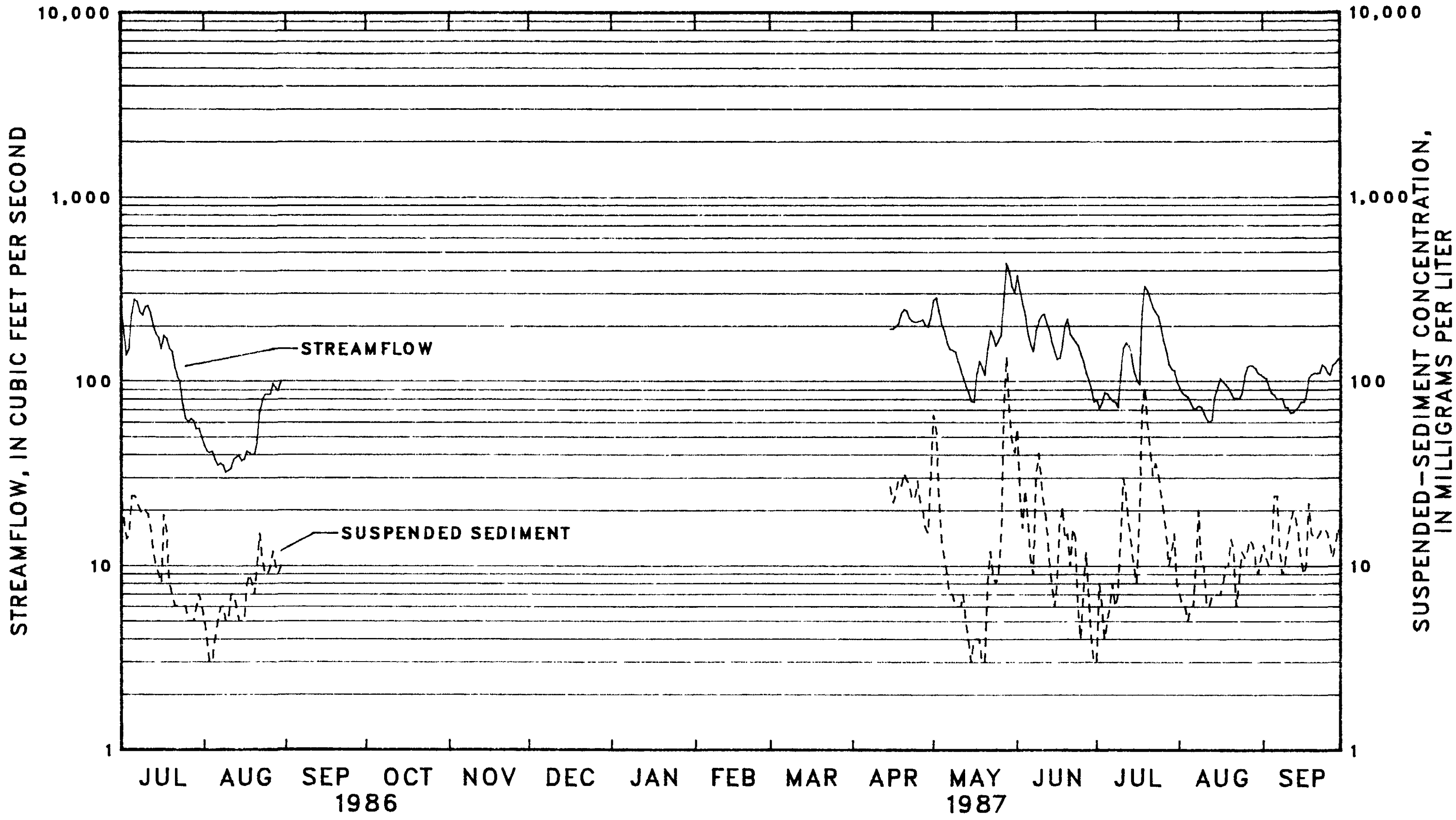

Figure 2.--Daily mean streamflow and suspended-sediment concentration for the Clark Fork at Deer Lodge, July 1986 through September 1987.

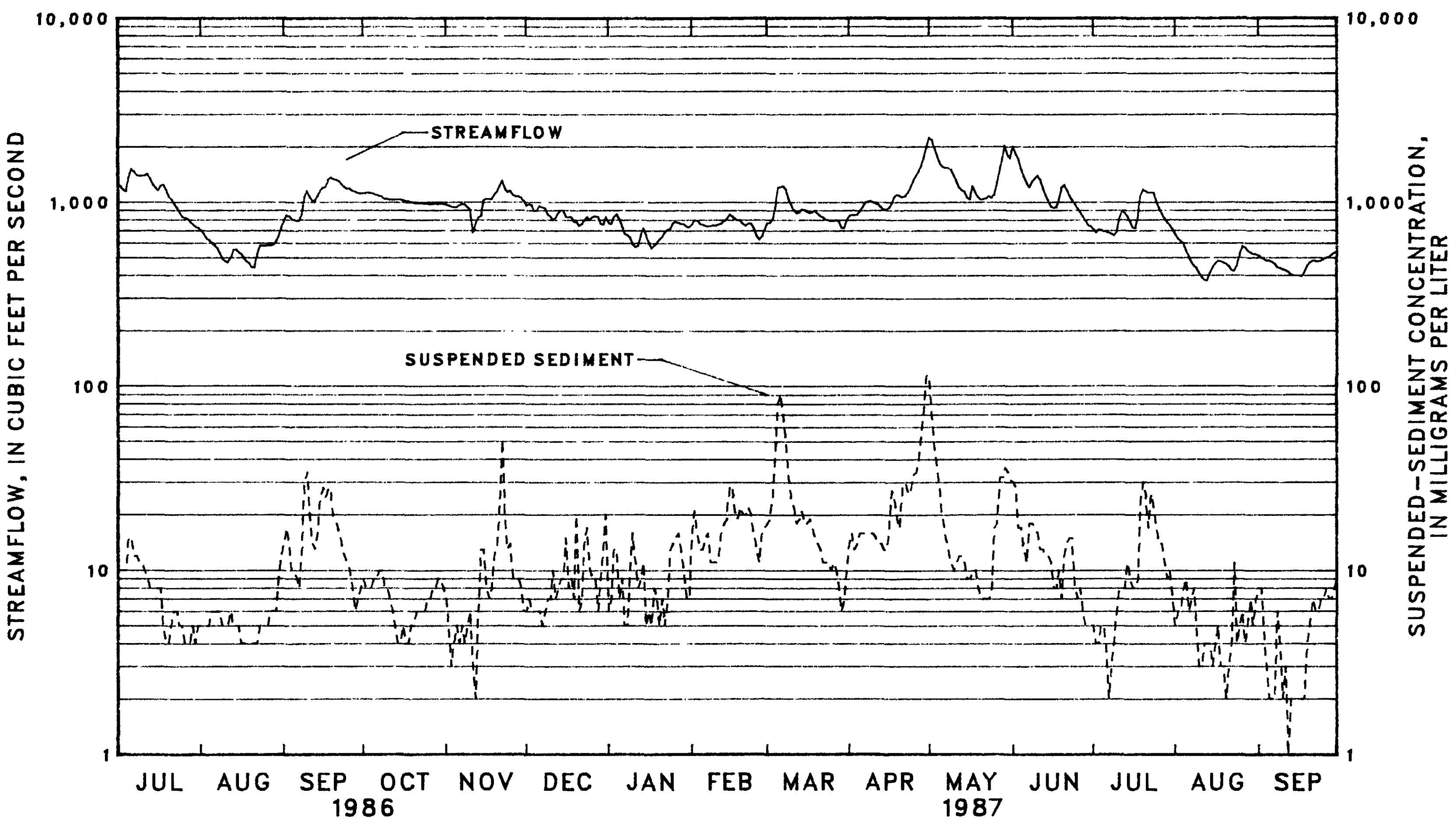

Figure 3.--Daily mean streamflow and suspended-sediment concentration for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987.

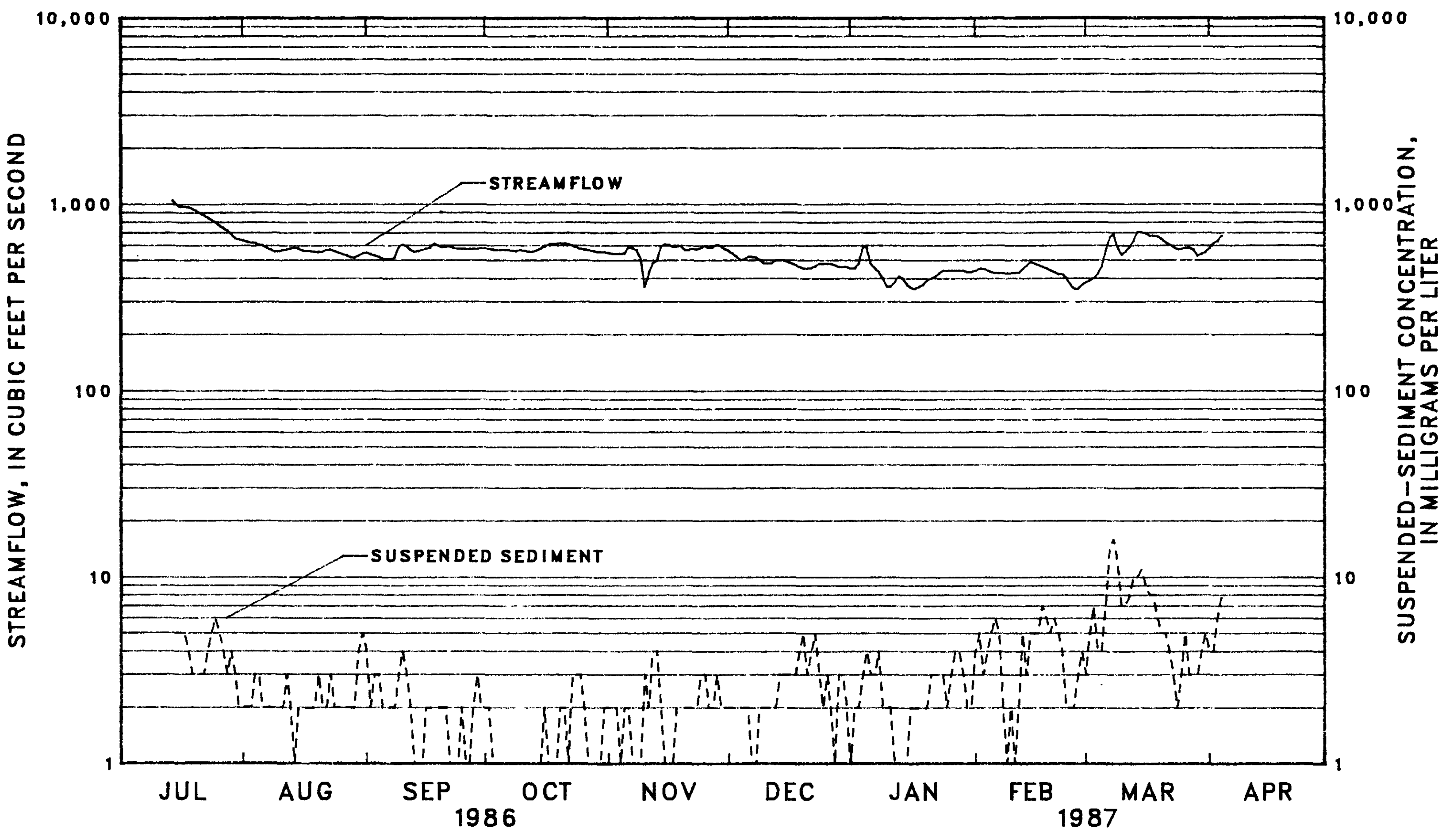

Figure 4.--Daily mean streamflow and suspended-sediment concentration for the Blackfoot River near Bonner, July 1986 to April 1987.

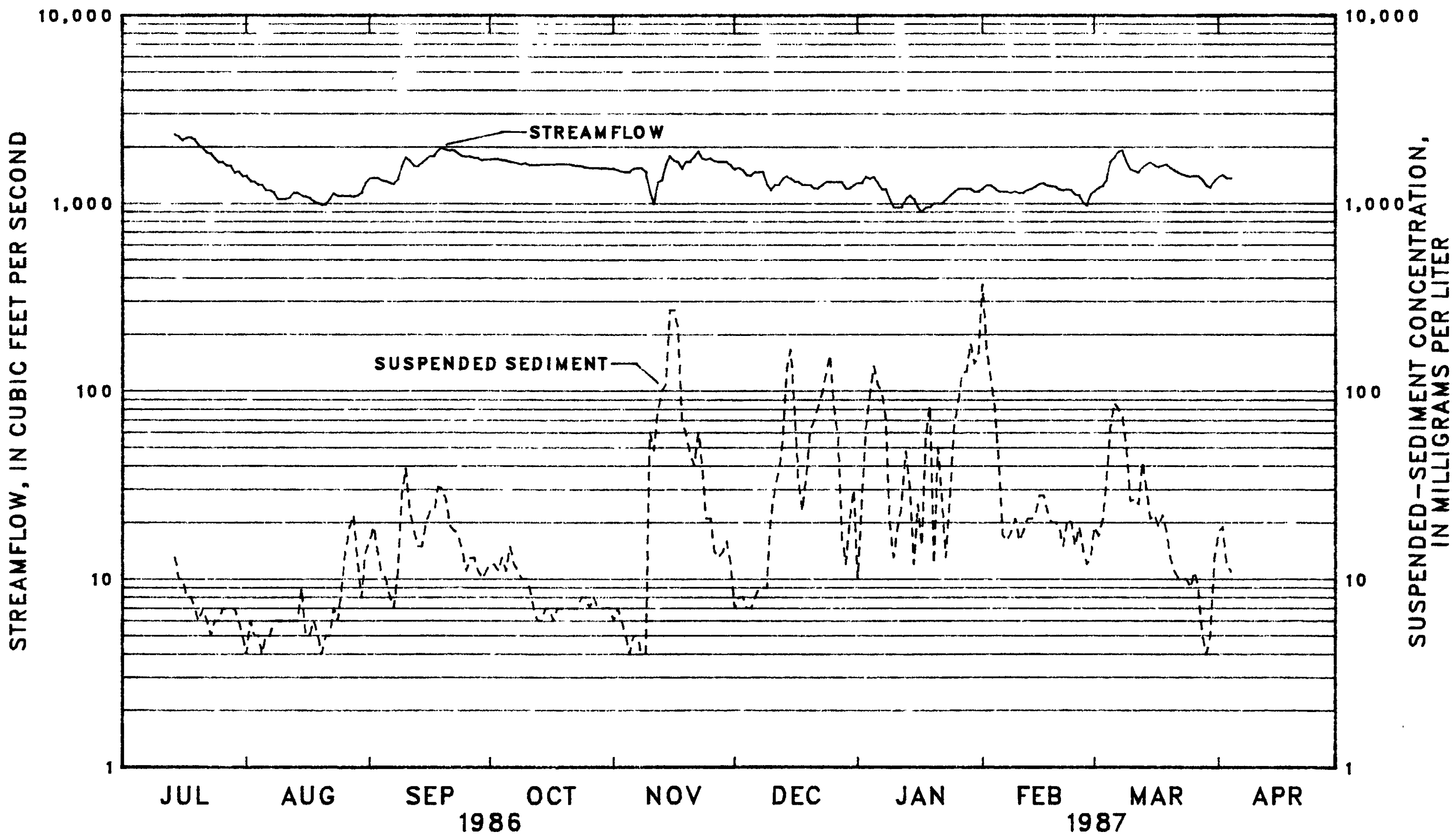

Figure 5.--Daily mean streamflow and suspended-sediment concentration for the Clark Fork above Missoula, July 1986 to April 1987.

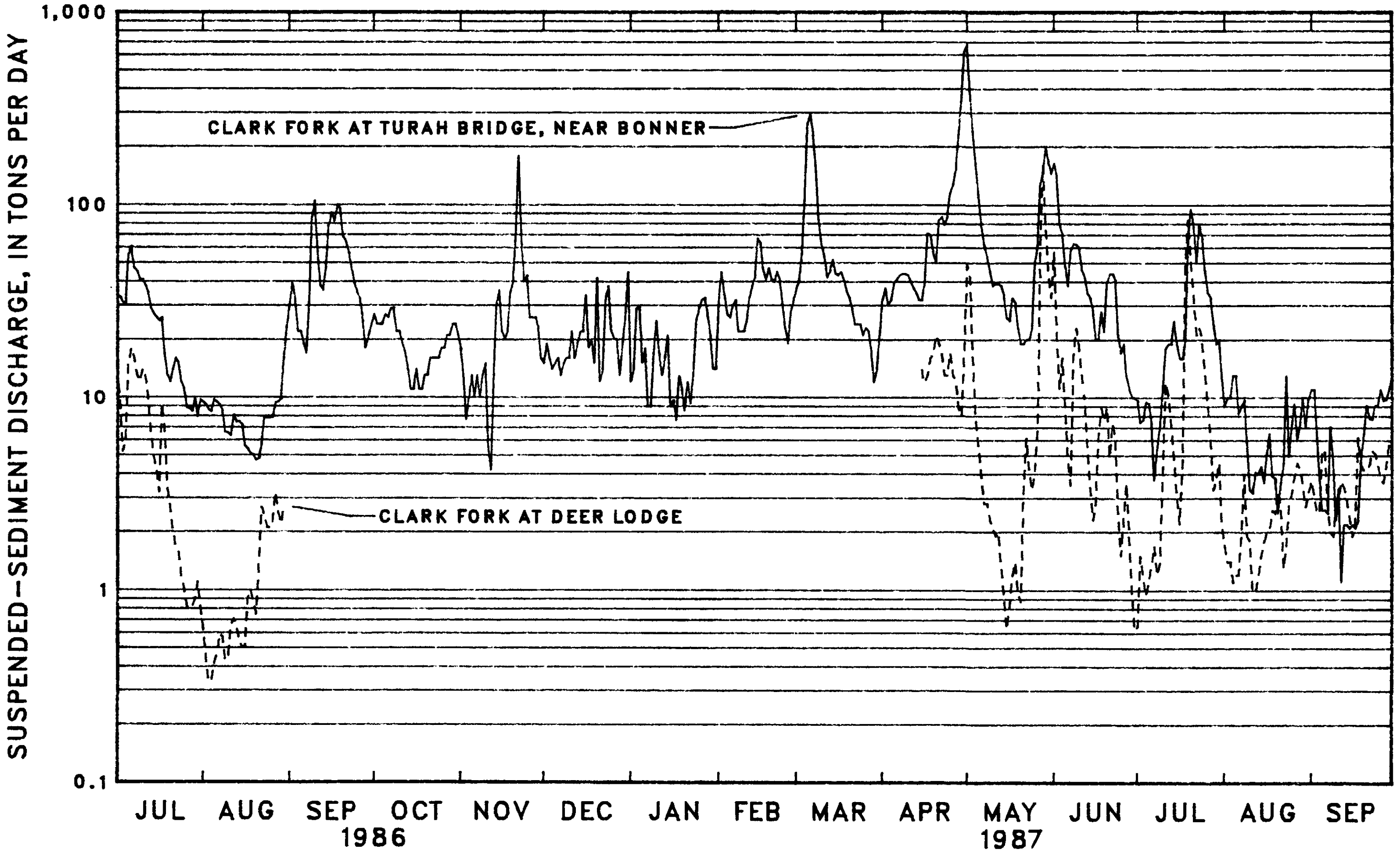

Figure 6.--Daily suspended-sediment discharge for the Clark Fork at Deer Lodge and Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987.

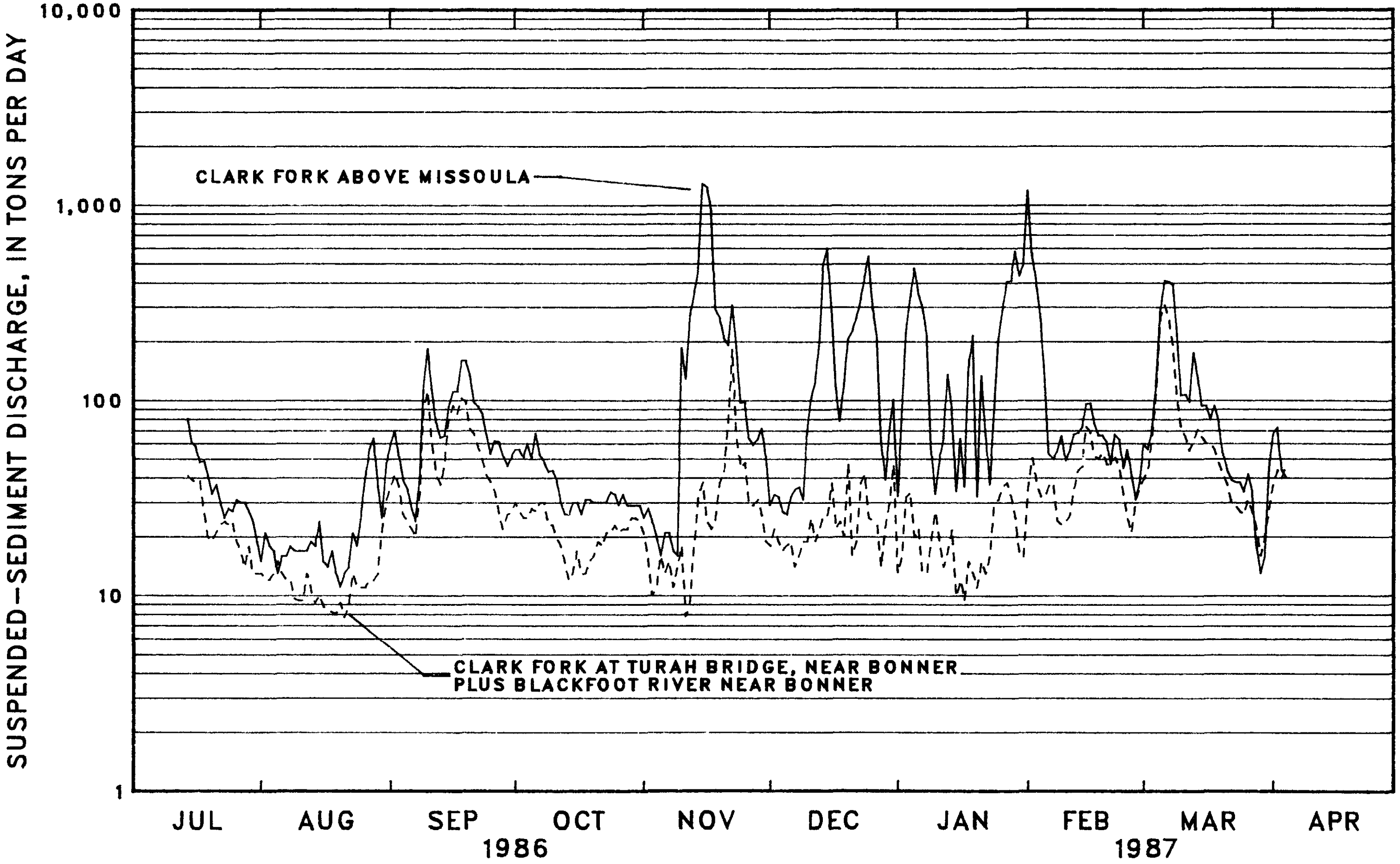

Figure 7.--Daily suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner plus Blackfoot River near Bonner compared to the Clark Fork above Missoula, July 1986 to April 1987.

STATISTICAL SUMMARIES

A statistical summary of water-quality data collected from March 1985 through September 1987 at the six water-quality stations upstream from Milltown Reservoir is given in table 7 at the back of the report. Statistics in table 7 were calculated by standard computer programs of SAS Institute, Inc. (1979).

Graphical presentations of water-quality statistics illustrate the variation of selected constituent concentrations among the sampling stations. The graphs represent concentrations of all samples collected since March 1985.

Median concentrations of trace elements at each of the six water-quality stations are shown in figures 8 to 13. Median concentrations less than the analytical detection limit were arbitrarily plotted midway between zero and the detection limit. Cadmium was not plotted because median concentrations at all sites were less than the detection limit of 1 microgram per liter. The graphs can be used to compare the geographic variation among the sites and between the dissolved and suspended phases of the trace elements.

The relations between total or total recoverable trace-element concentrations and suspended-sediment concentrations are shown in figures 14 to 20. Values less than the detection limit are plotted midway between zero and the detection limit. Although regression statistics are not presented, a least-squares line of best fit is drawn as an indication of potential linear relation. Because of the limited quantity of data for medium- and high-flow conditions, the regression lines may not represent actual relations and are not usable for making predictions.

Median trace-element concentrations within suspended sediment for each of the six water-quality stations are shown in figures 21 to 26. Presenting trace-element concentrations in the sediment excludes the diluting or concentrating effects of flow volumes, and indicates the trace-element content of fluvial sediments derived from areas upstream from the sampling site. To calculate trace-element concentrations in the suspended sediment, the value for suspended trace-element concentration in each sample was first determined by subtraction of the dissolved from the total or total-recoverable concentration. Where "less than" dissolved or total recoverable trace-element concentrations were reported, a value midway between zero and the analytical detection limit was assumed for calculation of the suspended trace-element concentration. The suspended trace-element concentration for each sample then was divided by the suspended-sediment concentration in the water and multiplied by 1,000 to give a mass-ratio concentration in micrograms of trace element per gram of suspended sediment (parts per million). Cadmium was not plotted because the median concentrations of suspended cadmium at all sites were less than the analytical detection limit of 1 microgram per liter.

Graphs showing the statistical distribution of suspended-sediment concentrations for periodic cross-sectional samples are presented in figure 27. The statistical distribution for each of the six water-quality stations includes the range and selected percentile values for suspended-sediment samples collected from March 1985 through September 1987.

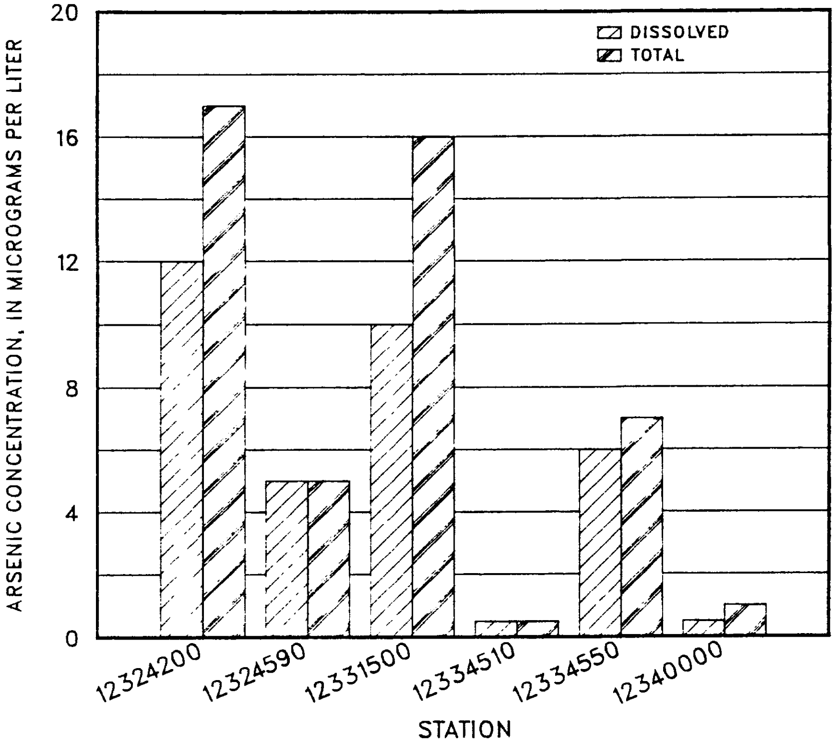

Figure 8.--Median concentrations of dissolved and total arsenic in water, March 1985 through September 1987.

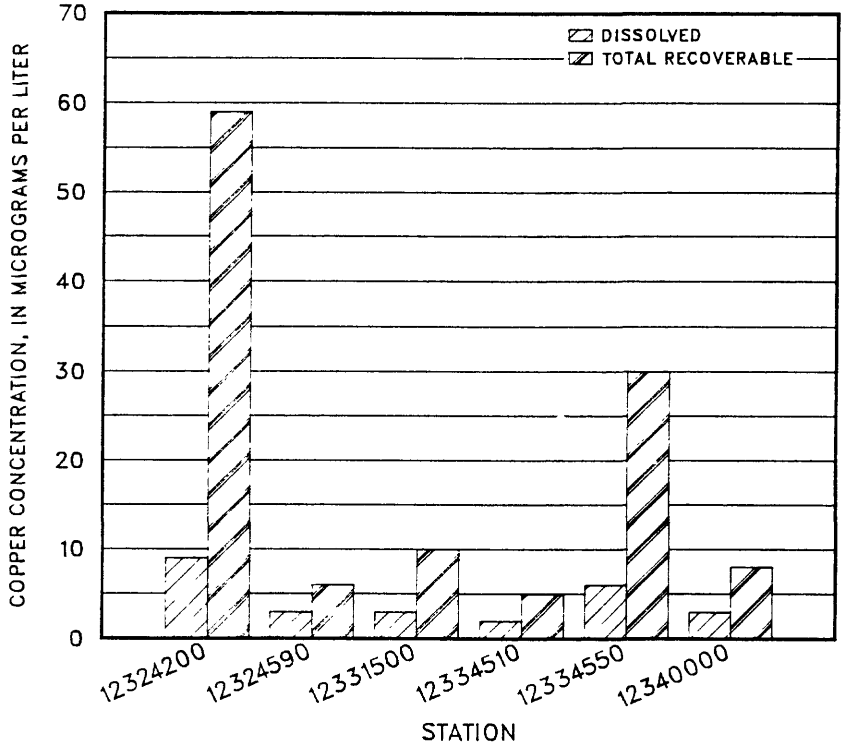

Figure 9.--Median concentrations of dissolved and total recoverable copper in water, March 1985 through September 1987.

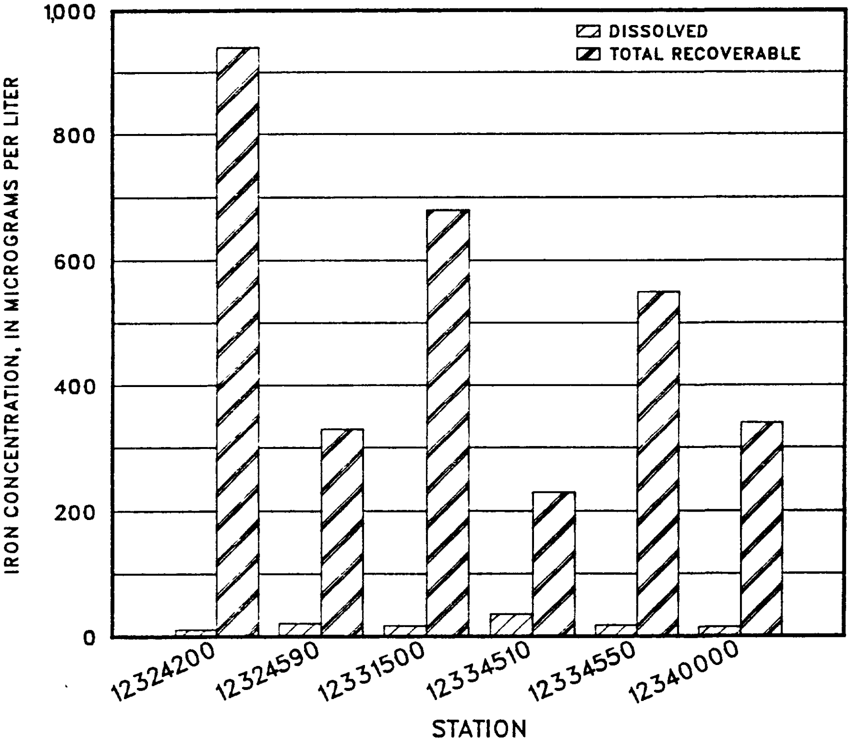

Figure 10.--Median concentrations of dissolved and total recoverable iron in water, March 1985 through September 1987.

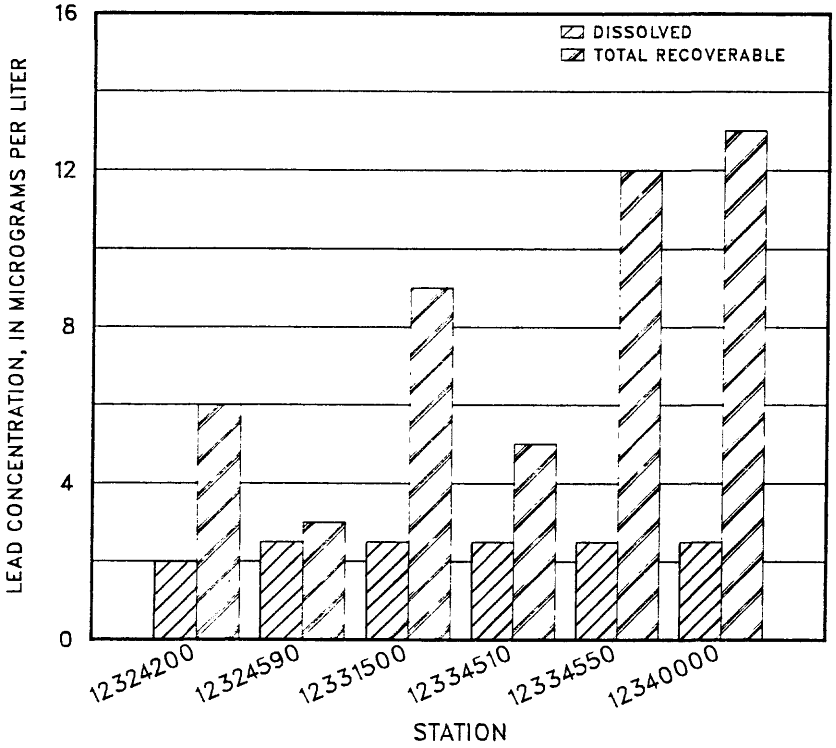

Figure 11.--Median concentrations of dissolved and total recoverable lead in water, March 1985 through September 1987.

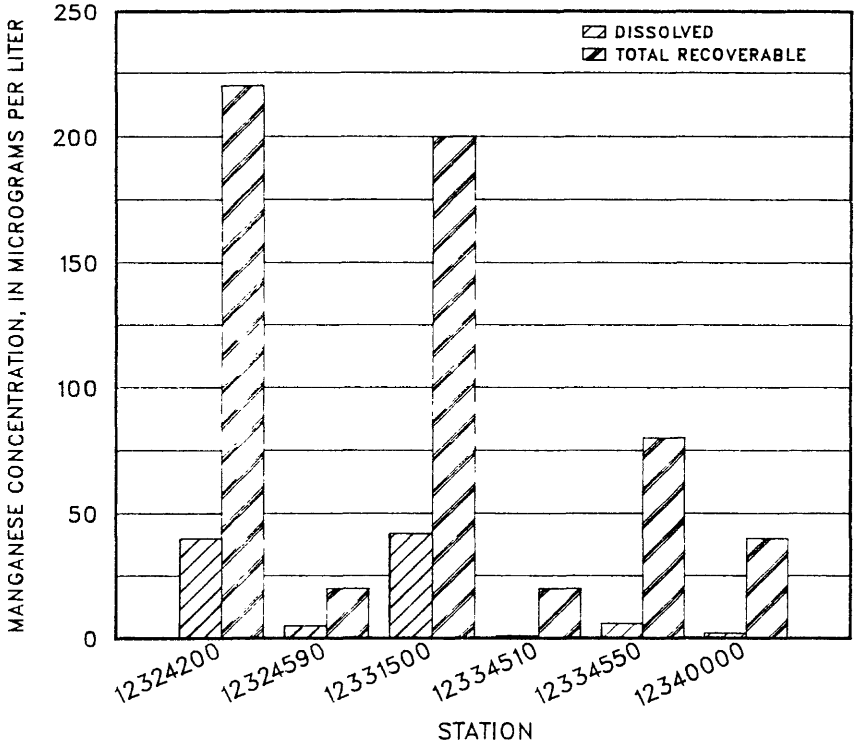

Figure 12.--Median concentrations of dissolved and total recoverable manganese in water, March 1985 through September 1987.

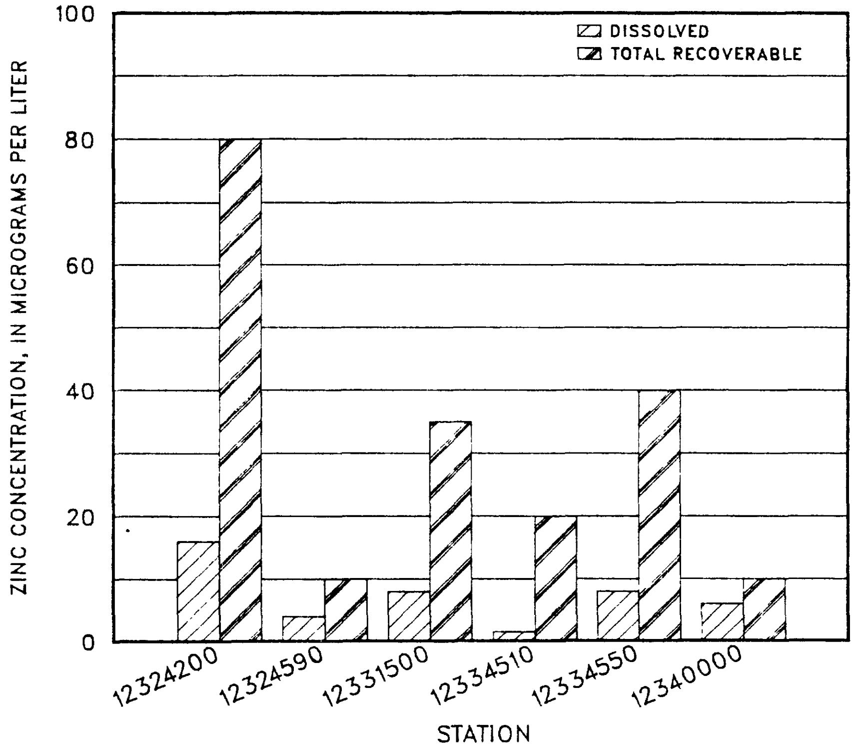

Figure 13.--Median concentrations of dissolved and total recoverable zinc in water, March 1985 through September 1987.

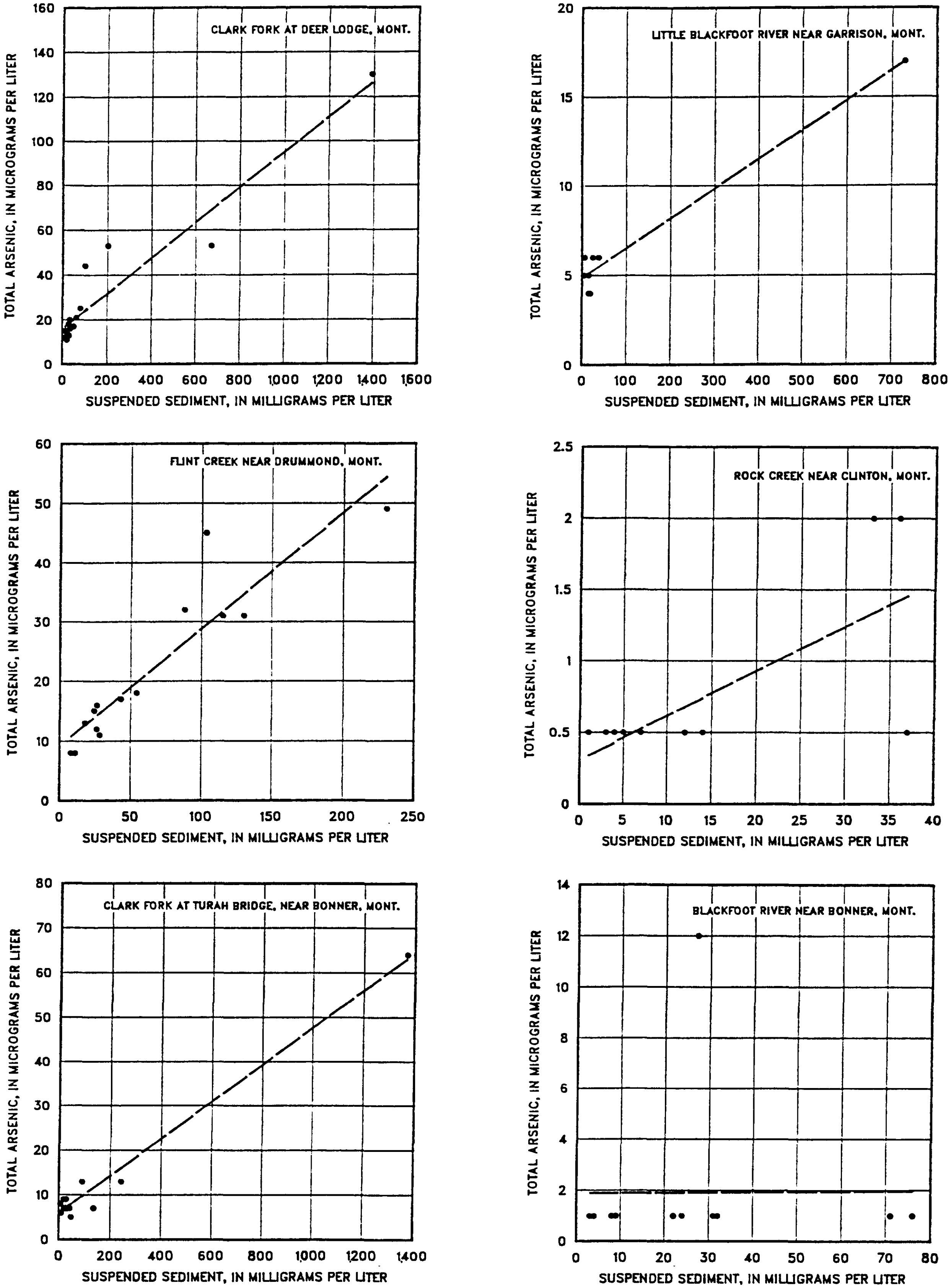

Figure 14.--Relation of concentrations of total arsenic to suspended sediment, March 1985 through September 1987.

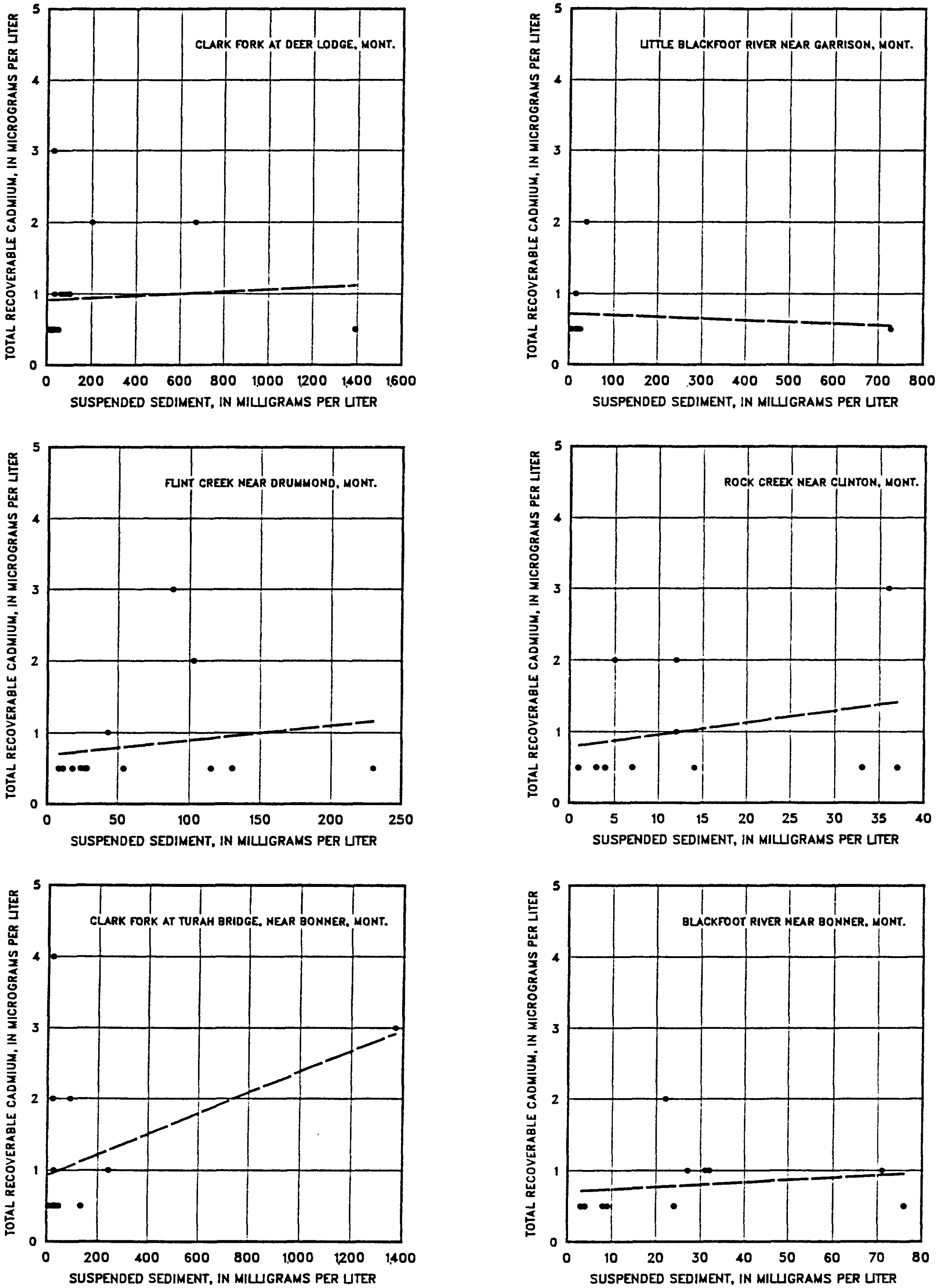

Figure 15.--Relation of concentrations of total recoverable cadmium to suspended sediment, March 1985 through September 1987.

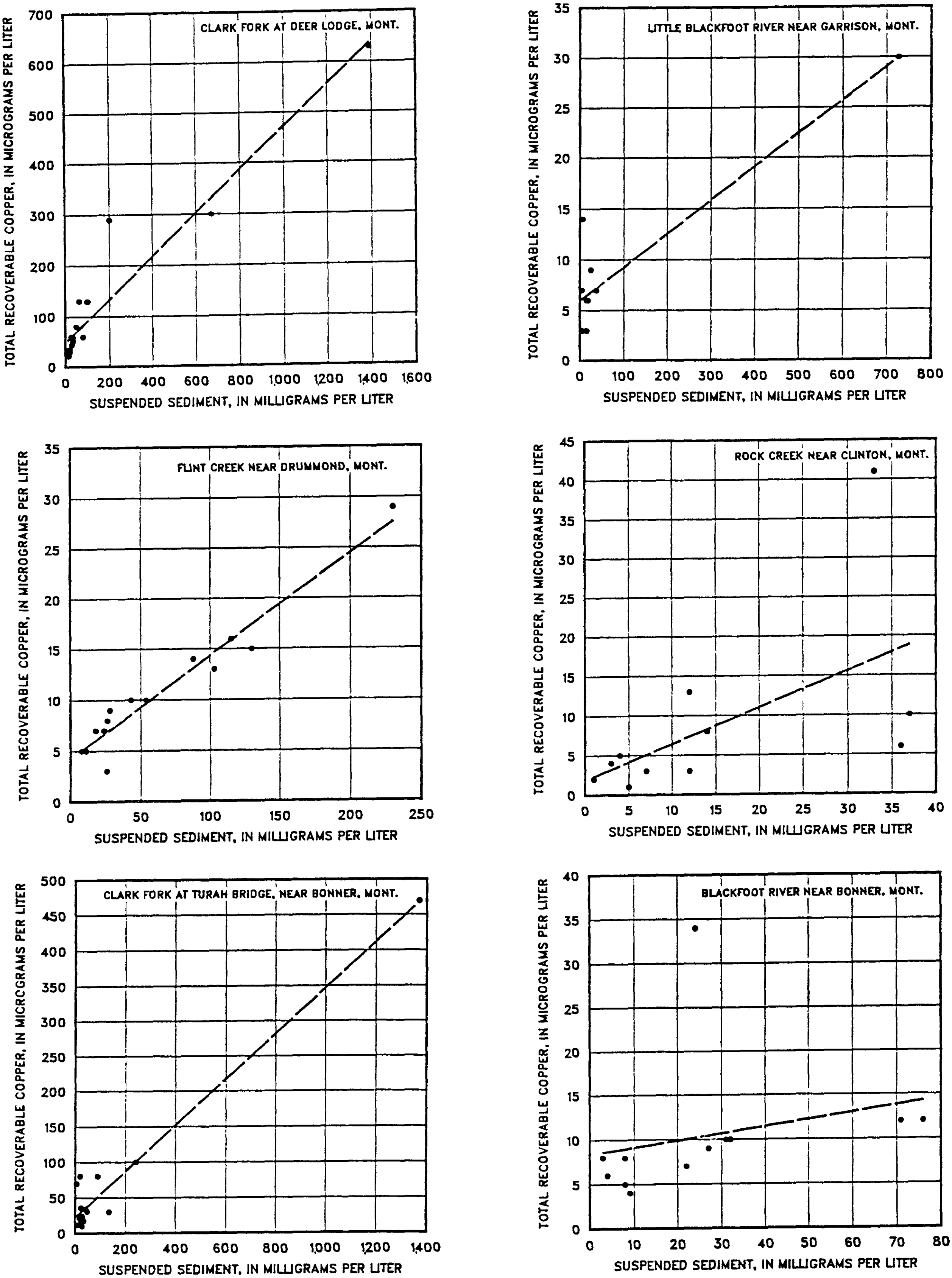

Figure 16.--Relation of concentrations of total recoverable copper to suspended sediment, March 1985 through September 1987.

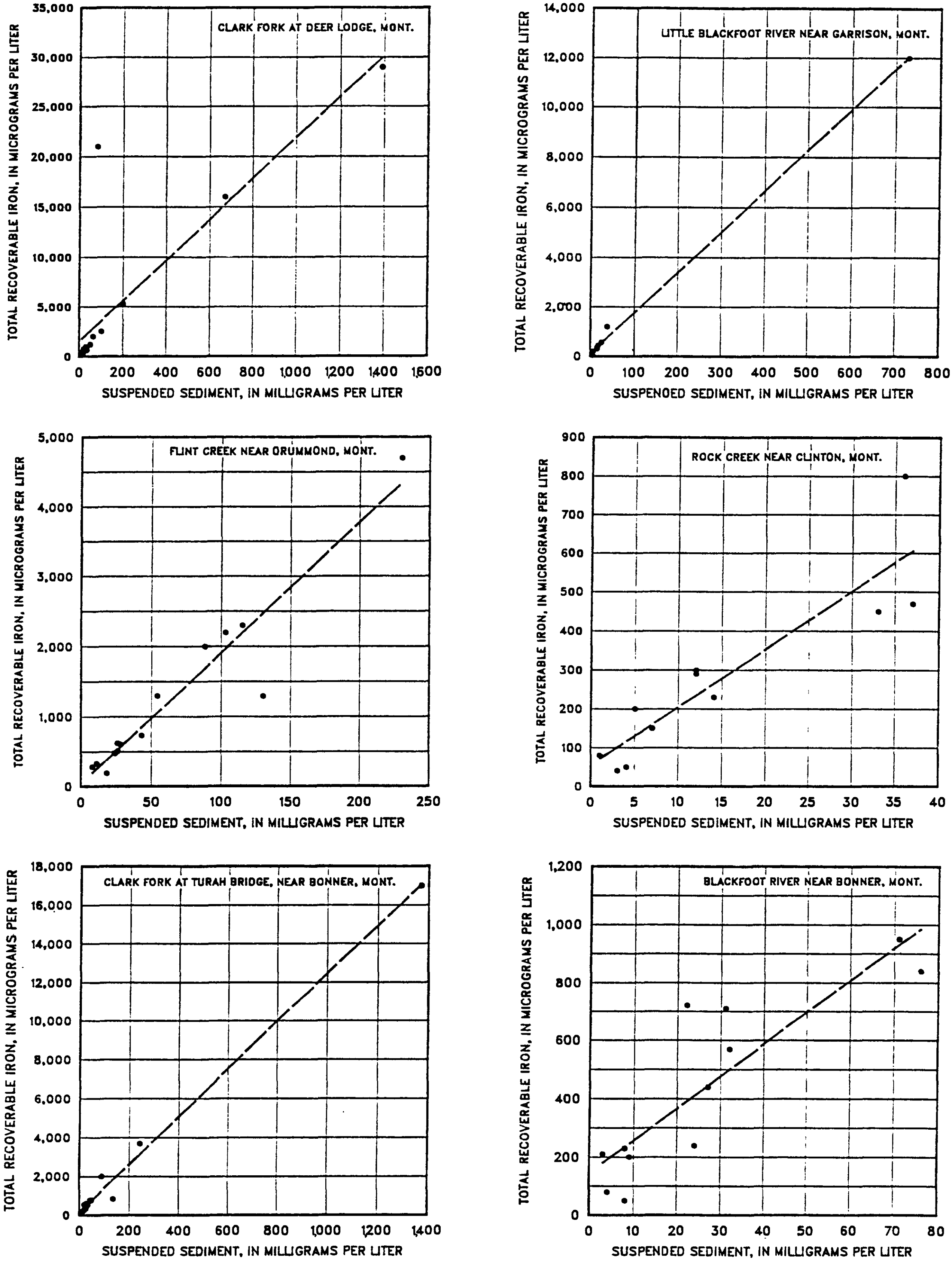

Figure 17.--Relation of concentrations of total recoverable iron to suspended sediment, March 1985 through September 1987.

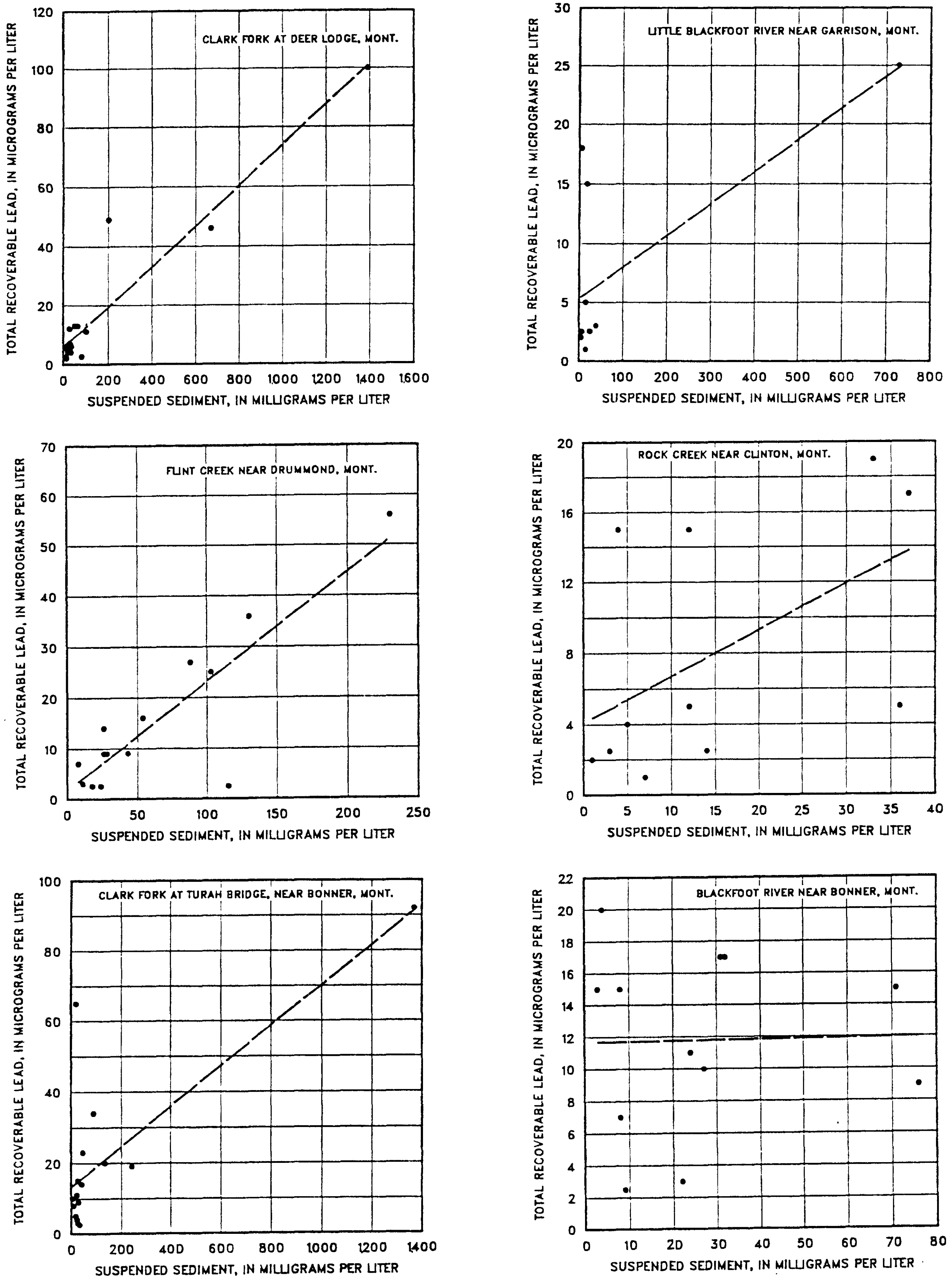

Figure 18.--Relation of concentrations of total recoverable lead to suspended sediment, March 1985 through September 1987.

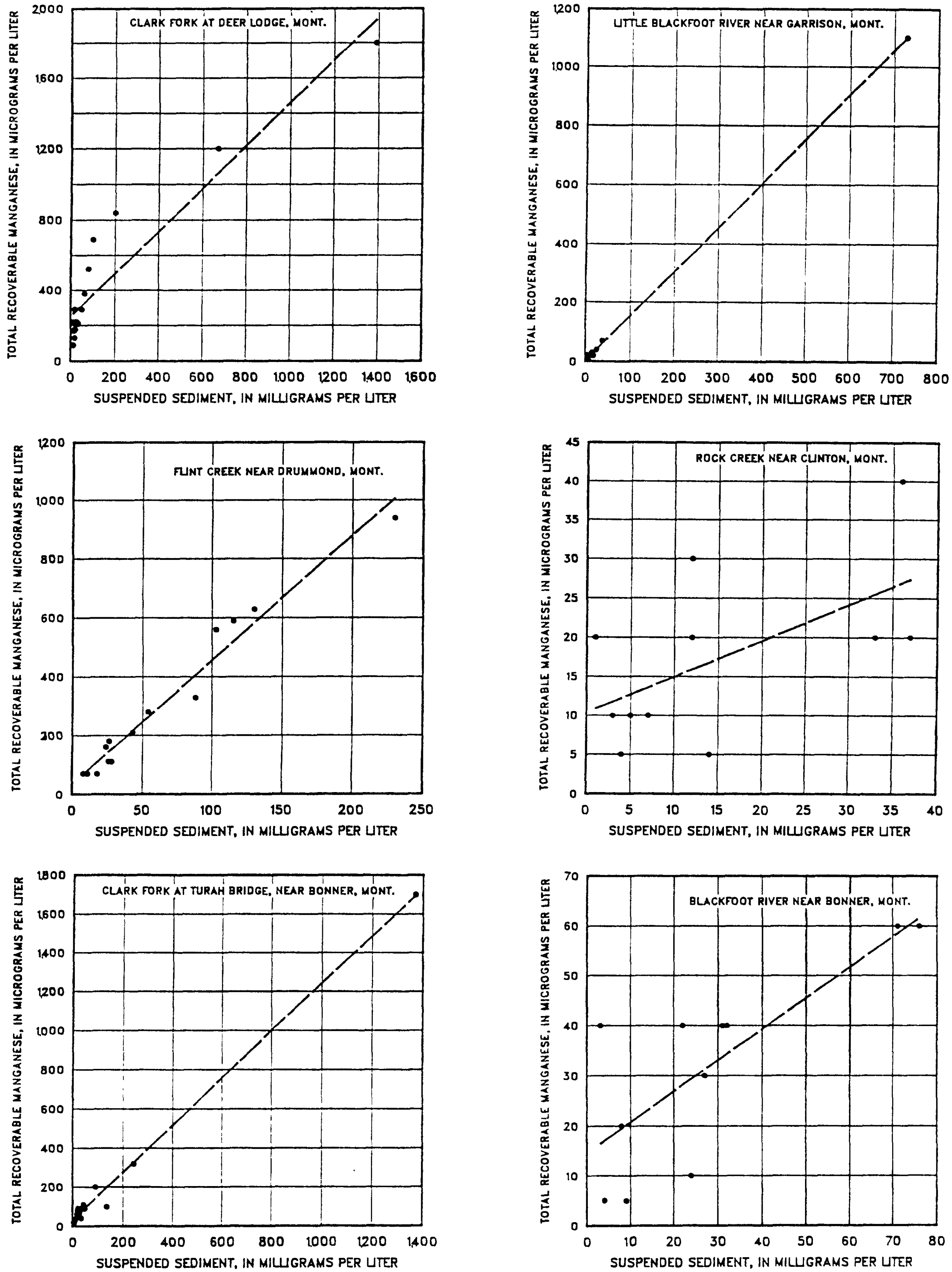

Figure 19.--Relation of concentrations of total recoverable manganese to suspended sediment, March 1985 through September 1987.

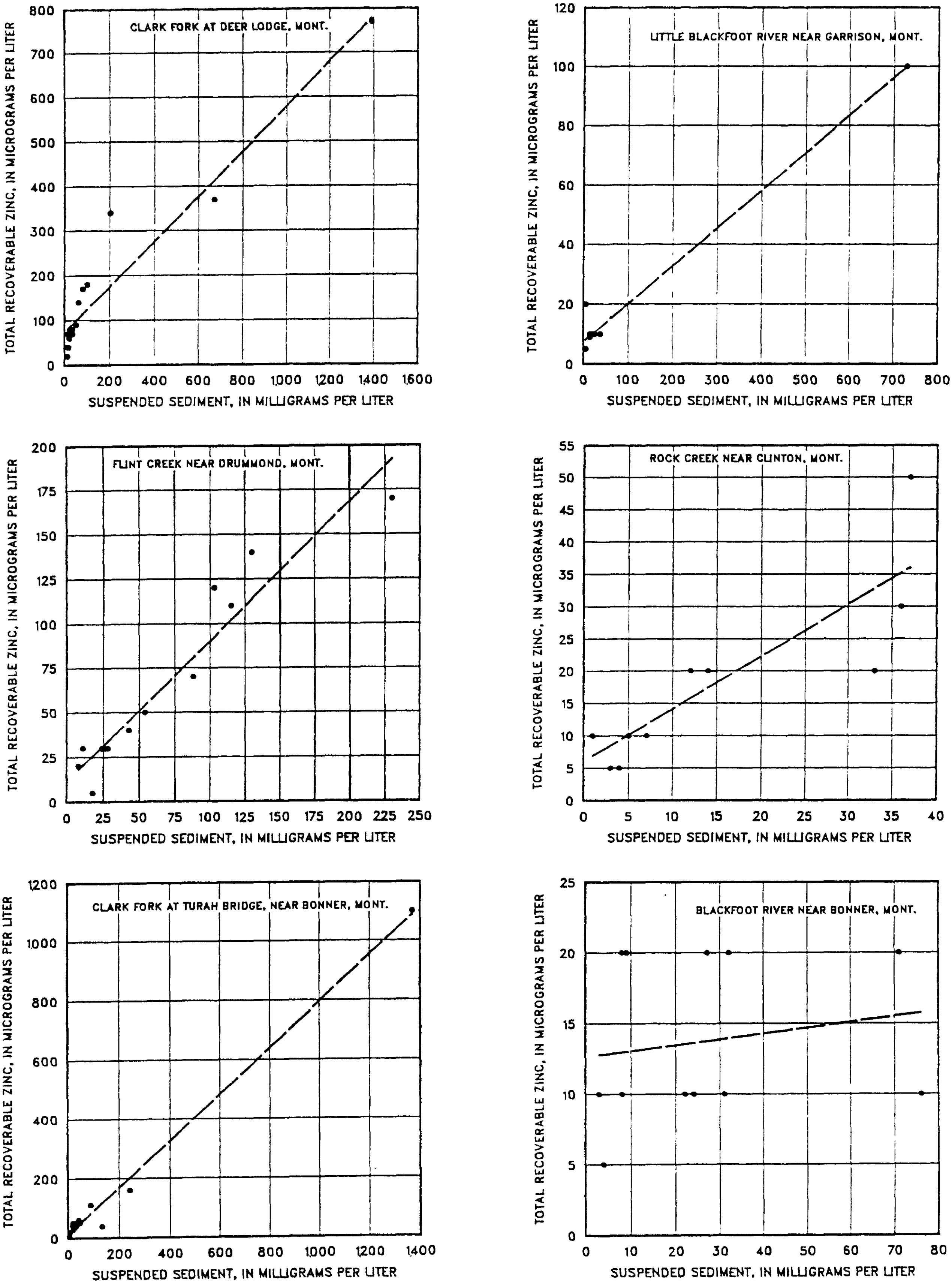

Figure 20.--Relation of concentrations of total recoverable zinc to suspended sediment, March 1985 through September 1987.

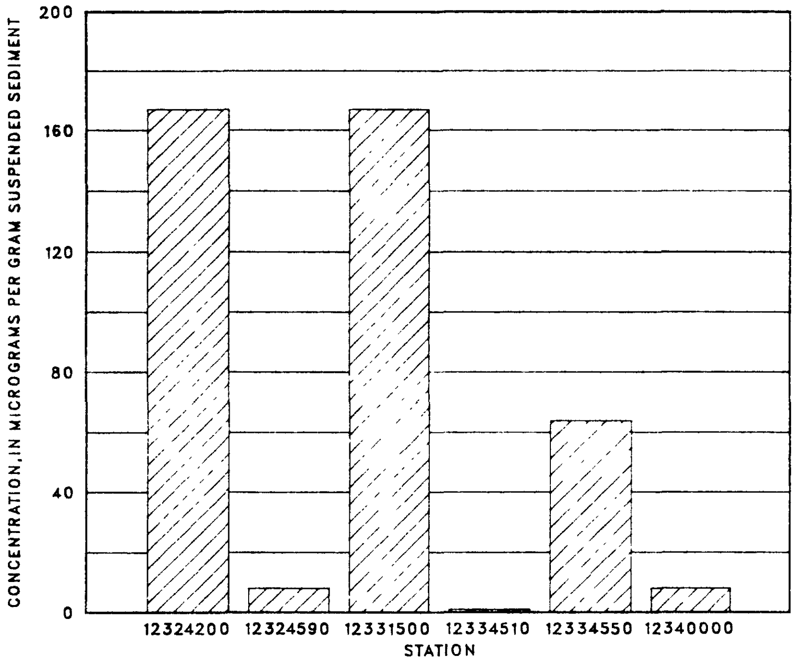

Figure 21.--Median concentrations of arsenic in suspended sediments, March 1985 through September 1987.

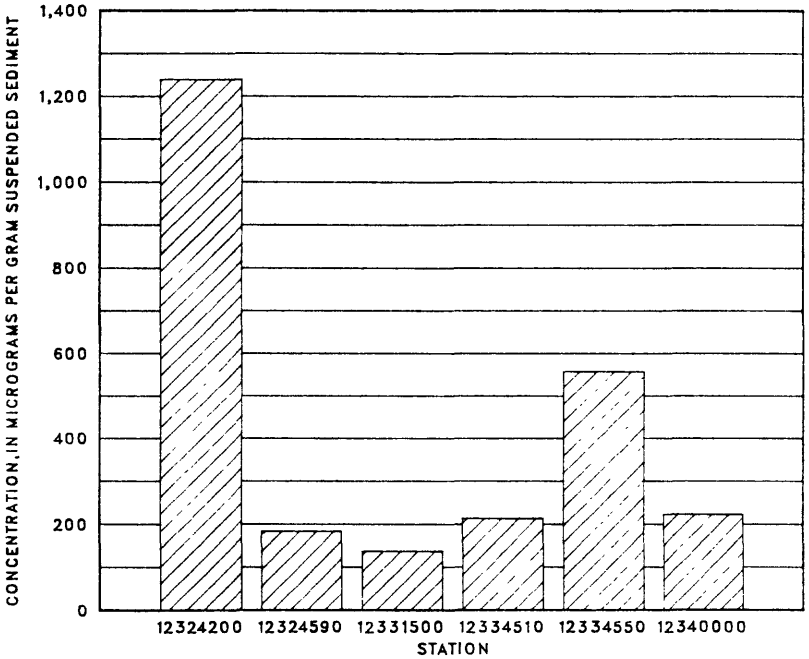

Figure 22.--Median concentrations of copper in suspended sediments, March 1985 through September 1987.

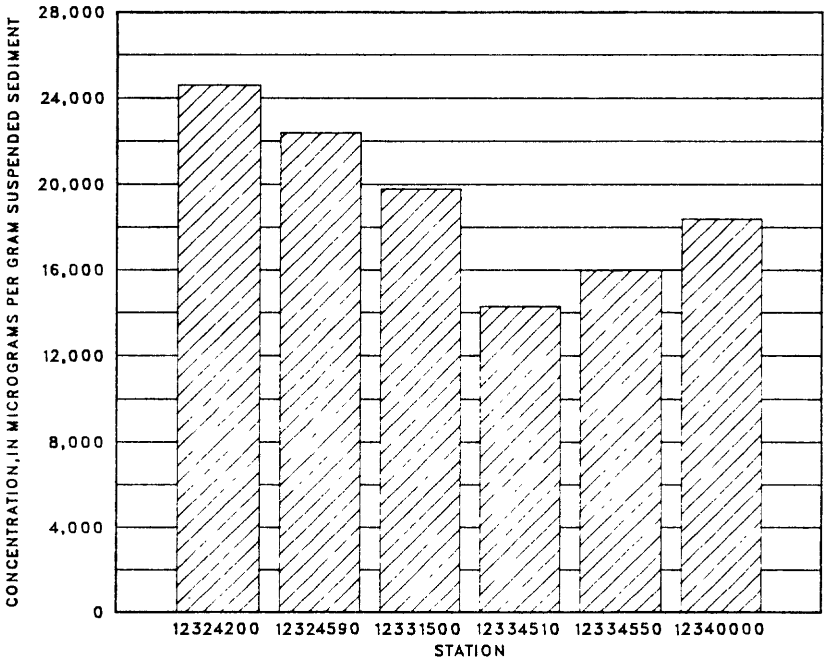

Figure 23.--Median concentrations of iron in suspended sediments, March 1985 through September 1987.

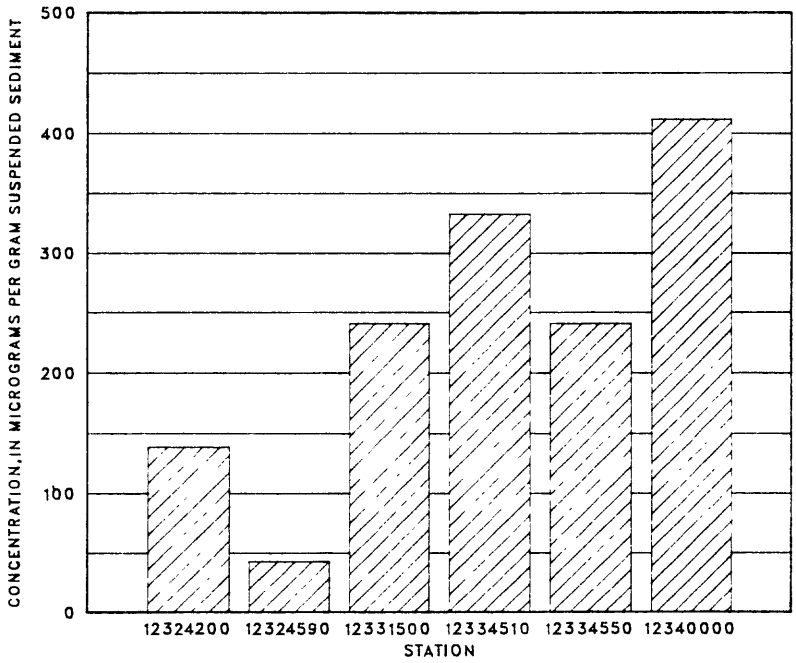

Figure 24.--Median concentrations of lead in suspended sediments, March 1985 through September 1987.

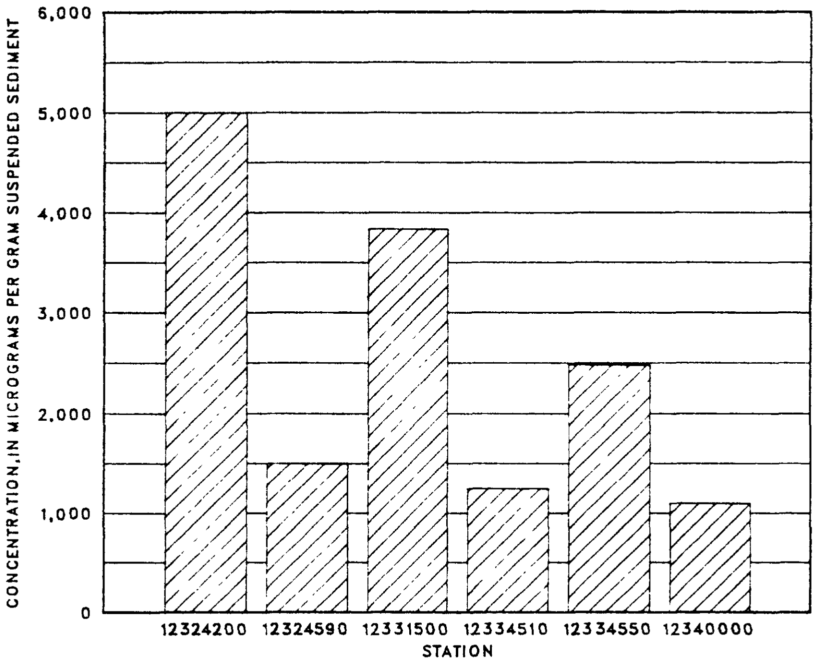

Figure 25.--Median concentrations of manganese in suspended sediments, March 1985 through September 1987.

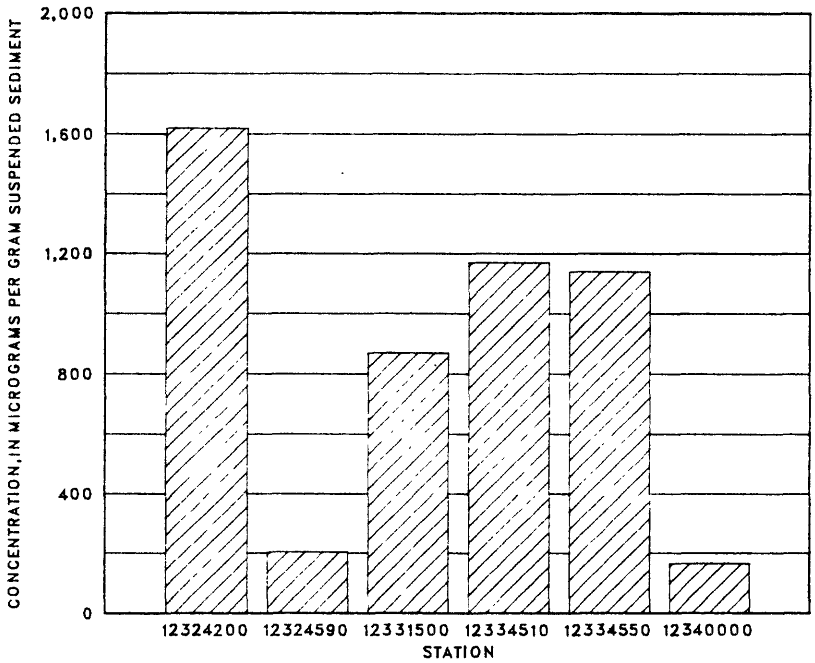

Figure 26.--Median concentrations of zinc in suspended sediments, March 1985 through September 1987.

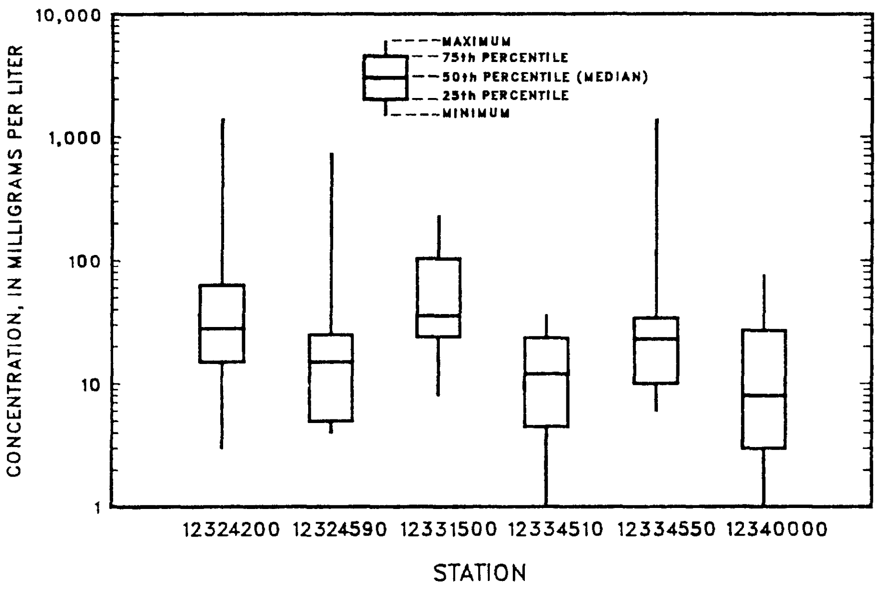

Figure 27.--Statistical distribution of suspended-sediment concentrations from periodic samples, March 1985 through September 1987.

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Table 2.--*Water-quality data, July 1986 through September 1987*

[Analyses by U.S. Geological Survey. Abbreviations: ft^3/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees Celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ton/d, tons per day; mm, millimeter; --, no data; <, less than analytical detection limit]

12324200--CLARK FORK AT DEER LODGE, MONT.

Date	Time	Streamflow, instantaneous (ft^3/s)	Specific conductance, onsite (μS/cm)	pH, onsite (standard units)	Temperature, air (°C)	Temperature, water (°C)	Hardness, dissolved (mg/L as $CaCO_3$)	Hardness, noncarbonate (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)
Apr 1987										
27...	1115	213	--	--	--	13.0	--	--	--	--
29...	1210	196	550	8.0	20.0	16.0	230	94	70	14
May										
11...	1630	112	--	--	--	20.0	--	--	--	--
20...	1100	109	515	--	--	7.0	--	--	--	--
27...	1500	299	470	7.6	13.0	13.0	210	75	61	14
July										
08...	1210	77	571	--	--	17.0	--	--	--	--
10...	1500	109	530	7.5	11.0	12.0	250	77	74	16
19...	0945	309	525	7.7	7.0	11.0	240	96	69	17
Sept										
02...	1215	103	551	7.8	27.0	16.0	260	100	77	17

Date	Bicarbonate, onsite (mg/L)	Carbonate, onsite (mg/L)	Alkalinity, onsite (mg/L as $CaCO_3$)	Arsenic, total (μg/L as As)	Arsenic, dissolved (μg/L as As)	Cadmium, total recoverable (μg/L as Cd)	Cadmium, dissolved (μg/L as Cd)	Copper, total recoverable (μg/L as Cu)	Copper, dissolved (μg/L as Cu)	Iron, total recoverable (μg/L as Fe)
Apr 1987										
27...	--	--	--	--	--	--	--	--	--	--
29...	169	0	138	12	12	<1	<1	34	8	380
May										
11...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
27...	171	0	135	25	14	1	<1	60	15	21,000
July										
08...	--	--	--	--	--	--	--	--	--	--
10...	220	0	174	15	14	<1	<1	29	12	580
19...	184	0	146	44	25	1	<1	130	23	2,500
Sept										
02...	203	0	159	15	14	<1	<1	25	9	160

Date	Iron, dissolved (μg/L as Fe)	Lead, total recoverable (μg/L as Pb)	Lead, dissolved (μg/L as Pb)	Manganese, total recoverable (μg/L as Mn)	Manganese, dissolved (μg/L as Mn)	Zinc, total recoverable (μg/L as Zn)	Zinc, dissolved (μg/L as Zn)	Sediment, suspended (mg/L)	Sediment discharge, suspended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Apr 1987										
27...	--	--	--	--	--	--	--	19	11	80
29...	5	<5	<5	220	18	40	20	13	6.9	70
May										
11...	--	--	--	--	--	--	--	5	1.5	69
20...	--	--	--	--	--	--	--	3	.88	82
27...	19	<5	<5	520	23	170	10	81	65	57
July										
08...	--	--	--	--	--	--	--	4	0.83	54
10...	4	5	<5	130	40	40	14	18	5.3	62
19...	19	11	<5	690	12	180	10	101	84	41
Sept										
02...	4	6	<5	90	26	20	9	12	3.3	73

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12324590--LITTLE BLACKFOOT RIVER NEAR GARRISON, MONT.

Date	Time	Stream-flow, instantaneous (ft^3/s)	Specific conductance, onsite (µS/cm)	pH, onsite (standard units)	Temperature, air (°C)	Temperature, water (°C)	Hardness, dissolved (mg/L as $CaCO_3$)	Hardness, noncarbonate (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)
Apr 1987										
29...	0945	216	190	7.4	18.0	9.5	81	4	23	5.7
May										
27...	1300	170	235	7.6	11.0	10.0	110	11	33	7.5
July										
10...	1245	84	242	7.7	9.0	12.0	130	0	37	8.1
Sept										
02...	1000	37	272	7.5	18.0	13.0	140	14	40	8.9

Date	Bicarbonate, onsite (mg/L)	Carbonate, onsite (mg/L)	Alkalinity, onsite (mg/L as $CaCO_3$)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)
Apr 1987										
29...	95	0	77	6	6	<1	<1	9	1	560
May										
27...	129	0	102	6	5	<1	<1	14	3	190
July										
10...	160	0	127	5	5	<1	<1	3	2	120
Sept										
02...	158	0	123	5	4	<1	<1	7	3	50

Date	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Sediment, suspended (mg/L)	Sediment discharge, suspended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Apr 1987										
29...	19	<5	<5	40	1	10	4	25	15	55
May										
27...	9	<5	<5	<10	4	20	<3	6	2.8	66
July										
10...	<3	18	<5	20	5	<10	5	5	1.1	49
Sept										
02...	8	<5	6	10	2	<10	3	5	.50	55

12331500--FLINT CREEK NEAR DRUMMOND, MONT.

Date	Time	Streamflow, instantaneous (ft^3/s)	Specific conductance, onsite (µS/cm)	pH, onsite (standard units)	Temperature, air (°C)	Temperature, water (°C)	Hardness, dissolved (mg/L as $CaCO_3$)	Hardness, noncarbonate (mg/L as $CaCO_3$)	Calcium dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)
Apr 1987										
29...	1435	102	205	8.1	27.0	15.0	92	0	25	7.2
May										
27...	1715	101	360	7.6	11.0	11.0	180	2	49	14
July										
11...	1645	93	420	7.9	21.0	13.5	210	17	57	17
19...	1245	151	395	7.8	10.5	12.0	200	8	53	16
Sept										
02...	1500	7.6	501	8.0	28.0	17.0	260	27	73	20

Date	Bicarbonate, onsite (mg/L)	Carbonate, onsite (mg/L)	Alkalinity, onsite (mg/L as $CaCO_3$)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)
Apr 1987										
29...	128	0	100	18	9	<1	1	10	1	1,300
May										
27...	228	0	178	31	10	<1	<1	16	3	2,300
July										
11...	246	0	195	16	13	<1	<1	8	5	510
19...	240	0	190	15	11	<1	<1	7	2	480
Sept										
02...	298	0	238	13	12	<1	<1	7	3	190

Date	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Sediment, suspended (mg/L)	Sediment discharge, suspended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Apr 1987										
29...	17	16	<5	280	43	50	11	54	15	65
May										
27...	13	<5	<5	590	68	110	<3	115	31	77
July										
11...	6	14	<5	180	40	30	7	26	6.5	56
19...	9	<5	<5	160	34	30	4	24	9.8	68
Sept										
02...	6	<5	<5	70	45	<10	<3	18	.37	98

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12334510--ROCK CREEK NEAR CLINTON, MONT.

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduct-ance, onsite (μS/cm)	pH, onsite (stand-ard units)	Temper-ature, air (°C)	Temper-ature, water (°C)	Hardness, dis-solved (mg/L as $CaCO_3$)	Hardness, noncar-bonate (mg/L as $CaCO_3$)	Calcium, dis-solved (mg/L as Ca)	Magne-sium, dissolved (mg/L as Mg)
Apr 1987										
30...	0830	1,260	68	6.9	13.5	9.5	33	2	8.6	2.8
May										
28...	1515	1,000	105	7.3	11.0	11.0	49	0	13	4.0
July										
11...	1330	417	138	7.7	20.0	12.5	71	6	19	5.8
Sept										
03...	1345	175	154	7.7	25.0	12.0	78	0	20	6.7

Date	Bicar-bonate, on-site (mg/L)	Car-bonate, onsite (mg/L)	Alka-linity, onsite (mg/L as $CaCO_3$)	Arsenic, total (μg/L as As)	Arsenic, dis-solved (μg/L as As)	Cadmium, total recov-erable (μg/L as Cd)	Cad-mium, dis-solved (μg/L as Cd)	Copper, total recov-erable (μg/L as Cu)	Copper, dis-solved (μg/L as Cu)	Iron, total recov-erable (μg/L as Fe)
Apr 1987										
30...	41	0	31	<1	<1	<1	<1	10	3	470
May										
28...	65	0	49	<1	<1	<1	<1	8	5	230
July										
11...	83	0	65	<1	<1	<1	<1	5	2	50
Sept										
03...	107	0	82	<1	<1	<1	<1	4	1	40

Date	Iron, dis-solved (μg/L as Fe)	Lead, total recov-erable (μg/L as Pb)	Lead, dis-solved (μg/L as Pb)	Manganese, total recov-erable (μg/L as Mn)	Manga-nese, dis-solved (μg/L as Mn)	Zinc, total recov-erable (μg/L as Zn)	Zinc, dis-solved (μg/L as Zn)	Sedi-ment, sus-pended (mg/L)	Sediment dis-charge, sus-pended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Apr 1987										
30...	36	17	<5	20	<1	50	<3	35	119	35
May										
28...	34	<5	<5	<10	<1	20	<3	14	38	59
July										
11...	7	15	<5	<10	<1	<10	<3	4	4.5	56
Sept										
03...	7	<5	<5	10	1	<10	<3	3	1.4	65

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12334550--CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MONT.

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Specific conduct-ance, onsite (µS/cm)	pH, onsite (stand-ard units)	Temper-ature, air (°C)	Temper-ature, water (°C)	Hardness, dis-solved (mg/L as $CaCO_3$)	Hardness, noncar-bonate (mg/L as $CaCO_3$)	Calcium dis-solved (mg/L as Ca)	Magne-sium, dissolved (mg/L as Mg)
Oct 1986										
16...	0950	1,010	--	--	5.0	6.5	--	--	--	--
Jan 1987										
13...	1030	741	--	--	.0	1.0	--	--	--	--
Mar										
11...	1030	874	--	--	4.0	5.0	--	--	--	--
Apr										
27...	1400	1,460	--	--	--	15.0	--	--	--	--
30...	1200	1,920	208	7.4	22.0	13.0	98	31	28	6.8
May										
11...	1120	1,230	--	--	--	14.0	--	--	--	--
28...	1100	1,660	272	7.5	16.0	12.0	130	26	36	8.9
July										
11...	1045	859	335	7.8	17.0	13.0	170	47	47	12
19...	1650	1,160	340	7.8	12.0	15.0	170	39	48	12
28...	1000	809	378	--	26.0	17.0	--	--	--	--
Sept										
03...	1030	502	395	7.7	18.0	15.0	200	62	55	14

Date	Bicar-bonate, on-site (mg/L)	Car-bonate, onsite (mg/L)	Alka-linity, onsite (mg/L as $CaCO_3$)	Arsenic, total (µg/L as As)	Arsenic, dis-solved (µg/L as As)	Cadmium, total recov-erable (µg/L as Cd)	Cad-mium, dis-solved (µg/L as Cd)	Copper, total recov-erable (µg/L as Cu)	Copper, dis-solved (µg/L as Cu)	Iron, total recov-erable (µg/L as Fe)
Oct 1986										
16...	--	--	--	--	--	--	--	--	--	--
Jan 1987										
13...	--	--	--	--	--	--	--	--	--	--
Mar										
11...	--	--	--	--	--	--	--	--	--	--
Apr										
27...	--	--	--	--	--	--	--	--	--	--
30...	87	0	67	7	5	<1	<1	30	5	840
May										
11...	--	--	--	--	--	--	--	--	--	--
28...	133	0	101	7	5	<1	<1	18	16	530
July										
11...	156	0	120	6	6	<1	<1	12	4	150
19...	168	0	130	9	7	<1	<1	24	12	550
28...	--	--	--	--	--	--	--	--	--	--
Sept										
03...	168	0	133	8	7	<1	<1	70	4	70

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12334550--CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MONT.--Continued

Date	Iron, dis-solved (µg/L as Fe)	Lead, total recov-erable (µg/L as Pb)	Lead, dis-solved (µg/L as Pb)	Manganese, total recov-erable (µg/L as Mn)	Manga-nese, dis-solved (µg/L as Mn)	Zinc, total recov-erable (µg/L as Zn)	Zinc, dis-solved (µg/L as Zn)	Sedi-ment, sus-pended (mg/L)	Sediment dis-charge, sus-pended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Oct 1986										
16...	--	--	--	--	--	--	--	6	16	71
Jan 1987										
13...	--	--	--	--	--	--	--	6	12	74
Mar										
11...	--	--	--	--	--	--	--	23	54	77
Apr										
27...	--	--	--	--	--	--	--	34	134	63
30...	23	20	<5	100	10	40	16	135	700	27
May										
11...	--	--	--	--	--	--	--	10	33	49
28...	18	<5	<5	40	5	40	<3	33	148	38
July										
11...	<3	8	<5	30	2	20	8	9	21	51
19...	4	9	<5	80	5	40	<3	28	88	56
28...	--	--	--	--	--	--	--	12	26	69
Sept										
03...	8	10	<5	20	4	<10	7	6	8.1	56

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12340000--BLACKFOOT RIVER NEAR BONNER, MONT.

Date	Time	Streamflow, instantaneous (ft^3/s)	Specific conductance, onsite (µS/cm)	pH, onsite (standard units)	Temperature, air (°C)	Temperature, water (°C)	Hardness, dissolved (mg/L as $CaCO_3$)	Hardness, noncarbonate (mg/L as $CaCO_3$)	Calcium dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)
Oct 1986										
16...	1110	590	--	--	6.5	5.5	--	--	--	--
Jan 1987										
13...	1200	410	--	--	.0	.5	--	--	--	--
Mar										
11...	1200	553	--	--	4.5	2.5	--	--	--	--
Apr										
30...	1600	4,090	131	7.9	21.0	11.5	68	3	18	5.6
May										
28...	0745	1,770	200	7.5	13.0	11.0	100	5	26	9.1
July										
11...	0745	654	225	7.8	9.0	12.0	130	13	31	12
Sept										
03...	0745	414	250	7.8	8.0	12.0	140	0	34	13

Date	Bicarbonate, onsite (mg/L)	Carbonate, onsite (mg/L)	Alkalinity, onsite (mg/L as $CaCO_3$)	Arsenic, total (µg/L as As)	Arsenic, dissolved (µg/L as As)	Cadmium, total recoverable (µg/L as Cd)	Cadmium, dissolved (µg/L as Cd)	Copper, total recoverable (µg/L as Cu)	Copper, dissolved (µg/L as Cu)	Iron, total recoverable (µg/L as Fe)
Oct 1986										
16...	--	--	--	--	--	--	--	--	--	--
Jan 1987										
13...	--	--	--	--	--	--	--	--	--	--
Mar										
11...	--	--	--	--	--	--	--	--	--	--
Apr										
30...	83	0	65	1	1	<1	<1	12	6	840
May										
28...	123	0	97	1	<1	<1	<1	4	2	200
July										
11...	148	0	114	1	1	<1	<1	6	1	80
Sept										
03...	180	0	138	1	<1	<1	<1	8	2	50

Date	Iron, dissolved (µg/L as Fe)	Lead, total recoverable (µg/L as Pb)	Lead, dissolved (µg/L as Pb)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Zinc, total recoverable (µg/L as Zn)	Zinc, dissolved (µg/L as Zn)	Sediment, suspended (mg/L)	Sediment discharge, suspended (ton/d)	Sediment, suspended (percent finer than 0.062 mm)
Oct 1986										
16...	--	--	--	--	--	--	--	2	3.2	80
Jan 1987										
13...	--	--	--	--	--	--	--	1	1.1	70
Mar										
11...	--	--	--	--	--	--	--	7	10	71
Apr										
30...	21	9	<5	60	2	10	3	76	839	48
May										
28...	10	<5	<5	<10	2	20	3	9	43	72
July										
11...	<3	20	<5	<10	<1	<10	10	4	7.1	42
Sept										
03...	4	7	<5	20	2	20	<3	8	8.9	67

Table 2.--*Water-quality data, July 1986 through September 1987*--Continued

12340500--CLARK FORK ABOVE MISSOULA, MONT.

Date	Time	Stream-flow, instan-taneous (ft^3/s)	Temper-ature, water (°C)	Sedi-ment, sus-pended (mg/L)	Sedi-ment dis-charge, sus-pended (ton/d)	Sedi-ment, suspended (percent finer than 0.062 mm)
July 1986						
17...	1540	2,230	15.0	8	48	60
Aug						
15...	1200	1,050	19.0	14	40	52
Sept						
15...	1340	1,790	13.0	24	116	44
Oct						
16...	1215	1,610	7.0	8	35	76
Mar 1987						
11...	1315	1,490	5.0	28	113	60

Table 3.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Deer Lodge, July and August 1986 and April through September 1987*

[ft^3/s, cubic feet per second; mg/L, milligrams per liter; ton/d, tons per day; ---, no data]

Day	JULY 1986 Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	AUGUST 1986 Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
1	235	22	14	46	5	0.62
2	191	18	9.3	42	4	.45
3	138	14	5.2	41	3	.33
4	151	15	6.1	42	3	.34
5	232	24	15	38	4	.41
6	280	24	18	35	5	.47
7	272	22	16	36	6	.58
8	240	20	13	35	6	.57
9	229	19	12	32	5	.43
10	255	20	14	32	5	.43
11	259	19	13	34	7	.64
12	236	16	10	38	7	.72
13	202	12	6.5	39	6	.63
14	182	10	4.9	40	5	.54
15	173	9	4.2	37	5	.50
16	150	8	3.2	38	5	.51
17	178	19	9.1	42	8	.91
18	171	15	6.9	41	9	1.0
19	151	8	3.3	40	8	.86
20	145	7	2.7	40	7	.76
21	121	6	2.0	47	10	1.3
22	106	6	1.7	68	15	2.8
23	100	6	1.6	79	11	2.3
24	76	6	1.2	85	9	2.1
25	63	6	1.0	85	9	2.1
26	60	5	.81	85	10	2.3
27	62	5	.84	98	12	3.2
28	61	5	.82	93	10	2.5
29	56	6	.91	89	9	2.2
30	56	7	1.1	100	10	2.7
31	50	6	.81	130	---	---
TOTAL	4,881	---	199.19	1,727	---	35.20

Table 3.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Deer Lodge, July and August 1986 and April through September 1987*--Continued

Day	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1987								
	APRIL			MAY			JUNE		
1	204	---	---	275	66	49	375	56	57
2	202	---	---	285	55	42	312	25	21
3	210	---	---	243	24	16	264	16	11
4	210	---	---	205	14	7.7	230	26	16
5	217	---	---	187	11	5.6	182	18	8.8
6	236	---	---	162	9	3.9	158	11	4.7
7	234	---	---	149	7	2.8	145	9	3.5
8	235	---	---	147	7	2.8	190	31	16
9	237	---	---	144	6	2.3	212	41	23
10	227	---	---	128	6	2.1	228	29	18
11	220	---	---	116	6	1.9	233	21	13
12	208	---	---	104	7	2.0	209	17	9.6
13	202	---	---	94	5	1.3	190	11	5.6
14	197	---	---	87	4	.94	163	8	3.5
15	194	27	14	78	3	.63	144	6	2.3
16	194	22	12	77	4	.83	131	8	2.8
17	199	25	13	110	4	1.2	134	17	6.2
18	206	29	16	129	4	1.4	155	21	8.8
19	232	27	17	119	3	.96	200	14	7.6
20	246	32	21	108	3	.87	219	15	8.9
21	242	29	19	149	8	3.2	180	10	4.9
22	221	28	17	190	12	6.2	171	16	7.4
23	213	23	13	174	9	4.2	163	14	6.2
24	210	23	13	155	8	3.3	156	6	2.5
25	211	29	17	167	9	4.1	141	4	1.5
26	213	23	13	179	14	6.8	127	7	2.4
27	217	20	12	282	72	61	111	12	3.6
28	202	16	8.7	440	136	162	101	7	1.9
29	198	15	8.0	393	71	75	90	4	.97
30	223	30	18	328	48	43	77	3	.62
31	---	---	---	301	41	33	---	---	---
TOTAL	6,460	---	---	5,705	---	548.03	5,391	---	279.29

Table 3.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Deer Lodge, July and August 1986 and April through September 1987*--Continued

		Suspended sediment			Suspended sediment			Suspended sediment	
Day	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)
					1987				
	JULY			AUGUST			SEPTEMBER		
1	80	3	0.65	92	7	1.7	105	13	3.7
2	71	8	1.5	86	6	1.4	103	11	3.1
3	77	6	1.2	84	6	1.4	93	10	2.5
4	87	4	.94	82	5	1.1	86	11	2.6
5	85	5	1.1	77	6	1.2	84	24	5.4
6	81	6	1.3	71	6	1.2	80	24	5.2
7	78	8	1.7	71	10	1.9	80	13	2.8
8	77	6	1.2	74	20	4.0	81	9	2.0
9	72	7	1.4	72	10	1.9	72	10	1.9
10	108	14	4.1	67	10	1.8	72	14	2.7
11	151	30	12	62	6	1.0	67	17	3.1
12	162	24	10	60	6	.97	68	20	3.7
13	156	17	7.2	62	7	1.2	70	18	3.4
14	139	13	4.9	82	7	1.5	73	15	3.0
15	113	10	3.1	93	7	1.8	77	11	2.3
16	101	8	2.2	104	7	2.0	77	9	1.9
17	96	17	4.4	99	8	2.1	84	10	2.3
18	232	70	49	96	10	2.6	104	22	6.2
19	330	94	84	92	10	2.5	109	15	4.4
20	311	60	50	86	14	3.3	110	14	4.2
21	281	43	33	81	12	2.6	110	14	4.2
22	253	31	21	81	6	1.3	111	15	4.5
23	238	36	23	80	8	1.7	123	16	5.3
24	227	32	20	86	12	2.8	119	16	5.1
25	200	25	13	107	11	3.2	112	15	4.5
26	167	20	9.0	119	12	3.9	107	13	3.8
27	147	15	6.0	122	14	4.6	122	11	3.6
28	124	10	3.3	121	13	4.2	125	13	4.4
29	116	12	3.8	117	11	3.5	131	16	5.7
30	114	15	4.6	110	9	2.7	134	14	5.1
31	100	8	2.2	108	11	3.2	---	---	---
TOTAL	4,574	---	380.79	2,744	---	70.27	2,889	---	112.6

Table 4.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987*

[ft^3/s, cubic feet per second; mg/L, milligrams per liter; ton/d, tons per day; ---, no data]

		Suspended sediment			Suspended sediment			Suspended sediment	
Day	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)
				1986					
	JULY			AUGUST			SEPTEMBER		
1	1,260	10	34	699	5	9.4	788	14	30
2	1,210	10	33	671	5	9.1	848	17	39
3	1,160	10	31	636	5	8.6	838	14	32
4	1,140	10	31	620	5	8.4	811	10	22
5	1,350	15	55	600	6	9.7	797	10	22
6	1,510	15	61	580	6	9.4	788	9	19
7	1,460	12	47	561	6	9.1	795	8	17
8	1,400	12	45	522	6	8.5	861	13	30
9	1,380	11	41	492	5	6.6	1,060	30	86
10	1,380	11	41	478	5	6.5	1,150	34	106
11	1,390	10	38	468	5	6.3	1,060	20	57
12	1,420	9	35	498	6	8.1	1,010	14	38
13	1,340	8	29	550	5	7.4	1,020	13	36
14	1,250	8	27	555	5	7.5	1,080	16	47
15	1,200	8	26	531	5	7.2	1,150	25	78
16	1,150	8	25	519	4	5.6	1,200	28	91
17	1,220	8	26	496	4	5.4	1,210	25	82
18	1,240	5	17	476	4	5.1	1,320	28	100
19	1,160	4	13	464	4	5.0	1,360	26	95
20	1,070	4	12	440	4	4.8	1,330	19	68
21	1,030	5	14	440	4	4.8	1,320	18	64
22	980	6	16	526	4	5.7	1,300	16	56
23	933	6	15	583	5	7.9	1,250	14	47
24	878	5	12	578	5	7.8	1,210	12	39
25	831	5	11	577	5	7.8	1,180	11	35
26	817	4	8.8	584	5	7.9	1,190	10	32
27	807	4	8.7	583	6	9.4	1,150	8	25
28	776	4	8.4	588	6	9.5	1,140	6	18
29	754	5	10	608	6	9.8	1,120	7	21
30	735	4	7.9	656	9	16	1,110	8	24
31	721	5	9.7	724	12	23	---	---	---
TOTAL	34,952	---	788.5	17,303	---	257.3	32,446	---	1,456

Table 4.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987*--Continued

Day	Mean stream-flow (ft^3/s)	Suspended sediment: Mean concen-tration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean stream-flow (ft^3/s)	Suspended sediment: Mean concen-tration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean stream-flow (ft^3/s)	Suspended sediment: Mean concen-tration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1986								
	OCTOBER			NOVEMBER			DECEMBER		
1	1,120	9	27	969	7	18	956	6	15
2	1,120	8	24	957	5	13	981	7	19
3	1,130	8	24	943	3	7.6	966	6	16
4	1,120	8	24	935	4	10	893	6	14
5	1,110	9	27	934	5	13	900	6	15
6	1,090	9	26	964	4	10	957	6	16
7	1,080	10	29	979	5	13	935	5	13
8	1,070	10	29	972	4	10	926	6	15
9	1,040	8	22	936	5	13	859	7	16
10	1,040	8	22	903	6	15	834	7	16
11	1,030	7	19	680	3	5.5	800	10	22
12	1,030	6	17	769	2	4.2	823	7	16
13	1,030	5	14	820	6	13	871	8	19
14	1,030	4	11	842	13	30	900	9	22
15	1,030	4	11	1,020	13	36	902	9	22
16	1,020	5	14	1,040	8	22	832	15	34
17	1,010	4	11	1,040	7	20	828	8	18
18	1,010	4	11	1,030	8	22	834	9	20
19	997	5	13	1,090	12	35	780	7	15
20	993	5	13	1,140	13	40	780	20	42
21	983	6	16	1,220	22	72	740	6	12
22	984	6	16	1,310	51	180	760	7	14
23	984	6	16	1,180	20	64	800	15	32
24	977	6	16	1,130	13	40	830	17	38
25	976	7	18	1,150	14	43	800	10	22
26	973	7	18	1,090	9	26	830	9	20
27	973	8	21	1,070	9	26	840	9	20
28	980	8	21	1,070	9	26	832	6	13
29	978	9	24	1,050	8	23	762	9	19
30	978	9	24	1,010	6	16	752	13	26
31	977	8	21	---	---	---	830	20	45
TOTAL	31,863	---	599	30,243	---	866.3	26,333	---	646

Table 4.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987*--Continued

Day	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
				1987					
	JANUARY			FEBRUARY			MARCH		
1	768	6	12	756	15	31	770	18	37
2	757	7	14	792	21	45	773	19	40
3	830	13	29	797	16	34	808	25	55
4	859	13	30	762	13	27	930	42	105
5	810	7	15	751	13	26	1,200	81	262
6	740	9	18	744	15	30	1,210	91	297
7	670	5	9.0	734	16	32	1,220	70	231
8	660	5	8.9	744	11	22	1,170	50	158
9	640	10	17	749	11	22	1,040	31	87
10	590	16	25	743	11	22	959	24	62
11	570	11	17	757	12	25	902	22	54
12	580	8	13	767	16	33	867	18	42
13	660	9	16	790	18	38	883	19	45
14	720	11	21	812	19	42	917	21	52
15	660	5	8.9	858	29	67	903	18	44
16	600	6	9.7	835	28	63	882	18	43
17	560	5	7.6	813	21	46	870	19	45
18	580	8	13	796	19	41	884	17	41
19	600	7	11	793	22	47	896	15	36
20	630	5	8.5	761	20	41	862	14	33
21	650	7	12	742	20	40	839	13	29
22	690	5	9.3	765	22	45	824	11	24
23	710	7	13	765	20	41	801	11	24
24	720	13	25	721	16	31	796	11	24
25	768	14	29	658	13	23	787	10	21
26	782	15	32	626	11	19	790	11	23
27	771	16	33	653	16	28	800	10	22
28	759	13	27	706	17	32	784	8	17
29	761	10	21	---	---	---	725	6	12
30	734	7	14	---	---	---	723	7	14
31	729	7	14	---	---	---	794	10	21
TOTAL	21,558	---	532.9	21,190	---	993	27,609	---	2,000

Table 4.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987*--Continued

Day	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
				1987					
	APRIL			MAY			JUNE		
1	842	14	32	2,250	113	686	2,020	30	164
2	855	16	37	2,180	67	394	1,850	28	140
3	846	13	30	1,980	45	241	1,720	17	79
4	858	14	32	1,780	34	163	1,520	17	70
5	892	16	39	1,630	26	114	1,370	13	48
6	938	16	41	1,560	19	80	1,270	11	38
7	988	16	43	1,540	15	62	1,200	18	58
8	1,010	16	44	1,530	13	54	1,290	18	63
9	1,020	16	44	1,500	11	45	1,340	17	62
10	1,000	16	43	1,400	10	38	1,390	16	60
11	981	15	40	1,300	11	39	1,320	13	46
12	970	14	37	1,200	12	39	1,190	13	42
13	935	14	35	1,160	12	38	1,090	12	35
14	908	13	32	1,140	11	34	1,010	12	33
15	905	13	32	1,060	9	26	945	11	28
16	936	16	40	1,030	9	25	929	8	20
17	985	27	72	1,220	10	33	938	8	20
18	1,070	24	69	1,130	10	31	1,030	10	28
19	1,100	19	56	1,060	8	23	1,190	7	22
20	1,080	17	50	1,030	7	19	1,240	12	40
21	1,060	29	83	1,030	7	19	1,160	14	44
22	1,080	30	87	1,050	7	20	1,080	15	44
23	1,130	26	79	1,080	7	20	1,020	15	41
24	1,200	27	87	1,050	8	23	977	8	21
25	1,290	33	115	1,100	17	50	922	7	17
26	1,380	34	127	1,270	18	62	873	8	19
27	1,460	39	154	1,490	32	129	833	6	13
28	1,570	54	229	1,720	32	149	787	5	11
29	1,740	74	348	2,030	36	197	749	5	10
30	1,990	115	618	1,810	34	166	734	5	9.9
31	---	---	---	1,730	31	145	---	---	---
TOTAL	33,019	---	2,775	44,040	---	3,164	34,987	---	1,325.9

Table 4.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork at Turah Bridge, near Bonner, July 1986 through September 1987*--Continued

1987

Day	JULY: Mean streamflow (ft^3/s)	JULY: Suspended sediment, Mean concentration (mg/L)	JULY: Suspended sediment, Sediment discharge (ton/d)	AUGUST: Mean streamflow (ft^3/s)	AUGUST: Suspended sediment, Mean concentration (mg/L)	AUGUST: Suspended sediment, Sediment discharge (ton/d)	SEPTEMBER: Mean streamflow (ft^3/s)	SEPTEMBER: Suspended sediment, Mean concentration (mg/L)	SEPTEMBER: Suspended sediment, Sediment discharge (ton/d)
1	709	5	9.6	670	5	9.0	511	8	11
2	681	4	7.4	633	6	10	498	8	11
3	710	4	7.7	612	6	9.9	491	5	6.6
4	706	5	9.5	597	8	13	479	3	3.9
5	690	5	9.3	547	9	13	481	2	2.6
6	687	4	7.4	506	6	8.2	473	2	2.6
7	678	2	3.7	475	7	9.0	462	2	2.5
8	668	3	5.4	451	8	9.7	441	6	7.1
9	657	4	7.1	437	5	5.9	437	4	4.7
10	687	6	11	411	3	3.3	429	2	2.3
11	816	8	18	392	3	3.2	425	3	3.4
12	895	8	19	378	4	4.1	416	1	1.1
13	870	8	19	373	4	4.0	404	2	2.2
14	836	11	25	409	4	4.4	400	2	2.2
15	783	9	19	441	3	3.6	398	2	2.1
16	727	8	16	463	4	5.0	399	2	2.2
17	718	8	16	480	5	6.5	396	2	2.1
18	826	9	20	477	3	3.9	417	2	2.3
19	1,080	23	67	469	3	3.8	449	4	4.8
20	1,170	30	95	461	2	2.5	471	5	6.4
21	1,140	25	77	448	3	3.6	481	7	9.1
22	1,120	17	51	427	4	4.6	479	6	7.8
23	1,130	26	79	422	11	13	474	6	7.7
24	1,120	22	67	451	4	4.9	480	7	9.1
25	1,010	17	46	521	5	7.0	489	7	9.2
26	928	14	35	577	6	9.3	500	8	11
27	868	14	33	564	4	6.1	506	7	9.6
28	811	11	24	541	5	7.3	518	7	9.8
29	775	9	19	530	7	10	531	8	11
30	747	10	20	519	5	7.0	536	9	13
31	713	7	13	519	7	9.8	---	---	---
TOTAL	25,956	---	856.1	15,201	---	214.6	13,871	---	180.4

Table 5.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Blackfoot River near Bonner, July 1986 to April 1987*

[ft^3/s, cubic feet per second; mg/L, milligrams per liter; ton/d, tons per day; ---, no data]

		Suspended sediment			Suspended sediment			Suspended sediment	
Day	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Mean concentration (mg/L)	Sediment discharge (ton/d)
					1986				
		JULY			AUGUST			SEPTEMBER	
1	1,300	---	---	638	2	3.4	551	4	6.0
2	1,250	---	---	627	2	3.4	538	2	2.9
3	1,210	---	---	620	2	3.3	529	3	4.3
4	1,180	---	---	620	3	5.0	520	3	4.2
5	1,250	---	---	605	3	4.9	509	2	2.7
6	1,330	---	---	598	2	3.2	504	2	2.7
7	1,270	---	---	580	2	3.1	505	2	2.7
8	1,180	---	---	569	2	3.1	517	2	2.8
9	1,140	---	---	555	2	3.0	585	3	4.7
10	1,120	---	---	554	2	3.0	608	4	6.6
11	1,110	---	---	568	2	3.1	595	3	4.8
12	1,120	---	---	572	3	4.6	566	2	3.1
13	1,080	---	---	579	2	3.1	554	1	1.5
14	1,040	5	14	585	1	1.6	560	1	1.5
15	994	5	13	576	2	3.1	569	1	1.5
16	964	5	13	563	2	3.0	577	2	3.1
17	969	5	13	557	2	3.0	583	2	3.1
18	962	4	10	560	2	3.0	615	2	3.3
19	944	3	7.6	553	2	3.0	598	2	3.2
20	918	3	7.4	552	3	4.5	583	2	3.1
21	892	3	7.2	554	2	3.0	592	2	3.2
22	870	3	7.0	571	2	3.1	592	1	1.6
23	844	4	9.1	573	3	4.6	579	1	1.6
24	820	5	11	558	2	3.0	574	1	1.5
25	796	6	13	547	2	3.0	572	2	3.1
26	766	5	10	538	2	2.9	574	1	1.5
27	742	4	8.0	530	2	2.9	571	1	1.5
28	719	3	5.8	516	2	2.8	572	2	3.1
29	690	4	7.5	513	2	2.8	573	3	4.6
30	655	3	5.3	529	4	5.7	579	2	3.1
31	645	2	3.5	545	5	7.4	---	---	---
TOTAL	30,770	---	---	17,605	---	108.6	16,944	---	92.6

Table 5.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Blackfoot River near Bonner, July 1986 to April 1987*--Continued

Day	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1986								
	OCTOBER			NOVEMBER			DECEMBER		
1	579	2	3.1	546	2	2.9	559	2	3.0
2	576	2	3.1	541	2	2.9	541	2	2.9
3	568	1	1.5	539	2	2.9	523	2	2.8
4	565	1	1.5	541	1	1.5	500	2	2.7
5	568	1	1.5	545	2	2.9	506	2	2.7
6	571	1	1.5	587	2	3.2	523	2	2.8
7	565	1	1.5	579	1	1.6	523	1	1.4
8	560	1	1.5	566	1	1.5	515	1	1.4
9	558	1	1.5	505	1	1.4	500	2	2.7
10	568	1	1.5	358	3	2.9	480	2	2.6
11	561	1	1.5	424	2	2.3	480	2	2.6
12	555	1	1.5	483	4	5.2	480	2	2.6
13	553	1	1.5	498	4	5.4	500	2	2.7
14	564	1	1.5	591	2	3.2	500	3	4.1
15	578	1	1.6	611	1	1.6	500	3	4.1
16	592	2	3.2	605	1	1.6	490	3	4.0
17	610	1	1.6	587	1	1.6	480	3	3.9
18	615	1	1.7	591	2	3.2	470	3	3.8
19	613	1	1.7	596	2	3.2	460	4	5.0
20	620	2	3.3	565	2	3.1	450	5	6.1
21	617	2	3.3	565	2	3.1	450	3	3.6
22	610	1	1.6	577	2	3.1	455	4	4.9
23	600	3	4.9	571	2	3.1	465	5	6.3
24	584	3	4.7	583	3	4.7	480	3	3.9
25	576	3	4.7	596	3	4.8	480	2	2.6
26	569	2	3.1	583	2	3.1	480	3	3.9
27	565	1	1.5	589	2	3.2	480	2	2.6
28	560	1	1.5	608	3	4.9	470	1	1.3
29	553	1	1.5	596	2	3.2	460	3	3.7
30	555	1	1.5	571	2	3.1	460	3	3.7
31	551	2	3.0	---	---	---	460	2	2.5
TOTAL	17,879	---	68.6	16,697	---	90.4	15,120	---	102.9

Table 5.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Blackfoot River near Bonner, July 1986 to April 1987*--Continued

		Suspended sediment			Suspended sediment			Suspended sediment	
Day	Mean stream-flow (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (ton/d)	Mean stream-flow (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (ton/d)	Mean stream-flow (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (ton/d)
					1987				
		JANUARY			FEBRUARY			MARCH	
1	450	1	1.2	440	4	4.8	380	3	3.1
2	450	2	2.4	450	5	6.1	390	5	5.3
3	480	2	2.6	450	3	3.6	400	7	7.6
4	500	3	4.1	440	4	4.8	423	4	4.6
5	500	4	5.4	430	5	5.8	461	4	5.0
6	480	3	3.9	425	6	6.9	560	7	11
7	450	3	3.6	425	5	5.7	662	14	25
8	430	4	4.6	425	2	2.3	690	16	30
9	400	2	2.2	425	1	1.1	586	12	19
10	360	2	1.9	425	2	2.3	532	7	10
11	360	2	1.9	430	1	1.2	556	7	11
12	380	1	1.0	430	2	2.3	585	8	13
13	410	1	1.1	450	5	6.1	632	10	17
14	400	1	1.1	470	3	3.8	706	10	19
15	370	1	1.0	490	5	6.6	704	11	21
16	355	2	1.9	480	5	6.5	694	9	17
17	350	2	1.9	470	5	6.3	673	8	15
18	360	2	1.9	460	7	8.7	675	8	15
19	370	2	2.0	450	6	7.3	668	6	11
20	390	2	2.1	440	5	5.9	647	5	8.7
21	400	3	3.2	430	6	7.0	622	5	8.4
22	410	3	3.3	420	5	5.7	603	4	6.5
23	425	3	3.4	420	4	4.5	586	3	4.7
24	440	3	3.6	400	2	2.2	570	2	3.1
25	440	2	2.4	370	2	2.0	570	3	4.6
26	440	3	3.6	350	2	1.9	583	5	7.9
27	440	4	4.8	350	3	2.8	581	3	4.7
28	440	4	4.8	370	4	4.0	567	3	4.6
29	440	3	3.6	---	---	---	525	3	4.3
30	430	2	2.3	---	---	---	540	4	5.8
31	430	2	2.3	---	---	---	553	5	7.5
TOTAL	12,980	---	85.1	12,015	---	128.2	17,924	---	330.4

Table 5.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Blackfoot River near Bonner, July 1986 to April 1987*--Continued

		Suspended sediment	
Day	Mean stream-flow (ft^3/s)	Mean concen-tration (mg/L)	Sediment discharge (ton/d)
		1987	
		APRIL	
1	579	4	6.3
2	619	4	6.7
3	634	6	10
4	676	8	15
5	749	---	---
6	852	---	---
7	955	---	---
8	1,050	---	---
9	1,090	---	---
10	1,110	---	---
11	1,150	---	---
12	1,140	---	---
13	1,120	---	---
14	1,090	---	---
15	1,090	---	---
16	1,130	---	---
17	1,240	---	---
18	1,360	---	---
19	1,410	---	---
20	1,390	---	---
21	1,340	---	---
22	1,330	---	---
23	1,420	---	---
24	1,670	---	---
25	1,970	---	---
26	2,240	---	---
27	2,460	---	---
28	2,720	---	---
29	3,220	---	---
30	3,950	---	---
31	---	---	---
TOTAL	42,754	---	---

Table 6.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork above Missoula, July 1986 to April 1987*

[ft^3/s, cubic feet per second; mg/L, milligrams per liter; ton/d, tons per day; ---, no data]

Day	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1986								
	JULY			AUGUST			SEPTEMBER		
1	2,600	---	---	1,400	4	15	1,360	16	59
2	2,510	---	---	1,310	6	21	1,370	19	70
3	2,410	---	---	1,300	5	18	1,370	14	52
4	2,390	---	---	1,250	5	17	1,320	11	39
5	2,610	---	---	1,250	4	13	1,310	10	35
6	2,890	---	---	1,170	5	16	1,280	8	28
7	2,790	---	---	1,170	5	16	1,260	7	24
8	2,630	---	---	1,140	6	18	1,340	11	40
9	2,560	---	---	1,050	6	17	1,570	28	119
10	2,560	---	---	1,050	6	17	1,760	39	185
11	2,560	---	---	1,050	6	17	1,690	23	105
12	2,590	---	---	1,070	6	17	1,580	18	77
13	2,500	---	---	1,140	6	18	1,570	15	64
14	2,320	13	81	1,130	6	18	1,640	15	66
15	2,260	10	61	1,090	9	26	1,720	20	93
16	2,160	10	58	1,080	5	15	1,790	23	111
17	2,240	8	48	1,060	5	14	1,790	23	111
18	2,250	8	49	1,020	6	17	1,920	31	161
19	2,180	7	41	999	5	13	1,980	30	160
20	2,040	6	33	979	4	11	1,930	26	135
21	1,970	7	37	979	5	13	1,910	19	98
22	1,860	6	30	1,050	5	14	1,920	18	93
23	1,840	5	25	1,130	7	21	1,840	17	84
24	1,740	6	28	1,090	6	18	1,780	14	67
25	1,650	6	27	1,090	9	26	1,770	11	53
26	1,660	7	31	1,090	14	41	1,780	13	62
27	1,580	7	30	1,090	19	56	1,750	13	61
28	1,580	7	30	1,080	22	64	1,740	11	52
29	1,450	7	27	1,100	12	36	1,690	10	46
30	1,480	6	24	1,140	8	25	1,720	11	51
31	1,390	5	19	1,280	14	48	---	---	---
TOTAL	67,250	---	---	34,827	---	696	49,450	---	2,401

Table 6.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork above Missoula, July 1986 to April 1987*--Continued

Day	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1986								
	OCTOBER			NOVEMBER			DECEMBER		
1	1,720	12	56	1,520	6	25	1,510	7	29
2	1,730	12	56	1,500	7	28	1,550	8	33
3	1,730	11	51	1,470	6	24	1,500	8	32
4	1,700	13	60	1,460	5	20	1,410	7	27
5	1,690	11	50	1,460	4	16	1,400	7	26
6	1,670	15	68	1,530	5	21	1,470	8	32
7	1,650	12	53	1,540	5	21	1,460	9	35
8	1,630	11	48	1,540	4	17	1,470	9	36
9	1,610	10	43	1,470	4	16	1,270	9	31
10	1,640	10	44	1,160	60	188	1,170	21	66
11	1,590	9	39	987	48	128	1,250	30	101
12	1,600	7	30	1,290	78	272	1,250	37	125
13	1,600	6	26	1,330	100	359	1,350	54	197
14	1,610	6	26	1,610	110	478	1,400	130	491
15	1,610	7	30	1,790	270	1,300	1,350	166	605
16	1,610	7	30	1,690	270	1,230	1,300	81	284
17	1,610	6	26	1,660	210	941	1,300	34	119
18	1,620	7	31	1,530	70	289	1,250	23	78
19	1,620	7	31	1,670	58	262	1,250	35	118
20	1,610	7	30	1,670	46	207	1,250	61	206
21	1,610	7	30	1,770	40	191	1,200	70	227
22	1,590	7	30	1,890	60	306	1,200	82	266
23	1,580	7	30	1,740	40	188	1,250	97	327
24	1,570	8	34	1,710	21	97	1,300	123	432
25	1,550	8	33	1,740	21	99	1,300	156	548
26	1,540	7	29	1,680	14	64	1,300	83	291
27	1,530	8	33	1,670	13	59	1,300	58	204
28	1,540	7	29	1,660	14	63	1,300	18	63
29	1,530	7	29	1,660	16	72	1,200	12	39
30	1,540	7	29	1,590	12	52	1,200	21	68
31	1,520	7	29	---	---	---	1,250	30	101
TOTAL	49,950	---	1,163	46,987	---	7,033	40,960	---	5,237

Table 6.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork above Missoula, July 1986 to April 1987*--Continued

Day	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)	Mean streamflow (ft³/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
	1987								
	JANUARY			FEBRUARY			MARCH		
1	1,200	10	32	1,200	370	1,200	1,160	19	60
2	1,200	26	84	1,250	168	567	1,210	17	56
3	1,300	63	221	1,250	117	395	1,240	21	70
4	1,350	92	335	1,200	82	266	1,330	33	119
5	1,300	136	477	1,150	42	130	1,670	65	293
6	1,200	108	350	1,150	17	53	1,760	87	413
7	1,100	99	294	1,150	16	50	1,890	79	403
8	1,100	71	211	1,130	18	55	1,920	75	389
9	1,050	20	57	1,160	21	66	1,660	49	220
10	950	13	33	1,130	16	49	1,510	26	106
11	950	19	49	1,140	18	55	1,480	27	108
12	950	25	64	1,180	21	67	1,450	25	98
13	1,050	48	136	1,200	21	68	1,550	42	176
14	1,100	31	92	1,230	22	73	1,610	30	130
15	1,050	12	34	1,270	28	96	1,660	21	94
16	950	25	64	1,280	28	97	1,590	22	94
17	900	15	36	1,240	23	77	1,550	19	80
18	950	58	149	1,230	20	66	1,590	22	94
19	950	84	215	1,220	20	66	1,610	18	78
20	1,000	12	32	1,180	19	61	1,540	13	54
21	1,000	50	135	1,170	15	47	1,490	11	44
22	1,000	26	70	1,190	21	67	1,450	10	39
23	1,050	13	37	1,170	20	63	1,420	10	38
24	1,100	28	83	1,110	15	45	1,400	10	38
25	1,150	64	199	1,100	19	56	1,380	9	34
26	1,200	89	288	1,010	15	41	1,400	11	42
27	1,200	125	405	968	12	31	1,400	9	34
28	1,200	127	411	1,120	13	39	1,330	5	18
29	1,200	180	583	---	---	---	1,240	4	13
30	1,150	139	432	---	---	---	1,210	5	16
31	1,150	160	497	---	---	---	1,310	13	46
TOTAL	34,000	---	6,105	32,778	---	3,946	46,010	---	3,497

Table 6.--*Daily mean streamflow, suspended-sediment concentration, and suspended-sediment discharge for the Clark Fork above Missoula, July 1986 to April 1987*--Continued

Day	Mean streamflow (ft^3/s)	Suspended sediment: Mean concentration (mg/L)	Suspended sediment: Sediment discharge (ton/d)
		1987 APRIL	
1	1,380	18	67
2	1,420	19	73
3	1,360	12	44
4	1,360	11	40
5	1,510	---	---
6	1,780	---	---
7	1,960	---	---
8	2,060	---	---
9	2,160	---	---
10	2,110	---	---
11	2,120	---	---
12	2,110	---	---
13	2,070	---	---
14	2,040	---	---
15	1,980	---	---
16	1,990	---	---
17	2,130	---	---
18	2,360	---	---
19	2,510	---	---
20	2,420	---	---
21	2,380	---	---
22	2,370	---	---
23	2,450	---	---
24	2,810	---	---
25	3,190	---	---
26	3,530	---	---
27	3,830	---	---
28	4,150	---	---
29	4,820	---	---
30	5,700	---	---
31	---	---	---
TOTAL	74,060	---	---

Table 7.--*Statistical summary of water-quality data, March 1985 through September 1987*

[ft^3/s, cubic feet per second; µS/cm, microsiemens per centimeter at 25 °C; °C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; mm, millimeter; <, less than analytical detection limit]

Parameter and unit of measurement	Number of samples	Minimum	Maximum	Mean	Median
12324200 Clark Fork at Deer Lodge, Mont.					
Streamflow, instantaneous (ft^3/s)	21	41	1,920	323	267
Specific conductance (µS/cm)	18	262	610	498	520
pH (standard units)	15	7.5	8.2	7.9	8.0
Temperature (°C)	21	3.0	20.0	10.5	11.0
Hardness, dissolved (mg/L as $CaCO_3$)	7	120	260	219	230
Hardness, noncarbonate (mg/L $CaCO_3$)	7	43	100	83	95
Alkalinity, onsite (mg/L as $CaCO_3$)	13	79	196	137	135
Arsenic, total (µg/L as As)	17	11	130	29	17
Arsenic, dissolved (µg/L as As)	17	7	39	15	12
Cadmium, total recoverable (µg/L as Cd)	17	<1	3	<1	<1
Cadmium, dissolved (µg/L as Cd)	17	<1	1	<1	<1
Copper, total recoverable (µg/L as Cu)	17	22	630	118	59
Cooper, dissolved (µg/L as Cu)	17	5	33	12	9
Iron, total recoverable (µg/L as Fe)	17	160	29,000	4,860	940
Iron, dissolved (µg/L as Fe)	17	<3	65	15	11
Lead, total recoverable (µg/L as Pb)	17	<2	100	17	6
Lead, dissolved (µg/L as Pb)	17	<1	6	<5	<5
Manganese, total recoverable (µg/L as Mn)	17	90	1,800	450	220
Manganese, dissolved (µg/L as Mn)	17	<10	210	51	40
Zinc, total recoverable (µg/L as Zn)	17	20	770	156	80
Zinc, dissolved (µg/L as Zn)	17	9	34	18	16
Sediment, suspended (mg/L)	21	3	1,390	134	28
Sediment, suspended (percent finer than 0.062 mm)	18	41	87	65	69
12324590 Little Blackfoot River near Garrison, Mont.					
Streamflow, instantaneous (ft^3/s)	10	37	550	233	244
Specific conductance (µS/cm)	10	125	300	218	215
pH (standard units)	10	7.4	8.3	7.8	7.6
Temperature (°C)	10	1.0	13.0	7.0	7.0
Hardness, dissolved (mg/L as $CaCO_3$)	5	81	140	111	110
Hardness, noncarbonate (mg/L $CaCO_3$)	5	0	14	7	5
Alkalinity, onsite (mg/L as $CaCO_3$)	8	41	127	92	91
Arsenic, total (µg/L as As)	10	4	17	6	5
Arsenic, dissolved (µg/L as As)	10	4	6	5	5
Cadmium, total recoverable (µg/L as Cd)	10	<1	2	<1	<1
Cadmium, dissolved (µg/L as Cd)	10	<1	<1	<1	<1
Copper, total recoverable (µg/L as Cu)	10	3	30	9	6
Copper, dissolved (µg/L as Cu)	10	1	4	3	3
Iron, total recoverable (µg/L as Fe)	10	50	12,000	1,530	330
Iron, dissolved (µg/L as Fe)	10	<3	85	31	21
Lead, total recoverable (µg/L as Pb)	10	1	25	8	<5
Lead, dissolved (µg/L as Pb)	10	<1	6	<5	<5
Manganese, total recoverable (µg/L as Mn)	10	<10	1,100	134	20
Manganese, dissolved (µg/L as Mn)	10	1	13	6	5
Zinc, total recoverable (µg/L as Zn)	10	<10	100	20	10
Zinc, dissolved (µg/L as Zn)	10	<3	8	4	4
Sediment, suspended (mg/L)	10	4	728	86	15
Sediment, suspended (percent finer than 0.062 mm)	10	49	94	71	72

Table 7.--*Statistical summary of water-quality data, March 1985 through September 1987*--Continued

Parameter and unit of measurement	Number of samples	Minimum	Maximum	Mean	Median
12331500 Flint Creek near Drummond, Mont.					
Streamflow, instantaneous (ft^3/s)	14	8	892	201	140
Specific conductance (µS/cm)	14	140	501	311	292
pH (standard units)	14	7.5	8.8	8.0	8.1
Temperature (°C)	14	.5	17.0	10.5	12.0
Hardness, dissolved (mg/L as $CaCO_3$)	7	60	260	159	180
Hardness, noncarbonate (mg/L $CaCO_3$)	7	0	27	8	2
Alkalinity, onsite (mg/L as $CaCO_3$)	11	60	238	144	123
Arsenic, total (µg/L as As)	14	8	49	22	16
Arsenic, dissolved (µg/L as As)	14	5	20	11	10
Cadmium, total recoverable (µg/L as Cd)	14	<1	3	<1	<1
Cadmium, dissolved (µg/L as Cd)	14	<1	1	<1	<1
Copper, total recoverable (µg/L as Cu)	14	3	29	11	10
Copper, dissolved (µg/L as Cu)	14	1	7	3	3
Iron, total recoverable (µg/L as Fe)	14	190	4,700	1,250	675
Iron, dissolved (µg/L as Fe)	14	4	180	33	17
Lead, total recoverable (µg/L as Pb)	14	3	56	16	9
Lead, dissolved (µg/L as Pb)	14	<1	7	<5	<5
Manganese, total recoverable (µg/L as Mn)	14	70	940	308	195
Manganese, dissolved (µg/L as Mn)	14	19	97	45	42
Zinc, total recoverable (µg/L as Zn)	14	<10	170	63	35
Zinc, dissolved (µg/L as Zn)	14	<3	20	9	8
Sediment, suspended (mg/L)	14	8	230	65	36
Sediment, suspended (percent finer than 0.062 mm)	14	55	98	78	78
12334510 Rock Creek near Clinton , Mont.					
Streamflow, instantaneous (ft^3/s)	11	150	1,650	776	720
Specific conductance (µS/cm)	11	68	154	105	100
pH (standard units)	11	6.9	8.4	7.6	7.7
Temperature (°C)	11	.5	12.5	8.5	9.5
Hardness, dissolved (mg/L as $CaCO_3$)	5	33	78	54	49
Hardness, noncarbonate (mg/L $CaCO_3$)	5	0	6	2	0
Alkalinity, onsite (mg/L as $CaCO_3$)	9	31	82	47	43
Arsenic, total (µg/L as As)	11	<1	2	<1	<1
Arsenic, dissolved (µg/L as As)	11	<1	1	<1	<1
Cadmium, total recoverable (µg/L as Cd)	11	<1	3	<1	<1
Cadmium, dissolved (µg/L as Cd)	11	<1	<1	<1	<1
Copper, total recoverable (µg/L as Cu)	11	1	41	9	5
Copper, dissolved (µg/L as Cu)	11	<1	5	2	2
Iron, total recoverable (µg/L as Fe)	11	40	800	278	230
Iron, dissolved (µg/L as Fe)	11	7	110	37	36
Lead, total recoverable (µg/L as Pb)	11	1	19	8	5
Lead, dissolved (µg/L as Pb)	11	<1	5	<5	<5
Manganese, total recoverable (µg/L as Mn)	11	<10	40	18	20
Manganese, dissolved (µg/L as Mn)	11	<1	8	2	<1
Zinc, total recoverable (µg/L as Zn)	11	<10	50	19	20
Zinc, dissolved (µg/L as Zn)	11	<3	15	5	<3
Sediment, suspended (mg/L)	11	1	36	15	12
Sediment, suspended (percent finer than 0.062 mm)	11	35	88	65	65

Table 7.--*Statistical summary of water-quality data, March 1985 through September 1987*--Continued

Parameter and unit of measurement	Number of samples	Minimum	Maximum	Mean	Median
12334550 Clark Fork at Turah Bridge, near Bonner, Mont.					
Streamflow, instantaneous (ft^3/s)	25	502	9,370	1,730	1,200
Specific conductance (µS/cm)	17	165	412	302	310
pH (standard units)	15	7.4	8.7	7.9	8.0
Temperature (°C)	25	.5	17.0	10.5	12.0
Hardness, dissolved (mg/L as $CaCO_3$)	7	67	200	138	130
Hardness, noncarbonate (mg/L $CaCO_3$)	7	10	62	36	33
Alkalinity, onsite (mg/L as $CaCO_3$)	13	57	138	99	101
Arsenic, total (µg/L as As)	16	5	64	12	7
Arsenic, dissolved (µg/L as As)	16	4	15	6	6
Cadmium, total recoverable (µg/L as Cd)	16	<1	4	1	<1
Cadmium, dissolved (µg/L as Cd)	16	<1	<1	<1	<1
Copper, total recoverable (µg/L as Cu)	16	10	470	66	30
Copper, dissolved (µg/L as Cu)	16	2	25	8	6
Iron, total recoverable (µg/L as Fe)	16	70	17,000	1,810	550
Iron, dissolved (µg/L as Fe)	16	<3	170	28	18
Lead, total recoverable (µg/L as Pb)	16	<3	92	21	12
Lead, dissolved (µg/L as Pb)	16	<1	7	<5	<5
Manganese, total recoverable (µg/L as Mn)	16	20	1,700	196	85
Manganese, dissolved (µg/L as Mn)	16	<1	31	8	6
Zinc, total recoverable (µg/L as Zn)	16	<10	1,100	118	40
Zinc, dissolved (µg/L as Zn)	16	<3	27	10	8
Sediment, suspended (mg/L)	25	6	1,370	91	23
Sediment, suspended (percent finer than 0.062 mm)	23	27	86	60	57
12340000 Blackfoot River near Bonner, Mont.					
Streamflow, instantaneous (ft^3/s)	18	410	5,150	1,840	1,090
Specific conductance (µS/cm)	12	131	262	189	178
pH (standard units)	12	7.5	8.4	8.0	8.0
Temperature (°C)	18	.0	19.0	9.0	9.5
Hardness, dissolved (mg/L as $CaCO_3$)	5	68	140	106	100
Hardness, noncarbonate (mg/L $CaCO_3$)	5	0	13	5	3
Alkalinity, onsite (mg/L as $CaCO_3$)	9	65	138	92	84
Arsenic, total (µg/L as As)	12	<1	12	2	1
Arsenic, dissolved (µg/L as As)	12	<1	1	<1	<1
Cadmium, total recoverable (µg/L as Cd)	12	<1	2	<1	<1
Cadmium, dissolved (µg/L as Cd)	12	<1	1	<1	<1
Copper, total recoverable (µg/L as Cu)	12	4	34	10	8
Copper, dissolved (µg/L as Cu)	12	1	6	3	3
Iron, total recoverable (µg/L as Fe)	12	50	950	437	340
Iron, dissolved (µg/L as Fe)	12	<3	100	25	15
Lead, total recoverable (µg/L as Pb)	12	3	20	12	13
Lead, dissolved (µg/L as Pb)	12	<1	8	<5	<5
Manganese, total recoverable (µg/L as Mn)	12	<10	60	32	35
Manganese, dissolved (µg/L as Mn)	12	<1	6	3	2
Zinc, total recoverable (µg/L as Zn)	12	<10	20	14	10
Zinc, dissolved (µg/L as Zn)	12	<3	15	7	6
Sediment, suspended (mg/L)	18	1	76	19	8
Sediment, suspended (percent finer than 0.062 mm)	18	42	89	67	68