Water Resources Data
Montana
Water Year 2004

Volume 2. Yellowstone and Upper Columbia River Basins and Ground-Water Levels

By Wayne R. Berkas, Melvin K. White, Patricia B. Ladd, Fred A. Bailey, and Kent A. Dodge

Water-Data Report MT-04-2

Prepared in cooperation with the State of Montana and other agencies

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PREFACE

In the act that established the U.S. Geological Survey more than a century ago, the agency was charged by Congress with the responsibility for "...classification of the public lands, and examination of the geologic structure, mineral resources, and products of the national domain." This charge was simple recognition of the principle that factual information is essential to sound development and management decisions involving natural resources. In keeping with this principle, the Water Resources Division of the Survey publishes annually, by district, hydrologic records for water resources thought to be of particular usefulness to the public and to the scientific community.

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

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Water resources data for Montana for the 2004 water year, volumes 1 and 2, consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This volume contains discharge records for 119 streamflow-gaging stations; stage or content records for 21 lakes and reservoirs; and water-quality records for 69 streamflow stations (17 ungaged), and 3 lake sites; water-level records for 51 observation wells; and precipitation and water-quality records for 2 atmospheric-deposition stations. Additional water year 2004 data collected at crest-stage gage and miscellaneous-measurement sites were collected but are not published in this report. These data are stored within the District office files in Helena and are available on request. These data represent part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Montana.

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[Letter after station name designates types of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevations or contents]

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

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COUNTIES AND STATIONS FOR WHICH GROUND-WATER LEVELS ARE PUBLISHED IN THIS VOLUME

COUNTIES AND STATIONS FOR WHICH GROUND-WATER LEVELS, ARE PUBLISHED IN THIS VOLUME

QUANTITY AND QUALITY OF PRECIPITATION
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INTRODUCTION

The U.S. Geological Survey (USGS), in cooperation with other Federal, State, and local agencies and Tribal governments, collects a large amount of data pertaining to the water resources of Montana each water year. These data, accumulated over many years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the USGS, the data are published annually, by water year, in this report series entitled, "Water Resources Data, Montana."

This report, volumes 1 and 2, includes records of both surface and ground water from stations within the State and selected stations near the Montana border in adjacent states and Canada. Specifically, it contains (1) discharge records for 253 streamflow-gaging stations; (2) stage or content records for 39 reservoirs or lakes; (3) water-quality records for 135 stream sites (50 ungaged), 13 wells, and 3 lake sites; (4) water-level records for 51 wells; and (5) precipitation and water-quality records for 2 atmospheric-deposition stations. Volume 1 contains discharge records for 134 streamflow-gaging stations; stage or content records for 18 reservoirs or lakes; and water-quality records for 66 stream sites (34 ungaged) and 13 wells. Volume 2 contains discharge records for 119 streamflow-gaging stations; stage or content records for 21 reservoirs or lakes; water-quality records for 69 stream sites (17 ungaged) and 3 lake sites; water-level records for 51 observation wells; and precipitation and water-quality records for 2 atmospheric-deposition stations. The locations of streamflow-gaging and reservoir stations are shown in figure 6, locations of water-quality and precipitation stations are shown in figure 7, and locations of observation wells are shown in figure 8.

Additional data for water year 2004 were collected at crest-stage gage and miscellaneous-measurement sites but are not published in this report. These data are stored in the USGS Montana District Office in Helena and are available on request.

Records pertaining to the discharge of streams and contents of lakes and reservoirs were first published in a series of USGS Water-Supply Papers entitled "Surface Water Supply of the United States." These Water-Supply Papers were published in an annual series for water years 1899-1960 and then in a 5-year series for water years 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of Water-Supply Papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of Water-Supply Papers entitled "Ground-Water Levels in the United States." Water-Supply Papers may be reviewed in the libraries of the principal cities of the United States. The annual Water-Supply Papers were compiled and may be purchased by writing to USGS Information Services, Box 25286, Denver, Colorado 80225. For water years 1961 through 1970, streamflow data were published by the USGS in annual reports for each State. Water-quality records for water years 1964 through 1970 were similarly published either in separate reports or in conjunction with streamflow records. Beginning with the 1971 water year, data for surface and ground water are published as a single or multi-volume USGS annual water-data report for each State. These reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, volume 1 is identified as "U.S. Geological Survey Water-Data Report MT-04-1." The water-data reports published prior to 2003 are for sale, in paper copy or on microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, telephone 1-800-553-6847. Reports published from 2003 to present are located on the Web at *http://water.usgs.gov/pubs/wdr*.

Water-resources information for Montana and the rest of the Nation are available through the World Wide Web as part of the USGS National Water-Information System (NWIS) at *http://waterdata.usgs.gov/nwis*. For Montana, this information includes surface-water, water-quality, and ground-water data. Surface-water information available from the USGS includes provisional real-time streamflow data for stations with satellite telemetry, provisional daily data for the previous 18 months, and daily data for the period of record at each site. Daily, monthly, and annual streamflow statistics also are available as well as annual peak streamflow data. In addition, flood-frequency and basin-characteristics information for selected sites in Montana is available at *http://mt.water.usgs.gov/freq*.

Water-quality information available from the USGS includes provisional real-time specific-conductance and water-temperature data for selected sites with satellite telemetry and historical water-quality data for many surface- and ground-water sites in Montana.

Ground-water information available from the USGS includes descriptive information for wells, springs, and test holes such as location (latitude and longitude), well depth, site use, water levels, and aquifer.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone at (406) 457-5900 or 1-888-ASK-USGS.

COOPERATION

The USGS has had cooperative agreements with other agencies and organizations for the systematic collection of streamflow records since 1906, for water-quality records since 1946, and for ground-water levels since 1964. In water year 2004, agencies and organizations that supported data collection through cooperative agreements with the USGS are:

Federal Agencies
- Department of Energy, Bonneville Power Administration
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Department of State, International Joint Commission
- Federal Emergency Management Agency
- National Park Service
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture, Forest Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Tribal Governments
- Blackfeet Nation
- Chippewa Cree Tribe of the Rocky Boy's Reservation
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Fort Peck Tribes
- Northern Cheyenne Tribe

State Agencies
- Montana Bureau of Mines and Geology
- Montana Department of Environmental Quality
- Montana Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana Department of Transportation
- Wyoming Department of Environmental Quality
- Wyoming State Engineer

Federal Energy Regulatory Commission Licensees
- Avista Corporation
- Pacific Power and Light

Local Agencies
- Cascade County Conservation District
- City of Bozeman
- East Bench Irrigation District
- Lewis and Clark County Water Quality Protection District
- Lower Musselshell Conservation District
- North Powell Conservation District
- Park Conservation District
- Stillwater Conservation District
- Teton County Conservation District

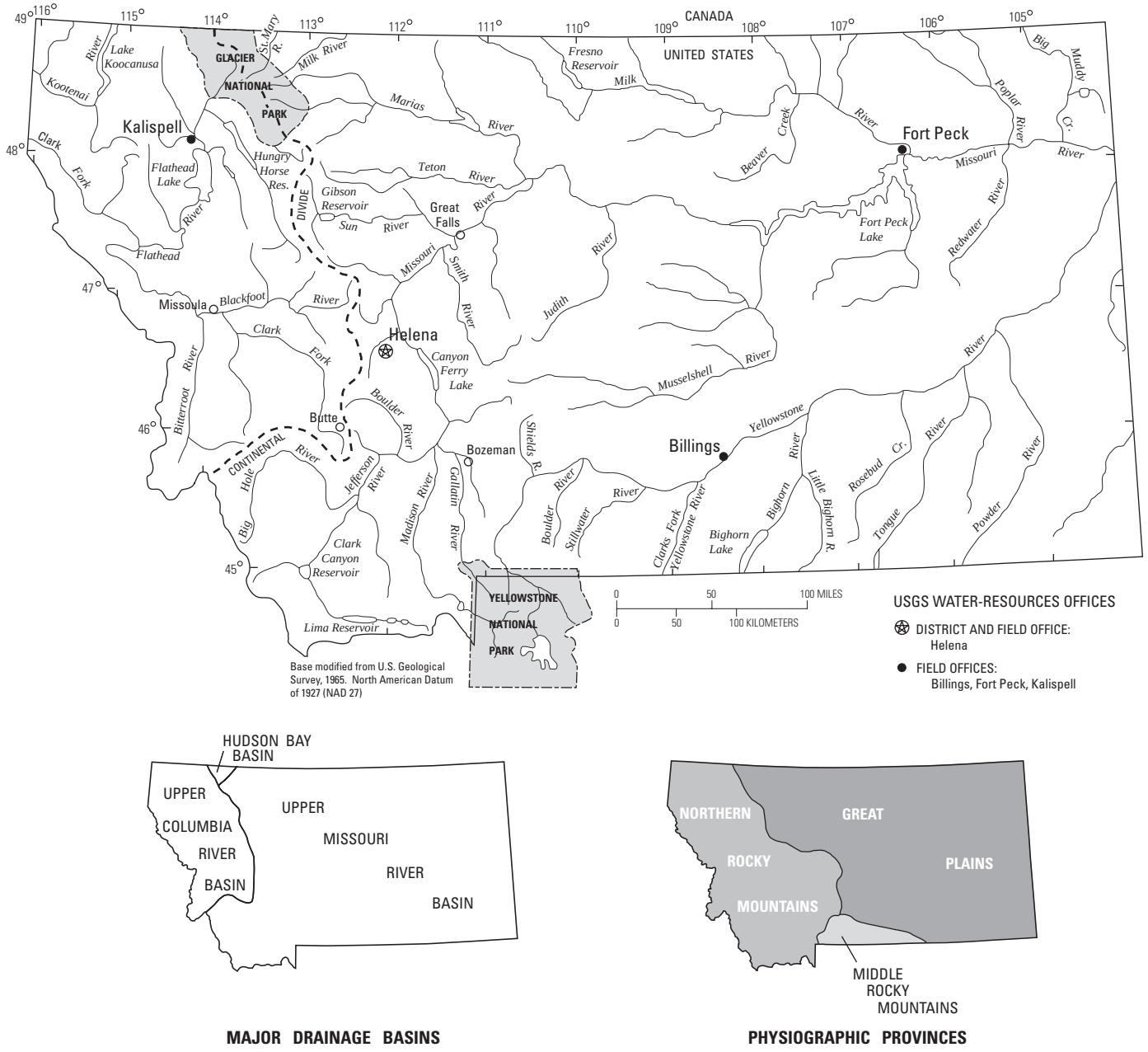
GENERAL HYDROLOGIC SETTING

Montana, with an area of about 147,200 square miles (mi^2), is the fourth largest State in the Nation (fig. 1). The major drainage basins in the State are the Hudson Bay basin (465 mi^2) and the upper Missouri River basin (120,700 mi^2) east of the Continental Divide, and the upper Columbia River basin (26,000 mi^2) west of the divide. The Hudson Bay and upper Missouri River basins drain about 82 percent of the State and provide slightly less than 50 percent of the total annual streamflow. The upper Columbia River basin drains about 18 percent of the State and provides about 50 percent of the total annual streamflow.

The western and southwestern parts of the State are in the Northern and Middle Rocky Mountains physiographic provinces. The central and eastern parts are in the Great Plains physiographic province. The Northern and Middle Rocky Mountains are characterized by rugged mountains and intermontane valleys, whereas the Great Plains consists of rolling to dissected plains and small mountain ranges. Altitude in Montana ranges from more than 12,000 feet above the National Geodetic Vertical Datum of 1929 (NGVD 29) in the mountains northeast of Yellowstone National Park to about 1,850 feet above NGVD 29 where the Kootenai River flows from the northwestern part of the State.

Climate and hydrologic conditions differ substantially across the State. Annual precipitation varies considerably throughout the basins, from about 100-120 inches along the Continental Divide in Glacier National Park to about 6-12 inches in parts of eastern and south-central Montana and in some of the western intermontane valleys. The diverse precipitation patterns in Montana result from the effects of geographic and topographic features on warm, moist air from either the Gulf of Mexico or the Pacific Ocean. In mountainous areas, much of the annual precipitation falls as snow during the winter. Although much of the annual precipitation on the Great Plains also falls as snow during the winter, intense rainstorms during the summer can add substantial quantities of precipitation to the annual totals in a short time. In areas east of the mountains, generally one-half of the annual precipitation falls from May through July.

Peak runoff from the basins can result from snowmelt, snowmelt mixed with rain, or intense rainfall. In addition, backwater from ice jams commonly creates flooding in many rivers throughout the State. The record flood of April



MAJOR DRAINAGE BASINS

PHYSIOGRAPHIC PROVINCES

Figure 1. General geographic features of Montana.

1952 in northeastern Montana is an example of spring snowmelt flooding. The flood in May 1981 in west-central Montana is an example of flooding caused by snowmelt mixed with rain. The floods of June 1964, June 1975, and May 1978 are examples of flooding predominantly caused by intense rainfall. Flash floods, although restricted in areal extent, are at times numerous in the north-central and eastern parts of the State. In many areas, peak runoff is stored in reservoirs to decrease flooding. The stored water is used for irrigation (the predominant consumptive use of water statewide), power generation, and recreation.

Surface water throughout the State generally is suitable for most uses except in parts of eastern Montana where, because of large concentrations of dissolved solids and some individual constituents, water-quality standards or recommended guidelines for protecting human health, agricultural irrigation, and freshwater aquatic life may be exceeded. The ionic composition of surface water is largely influenced by geology and can vary markedly between the western mountains and the eastern plains. In addition, dissolved-solids concentrations can vary substantially between runoff conditions and base flow. In the western mountains, where the rocks generally are older and resistant to weathering, the streamflow characteristically is a calcium bicarbonate type. The dissolved-solids concentrations in mountain streams commonly are less than 100 milligrams per liter (mg/L) and seldom exceed 500 mg/L, even during base-flow conditions. In the eastern plains, where sedimentary rocks are less resistant to weathering, streamflow commonly is a sodium sulfate type, with dissolved-solids concentrations ranging from about 100 mg/L during runoff to several thousand mg/L during base flow. In the northeastern part of the State, streamflow typically is a sodium bicarbonate type. Snowmelt and intense rainstorms sometimes produce large quantities of runoff that can dilute concentrations of dissolved solids, modify chemical compositions, and increase concentrations of suspended sediment.

The availability and quality of ground water in Montana are largely controlled by the diverse hydraulic and geochemical properties of the various rocks, sediments, and hydrologic settings. In western Montana, ground water is available from alluvium along streams and rivers, from basin fill in intermontane valleys, from glacial deposits, and from fractured consolidated rocks. In eastern Montana, ground water is available from alluvial deposits along larger rivers and streams and from sedimentary rocks. Outside of the alluvial valleys, ground-water availability in sedimentary rock is variable. Throughout Montana, alluvial deposits along streams generally are the most productive aquifers, and wells completed in alluvium along the major streams may produce several hundred gallons per minute. Alluvium can be readily recharged by precipitation, by streams during periods of high flow, and by applied irrigation water. The particle-size distribution and sorting of glacial deposits largely determines their potential for water development. Where coarse, well-sorted outwash gravels are present, the potential for developing large-yield wells is good, whereas yields from wells completed in poorly sorted glacial till generally are limited to a few gallons per minute. Many fractured consolidated-rock formations are tapped for ground water but, because of the complexity of the geology, fractured rocks might not provide an adequate water supply in all areas. Wells completed in consolidated rocks generally yield only a few gallons per minute. However, several hundred gallons per minute can be obtained from highly fractured or cavernous formations in some areas. The well depth required to reach a given aquifer varies with location.

HYDROLOGIC-MONITORING ACTIVITY

One streamflow-gaging station was established during water year 2004 to aid in the assessment of the Nation's water resources::

06036940 Tantalus Creek at Norris Junction, Yellowstone National Park

Thirteen streamflow-gaging stations were discontinued during or at the end of water year 2004. The stations were:

05016000 Swiftcurrent Creek at Sherburne
06115270 Armells Creek near Landusky
06115300 Duval Creek near Landusky
06115350 Rock Creek near Landusky
06127020 Willow Creek above LMGD Reservoir, near Roundup
06127060 Willow Creek at U.S. Canal, near Roundup
06130650 Hell Creek near Jordan
06131200 Nelson Creek near Van Norman
06139900 Beaver Creek at reservation boundary, near Rocky Boy
06177500 Redwater River at Circle
06290500 Little Bighorn River below Pass Creek, near Wyola
12331500 Flint Creek near Drummond
12343400 East Fork Bitterroot River near Conner

Six water-quality stations were established or reestablished in the Tongue River basin to supplement information in an area of potential coal-bed methane development. These stations are:

06299980 Tongue River at Monarch, Wyo.
06305700 Goose Creek near Acme, Wyo.
06306250 Prairie Dog Creek near Acme, Wyo.

06307500 Tongue River at Tongue River Dam, near Decker
06307616 Tongue River at Birney Day School, near Birney
06308400 Pumpkin Creek near Miles City

Water-quality sampling continued for surface-water sites and ground-water wells that were established in 2002 in the headwaters of Tenmile Creek and Basin Creek near the Luttrell Repository where mine wastes and mill tailings from nearby abandoned-mine sites are being placed for long-term storage. The sampling of streams and ground water in the area surrounding the repository is intended to detect any potential migration of contaminants from the repository. Two surface-water stations were reestablished for the study in 2004:

462500112170201 LAD 01
462500112170501 LAD 02

A one-time sampling for mercury and related geothermal constituents was conducted during 2004 at the following stations:

06037500 Madison River near West Yellowstone
06038500 Madison River below Hebgen Lake, near Grayling
06038800 Madison River at Kirby Ranch, near Cameron
06040800 Madison River above powerplant, near McAllister
06042600 Madison River at Three Forks

An expanded monitoring network was established for the Blackfoot River basin in 2004, which included the following new or reestablished stations:

12334650 Blackfoot River below Alice Creek, near Lincoln
12334680 Landers Fork near Lincoln
12334800 Blackfoot River at Dalton Mountain Road bridge, near Lincoln
12336600 Nevada Creek below reservoir, near Helmville
12337820 Blackfoot River at Raymond Bridge, near Ovando
12338300 North Fork Blackfoot River above Dry Gulch, near Ovando
12338690 Monture Creek near Ovando
12338700 Blackfoot River at Scotty Brown Bridge, near Ovando
12339500 Clearwater River at Clearwater

Six wells in the Buckeye Mine area that were sampled in past years were again sampled in 2004 to evaluate the effects of acid mine drainage on water quality. These stations are:

462341112174601 Well BTMW-7
462342112174201 Well BTMW-3
462342112174601 Well BTMW-6
462342112174801 Well BTMW-8
462344112173701 Well BTMW-1
462347112173301 Well BTMW-9

Water-quality data collection was discontinued at 28 locations during or at the end of water year 2004. These locations were:

05016000 Swiftcurrent Creek at Sherburne
06037500 Madison River near West Yellowstone
06038500 Madison River below Hebgen Lake, near Grayling
06038800 Madison River at Kirby Ranch, near Cameron
06040800 Madison River above powerplant, near McAllister
06042600 Madison River at Three Forks
06062750 Tenmile Creek at Tenmile Water Treatment Plant, near Rimini
06063000 Tenmile Creek near Helena
06064100 Tenmile Creek at Green Meadow Drive, near Helena
06130500 Musselshell River at Mosby
12300110 Lake Koocanusa at international boundary
12301830 Lake Koocanusa at Tenmile Creek, near Libby
12301919 Lake Koocanusa at forebay, near Libby
12301933 Kootenai River below Libby Dam, near Libby
12324590 Little Blackfoot River near Garrison
12331500 Flint Creek near Drummond
12334510 Rock Creek near Clinton
12335500 Nevada Creek above reservoir, near Helmville
445832106551401 Youngs Creek above mouth, near Decker
450047106514201 Squirrel Creek above mouth, at Decker
450137106595101 Youngs Creek near reservation boundary, near Decker
451302106583201 Rosebud Creek near Rosebud Battlefield, near Kirby
451618106590001 Indian Creek at mouth, near Kirby
452800107001101 Thompson Creek near Busby
462458112173201 Unnamed tributary to Grub Creek, SS No. 5, near Rimini
462501112173501 Unnamed tributary to Grub Creek, SS No. 4, near Rimini
463438112091801 Tenmile Creek below Colorado Gulch, near Helena
463747112033801 Sevenmile Creek at Green Meadow Drive, at Helena

SUMMARY OF HYDROLOGIC CONDITIONS

Temperature and Precipitation

For most of Montana, temperatures from October through April were warmer than normal. The above-normal temperatures in March caused valley and prairie snow in many areas to melt earlier than usual. Warmer temperatures in April caused mountain snow to begin to melt earlier than usual, but cooler than normal temperatures in May and June slowed the melting of the remaining mountain snowpack. Temperatures generally remained above normal across the State for the rest of the water year.

Precipitation, departure from normal precipitation, and percentage of normal precipitation for seven climatological divisions of the State are presented in table 1. The precipitation data listed in table 1 are averages of the total monthly precipitation for the National Weather Service (NWS) reporting stations within each of the climatological divisions. No attempt was made to area-weight the division totals. As shown in table 1, for October 2003 through March 2004, precipitation ranged from 70 percent of normal in the southwestern division to a near-record 130 percent of normal in the northeastern division. For April through September 2004, precipitation ranged from 73 percent of normal in the southeastern division to 123 percent of normal in the western division. Percentage of normal precipitation for water year 2004 varied across the State from 78 percent of normal in the southeastern division to 101 percent of normal in the north-central division. Overall, all climatological divisions, except the north-central division, received less-than-normal precipitation in water year 2004. Total average precipitation for water year 2004 ranged from 10.81 inches in the southeastern division to 19.59 inches in the western division (table 1).

Table 1. Precipitation and departure from normal, in inches, and percentage of normal, Montana, water year 2004.[1]

Climatological division (number of stations)	October 2003 through March 2004			April through September 2004			Water year 2004		
	Total monthly precipitation	Departure from normal, 1971-2000	Percentage of normal	Total monthly precipitation	Departure from normal, 1971-2000	Percentage of normal	Total average precipitation	Departure from normal, 1971-2000	Percentage of normal
Western (45)	7.73	-2.60	75	11.86	2.23	123	19.59	-0.37	98
Southwestern (22)	3.81	-1.65	70	10.50	.00	100	14.31	-1.65	90
North Central (42)	3.07	-.24	93	10.45	.42	104	13.52	.18	101
Central (35)	3.75	-.49	88	10.18	-.62	94	13.93	-1.11	93
South Central (26)	4.43	-1.00	82	9.28	-1.74	84	13.71	-2.74	83
Northeastern (27)	3.44	.80	130	8.91	-1.38	87	12.35	-.58	96
Southeastern (22)	3.27	-.28	92	7.54	-2.83	73	10.81	-3.11	78

[1]Data from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, 2004, Climatological Data, Montana, v. 106, no. 10 through v. 107, no. 9. Normals of precipitation are determined from the base period 1971-2000.

Most NWS stations in Montana measure precipitation in valley or non-mountainous locations. Data for precipitation falling as snow in the mountainous parts of the State during the winter are published by the U.S. Department of Agriculture, Natural Resources Conservation Service (available at *http://www.wcc.nrcs.usda.gov/snow/snotel-reports.html)*. Snow-water equivalents of mountain snowpack, determined from SNOTEL information, for various basins in Montana are presented in table 2.

By March 1, 2004, snow-water equivalent of the snowpack in all basins ranged from 81 to 133 percent of average. During March, a month when mountain snowpack typically increases, early melting coupled with little additional snowfall resulted in snow-water equivalents on April 1 that were all less than average. Continued early melting and little additional snowfall in April resulted in snow-water equivalents on May 1 that were well below average. Because the snowpack began melting earlier than usual and the melt occurred over a long period, much of the melt water infiltrated the ground rather than running off to streams.

Table 2. Snow-water equivalent and percent of average snow-water equivalent of mountain snowpack in selected basins in Montana, March 1-May 1, 2004.[1]

Drainage basin	March 1, 2004			April 1, 2004			May 1, 2004		
	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average	Basin-wide snow-water equivalent, in inches	Basin-wide average snow-water equivalent, in inches	Percentage of average
Hudson Bay									
St. Mary	21.8	26.8	81	21.2	30.2	70	18.6	26.2	71
Missouri									
Upper Missouri	13.7	14.0	98	14.4	17.4	83	12.2	17.4	70
Sun, Teton, Marias	13.2	16.2	81	14.5	19.1	76	9.7	17.7	55
Smith, Judith, Musselshell	11.3	10.6	107	11.3	13.1	86	7.1	11.4	62
Lower Milk	5.7	4.3	133	.9	4.4	20	.0	1.2	0
Upper Yellowstone	13.2	15.7	84	13.4	19.2	70	10.8	19.6	55
Bighorn	9.7	11.6	84	10.0	14.3	70	9.0	15.2	59
Tongue	9.0	8.9	101	9.3	11.6	80	7.9	12.3	64
Powder	8.4	7.4	114	7.5	9.6	78	5.8	10.0	58
Upper Columbia									
Kootenai	22.0	22.7	97	22.6	26.3	86	15.8	23.8	66
Flathead	20.0	22.8	88	20.4	26.7	76	15.5	23.8	65
Clark Fork	17.5	18.8	93	17.6	22.1	80	12.8	19.9	64

[1]SNOTEL data from Natural Resources Conservation Service (NRCS) National Water and Climate Center, accessed January 31, 2005 at *http://www.wcc.nrcs.usda.gov/snow/snotel-reports.html*. Averages were determined from the base period 1971-2000.

SURFACE WATER

Streamflow

Streamflow data for water year 2004 can be compared to long-term data for water years 1971-2000 and maximum and minimum monthly mean discharge for the period of record at seven streamflow-gaging stations (fig. 2). Compared to the mean annual discharge (average of the annual mean discharges) for water years 1971-2000, the annual mean discharge (fig. 2) during water year 2004 was 84 percent of average at Middle Fork Flathead River near West Glacier (station 12358500); 73 percent of average at Clark Fork at St. Regis (station 12354500); 53 percent of average at Missouri River at Toston (station 06054500); 72 percent of average at Yellowstone River at Corwin Springs (station 06191500); 59 percent of average at Yellowstone River at Billings (station 06214500); 100 percent of average at Rock Creek below Horse Creek, near international boundary (station 06169500); and 55 percent of average at Marias River near Shelby (station 06099500).

The annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams is shown in figure 3. At both Yellowstone River at Corwin Springs and Middle Fork Flathead River near West Glacier, the annual mean discharge during water year 2004 was less than the long-term average for the period of record.

Extraordinary flooding did not occur in any major river basins in Montana during water year 2004. Although near-record amounts of snow were on the ground in much of northeastern Montana on March 1, the anomalously cool temperatures in that part of the State resulted in a slow melting with no substantial flooding. Generally the low soil-moisture conditions also meant that much of the slowly melting prairie snowpack percolated into the soil.

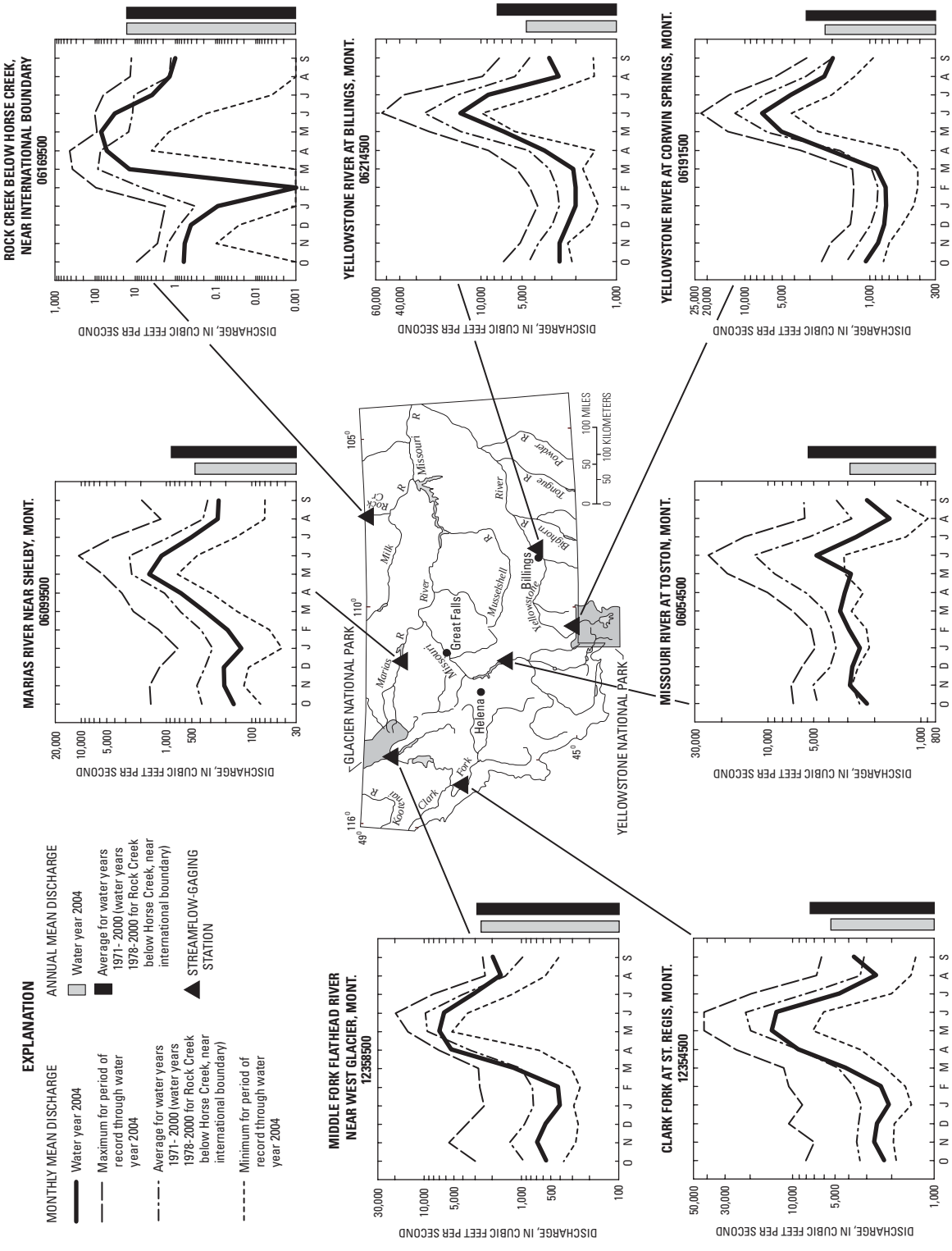


Figure 2. Streamflow data for water year 2004 compared to long-term data at selected streamflow-gaging stations in Montana.

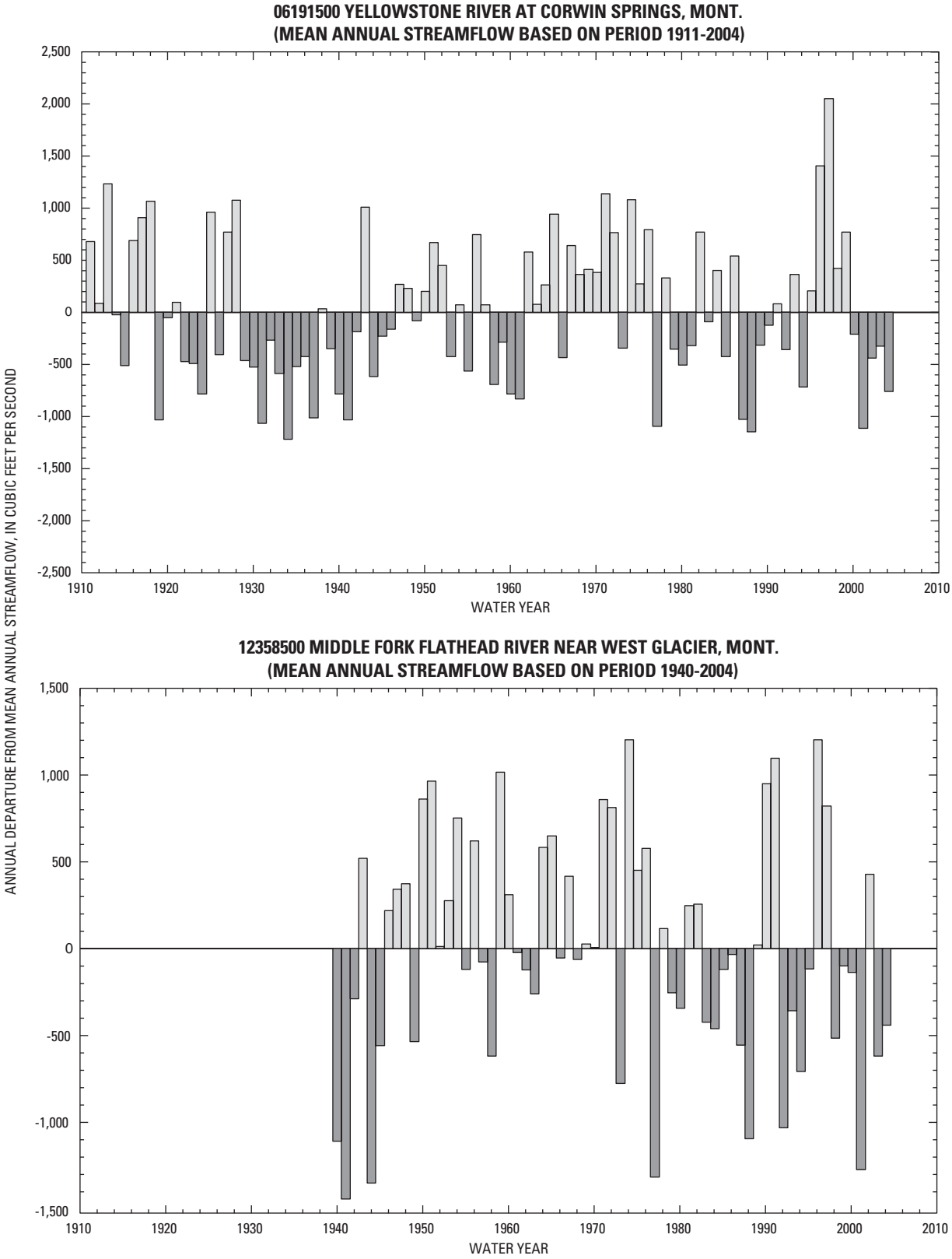


Figure 3. Annual departure from mean annual discharge at two streamflow-gaging stations on unregulated streams in Montana.

A comparison of instantaneous peak discharge at 25 selected streamflow-gaging stations for water year 2004 to instantaneous peak discharge for the period of record is presented in table 3. Record peak discharges were not recorded for any of these stations. However, peak discharge could not be determined at two stations in water year 2004 due to ice conditions. The recurrence intervals for peaks during water year 2004 were less than 2 years, except for one station in northeastern Montana that had a recurrence interval of 2-5 years.

Table 3. Comparisons of instantaneous peak discharge for water year 2004 to instantaneous peak discharge for period of record at selected stations in Montana.

[Symbols: <, less than; --, not determined; *, outside period of record]

Station number	Station name	Drainage area (square miles)	Peak discharge, water year 2004			Peak discharge, period of record through water year 2003	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	08/26	773	<2	06/08/64	6,700
05017500	St. Mary River near Babb	276	06/07	2,080	<2	06/09/64	16,500
06025500	Big Hole River near Melrose	2,476	06/12	2,250	<2	06/10/72	14,300
06054500	Missouri River at Toston	14,669	06/12	9,730	<2	06/12/97	34,000
06089000	Sun River near Vaughn	1,854	06/08	1,800	<2	06/09/64	53,500
06099500	Marias River near Shelby	3,242	06/08	18,400	<2	06/09/64	241,000
06115200	Missouri River near Landusky	40,987	05/30	10,700	<2	06/03/53	137,000
06120500	Musselshell River at Harlowton	1,125	06/13	694	<2	06/20/75	7,270
06154400	Peoples Creek near Hays	220	03/09	238	2-5	06/08/72	8,460
06174500	Milk River at Nashua	22,332	--	--	--	04/18/52	45,300
06181000	Poplar River near Poplar	3,174	05/31	1,380	<2	04/06/54	37,400
06191500	Yellowstone River at Corwin Springs	2,623	06/10	11,800	<2	06/10/96 06/06/97	32,200 32,200
06200000	Boulder River at Big Timber	523	06/10	3,230	<2	06/05/97	9,940
06214500	Yellowstone River at Billings	11,795	06/11	27,800	<2	06/12/97	82,000
06289000	Little Bighorn River at State line, near Wyola	193	05/08	215	<2	06/03/44	2,730
06308500	Tongue River at Miles City	5,397	--	--	--	06/15/62	13,300
06329500	Yellowstone River near Sidney	69,103	06/14	25,800	<2	06/21/21	159,000
12301300	Tobacco River near Eureka	440	04/15	857	<2	05/13/91	3,180
12304500	Yaak River near Troy	766	04/09	2,990	<2	05/17/97 * 05/54	12,600 *13,400
12332000	Middle Fork Rock Creek near Philipsburg	123	06/10	547	<2	06/16/74	1,680
12335500	Nevada Creek above reservoir, near Helmville	116	03/17	328	<2	06/02/53	1,800
12340000	Blackfoot River near Bonner	2,290	05/08	4,590	<2	06/10/64	19,200
12354500	Clark Fork at St. Regis	10,709	06/02	19,600	<2	05/24/48 05/18/97	68,900 68,900
12358500	Middle Fork Flathead River near West Glacier	1,128	05/05	11,100	<2	06/09/64	140,000
12370000	Swan River near Bigfork	671	06/08	3,150	<2	06/20/74	8,890

A comparison of minimum daily mean discharge at 24 selected long-term streamflow-gaging stations for water year 2004 to minimum daily mean discharge for the period of record is presented in table 4. Record minimum daily mean discharges were not recorded during water year 2004, although below-normal streamflow conditions prevailed at many stations throughout the year in Montana. Minimum daily discharges had recurrence intervals of less than 2 years at 5 sites, recurrence intervals of 2-5 years at 12 sites, recurrence intervals of 5-10 years at 4 sites, recurrence intervals of 10-20 years at 2 sites, and a recurrence interval of greater than 100 years at 1 site.

Table 4. Comparisons of minimum daily mean discharge for water year 2004 to minimum daily mean discharge for period of record at selected stations in Montana.

[Symbol: <, less than; >, greater than]

Station number	Station name	Drainage area (square miles)	Minimum daily mean discharge, water year 2004			Minimum daily mean discharge, period of record through water year 2003	
			Date	Cubic feet per second	Recurrence interval (years)	Date	Cubic feet per second
05014500	Swiftcurrent Creek at Many Glacier	30.9	01/29	10	2-5	11/14,16/76	0
05017500	St. Mary River near Babb	276	01/01	45	2-5	01/03/53	27
06025500	Big Hole River near Melrose	2,476	08/16	157	2-5	08/17/31	49
06054500	Missouri River at Toston	14,669	08/16	1,240	2-5	01/12/63	700
06089000	Sun River near Vaughn	1,854	05/06	97	2-5	05/26/41	23
06099500	Marias River near Shelby	3,242	01/27	86	2-5	08/20/19	10
06115200	Missouri River near Landusky	40,987	01/02	3,400	2-5	12/13/36	1,220
06120500	Musselshell River at Harlowton	1,125	09/02	6.7	2-5	([1])	0
06174500	Milk River at Nashua	22,332	01/05	40	2-5	([1])	0
06181000	Poplar River near Poplar	3,174	01/28	4.0	<2	([1])	0
06191500	Yellowstone River at Corwin Springs	2,623	01/05	660	<2	02/05/89	380
06200000	Boulder River at Big Timber	523	01/05	60	2-5	08/26/61	12
06214500	Yellowstone River at Billings	11,795	08/17	1,450	<2	12/12/32	450
06289000	Little Bighorn River at State line, near Wyola	193	01/04	28	5-10	02/02/89	18
06308500	Tongue River at Miles City	5,397	05/08	7.6	5-10	07/09/40	0
06329500	Yellowstone River near Sidney	69,103	08/22	1,480	10-20	05/17/61	570
12301300	Tobacco River near Eureka	440	08/18	44	2-5	01/11/63	20
12304500	Yaak River near Troy	766	10/05	64	5-10	09/19/01	49
12332000	Middle Fork Rock Creek near Philipsburg	123	01/05	25	<2	02/09/53	5.3
12335500	Nevada Creek above reservoir, near Helmville	116	01/06	5.0	<2	01/11/44	2.0
12340000	Blackfoot River near Bonner	2,290	01/06	300	2-5	01/04/50	200
12354500	Clark Fork at St. Regis	10,709	01/06	826	>100	02/03/89	800
12358500	Middle Fork Flathead River near West Glacier	1,128	01/28	228	10-20	11/27/52	189
12370000	Swan River near Bigfork	671	01/07	272	5-10	01/26-29/30	193

[1]At various dates.

The percentage-of-normal storage (based on water years 1971-2000), by month, for selected major reservoirs is presented in table 5. At the end of water year 2004, storage was within 20 percent of normal in four of the six major reservoirs used to supply water primarily for hydroelectric-power generation. Storage was within 20 percent of normal at the end of water year 2004 in two of the four reservoirs used to supply water primarily for irrigation.

Table 5. Percentage-of-normal storage, by month, during water year 2004 for selected major reservoirs in Montana.

Reservoir	Usable capacity (acre-feet)	Percentage-of-normal storage based on 1971-2000 period of record											
		2003			2004								
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Hydroelectric-power generation													
Canyon Ferry Lake	1,993,000	88	86	88	89	92	94	93	83	80	82	83	83
Fort Peck Lake	18,910,000	64	64	64	62	63	65	63	58	57	58	55	55
Bighorn Lake	1,356,000	79	82	83	81	83	82	81	75	65	65	71	72
Lake Koocanusa	5,748,000	108	117	119	141	168	158	158	139	109	99	97	103
Hungry Horse Reservoir	3,451,000	104	106	110	115	119	130	145	123	109	102	98	103
Flathead Lake	1,791,000	108	102	94	98	97	88	131	106	100	99	101	101
Irrigation													
Lima Reservoir	84,050	15	15	17	20	22	28	28	43	49	59	76	101
Clark Canyon Reservoir	255,600	16	20	25	30	34	36	35	31	23	19	17	21
Gibson Reservoir	96,480	22	34	41	45	48	65	111	106	101	82	56	75
Fresno Reservoir	103,000	47	43	40	35	29	39	50	55	62	88	77	82

WATER QUALITY

The USGS operates water-quality stations throughout Montana in cooperation with numerous Federal, State, local agencies, and Tribal governments. The stations change from year to year as objectives are achieved or modified, or funding levels change. Some stations are operated for only a few years and commonly are part of a short-term investigation to examine water quality related to a specific condition. Other stations have been in operation for many years and provide a basis for description of long-term water-quality conditions or trends that represent a wide range of hydrologic or land-use variability. Long-term stations typically are located on major streams that represent an important water resource in the area and require data on an ongoing basis for various management concerns. A monitoring network in the Tongue River basin was expanded to 11 sites in 2004. These sites, plus three sites in the Powder River basin and one site in the Rosebud Creek basin, are operated to assist water managers with assessing the potential effects of coal-bed methane development.

Various water-quality measurements are made, either onsite or by laboratory analysis of samples, depending on the objective of the investigation. Several types of water-quality data that describe physical and chemical characteristics are routinely obtained in many sampling programs. Examples of commonly measured water-quality characteristics are dissolved solids, dissolved oxygen, dissolved nitrite plus nitrate, total phosphorus, and suspended sediment. Guideline concentrations and standards have been established by the State of Montana (*http://www.deq.state.mt.us/wqinfo/Circulars/WQB-7.PDF*) and U.S. Environmental Protection Agency (USEPA) (*http://epa.gov/waterscience/standards/wqcriteria.html*) to provide values protective of human health and aquatic organisms.

The concentration of dissolved solids, which represents the mass (milligrams) of all constituents dissolved in a unit volume (liter) of water, can be determined either from the weight of dry residue that remains after evaporation of a known volume of water that has been filtered to remove particulate material, or estimated from the sum of the individual dissolved major-ion concentrations. An excessive concentration of dissolved solids can render the water unsuitable for certain uses such as human consumption, irrigation of crops, or livestock watering. Recommended guidelines compiled by the U.S. Department of Agriculture[1] indicate that water might not be suitable when dissolved-solids concentrations exceed 500 mg/L if used for human consumption,

1. U.S. Department of Agriculture, 2002, Natural Resources Conservation Service, Assessing water quality for agriculture and aquatic life uses: Environment Technical Note No. MT-1, 27 p.

1,000 mg/L if used for crop irrigation, and 10,000 mg/L if used for livestock watering.

Dissolved oxygen in surface water is essential for most aquatic organisms and is an indicator of the biochemical condition of the stream or lake. The solubility of oxygen in water is a function of water temperature and barometric pressure; therefore, the oxygen content in surface water is subject to considerable daily and seasonal change. Biological activities such as photosynthesis and decomposition also can cause rapid and large changes in dissolved-oxygen concentration. Dissolved-oxygen concentrations less than 5.0 mg/L for warm-water fish or less than 8.0 mg/L for cold-water fish may be detrimental to early life stages.[2]

Nitrogen (N) is an essential plant nutrient that occurs in several forms in water. Common sources of nitrogen are atmospheric deposition, soils, plant fertilizers, animal waste, and sewage or septic effluent. Nitrite and nitrate are inorganic forms of nitrogen that can occur in water, although nitrite is seldom present in large amounts in oxygenated water. Dissolved nitrate is a major nutrient for plants; consequently, large concentrations of nitrate in streams and lakes can cause rapid growth of aquatic plants. Nitrate concentrations in excess of 0.3 mg/L as N have the potential to stimulate growths of algae in the presence of adequate phosphorus.[3] In addition, human health can be adversely affected if the nitrate concentration exceeds 10 mg/L as N in drinking water.[2,4]

Phosphorus (P) is an essential plant nutrient that can stimulate excessive growth of aquatic plants. Total phosphorus includes the inorganic and organic forms of dissolved and suspended phosphorus and is commonly analyzed as an indicator of eutrophication potential. Although phosphorus can originate naturally from igneous and sedimentary rock formations, more common sources include sewage, detergents, fertilizer, and livestock waste. Total phosphorus concentrations to limit nuisance aquatic plant growth in streams should not exceed 0.03 mg/L as P in western Montana and 1.0 mg/L as P in eastern Montana.[1] Water-quality criteria established by the USEPA[5] also indicate that total phosphorus should not exceed 0.05 mg/L as P in streams discharging directly to lakes or 0.025 mg/L as P within lakes.

Suspended sediment is particulate material eroded from the land surface by either wind or water and maintained in suspension in streams by hydraulic energy. The quantity of suspended sediment in streams typically increases during periods of increased runoff, when large amounts of rainfall or snowmelt can rapidly erode soil and the increased streamflow can scour channel sediments. Although large suspended-sediment concentrations can occur naturally in areas underlain by easily erodible geologic materials, land use that disturbs soils also can contribute substantial quantities of sediment to streams and lakes. The quantity of sediment in suspension has important physical and chemical implications for aquatic life. Sediment in suspension during high flow may be deposited in stream channels or lakes where water velocities decrease. In areas of sediment deposition, aquatic insects or fish eggs can be smothered, thereby rendering the bottom habitat unsuitable for their survival. Many chemical constituents such as some metals, phosphorus, and some pesticides tend to sorb strongly to sediment. As a result, chemicals may be readily transported from land sources into river systems where aquatic organisms could be exposed to toxic concentrations.

Statistical summaries of selected water-quality measurements made at eight long-term water-quality stations in Montana are presented in table 6. The range of values for each type of measurement is described by the minimum and maximum values. To compare current and long-term water-quality conditions, the range of values are summarized for both water year 2004 and the period of record through water year 2003. In addition, the central tendency of data collected over the period of record is described by the median (50th percentile).

2. Montana Department of Environmental Quality, 2004, Montana numeric water quality standards: Circular WBQ-7, 38 p., Administrative Rules of Montana 17.30.619.
3. Mackenthun, K.M., 1969, The practice of water pollution biology: U.S. Department of the Interior, Federal Water Pollution Control Administration, Division of Technical Support, 281 p.
4. U.S. Environmental Protection Agency, 1991, Maximum Contaminant Levels (section 141.62 of subpart G of part 141, National Revised Primary Drinking Water Regulations): U.S. Code of Federal Regulations Title 40, Parts 100 to 149, revised as of July 1, 1991, p. 673.
5. U.S. Environmental Protection Agency, 1986, Quality criteria for water, 1986: Washington, D.C., Office of Water Regulations and Standards, EPA 440/5-86-001, unpaged.

Table 6. Statistical summaries of selected water-quality measurements for long-term water-quality stations in Montana for water year 2004 and the period of record through water year 2003.

[Symbols: <, less than; --, no data]

Station number	Station name	Water year 2004			Period of record through water year 2003			
		Number of samples	Minimum	Maximum	Number of samples	Minimum	Maximum	Median
Dissolved solids, in milligrams per liter								
06089000	Sun River near Vaughn	0	--	--	306	155	1,100	462
06178500	East Poplar River at international boundary	4	945	1,060	267	97	1,480	940
06185500	Missouri River near Culbertson	8	325	398	239	221	579	403
06308500	Tongue River at Miles City	16	361	842	203	155	1,330	553
06326500	Powder River near Locate	11	891	2,260	218	408	3,450	1,460
06329500	Yellowstone River near Sidney	0	--	--	297	142	863	467
12301933	Kootenai River below Libby Dam, near Libby	2	138	148	242	55	211	139
12352500	Bitterroot River near Missoula	2	39	73	33	26	107	56
Dissolved oxygen, in milligrams per liter								
06089000	Sun River near Vaughn	0	--	--	47	7.4	13.2	10.9
06178500	East Poplar River at international boundary	4	6.4	10.0	263	.9	17.2	9.1
06185500	Missouri River near Culbertson	8	6.2	12.8	277	6.0	14.2	9.3
06308500	Tongue River at Miles City	16	7.0	14.4	192	6.5	15.6	8.7
06326500	Powder River near Locate	11	5.3	13.5	254	2.7	15.7	8.6
06329500	Yellowstone River near Sidney	11	8.1	12.4	419	4.4	15.0	9.1
12301933	Kootenai River below Libby Dam, near Libby	9	8.3	12.2	448	6.9	18.3	10.8
12352500	Bitterroot River near Missoula	0	--	--	33	8.2	15.2	10.6
Dissolved nitrite plus nitrate, in milligrams per liter as nitrogen								
06089000	Sun River near Vaughn	9	.157	.980	346	<.01	4.7	.62
06178500	East Poplar River at international boundary	4	<.016	.091	65	<.01	.29	.07
06185500	Missouri River near Culbertson	8	<.016	.213	165	<.005	.38	.005
06308500	Tongue River at Miles City	10	<.016	.520	141	<.02	.97	.04
06326500	Powder River near Locate	11	<.016	.505	156	<.01	1.8	.27
06329500	Yellowstone River near Sidney	11	<.06	.570	246	<.005	.73	.20
12301933	Kootenai River below Libby Dam, near Libby	9	.057	.127	310	<.05	.79	.10
12352500	Bitterroot River near Missoula	4	.012	.072	40	<.005	.17	.03
Total phosphorus, in milligrams per liter as phosphorus								
06089000	Sun River near Vaughn	9	.008	.14	120	<.01	.64	.03
06178500	East Poplar River at international boundary	4	.04	.09	269	<.01	.40	.03
06185500	Missouri River near Culbertson	8	.12	1.0	225	.01	.93	.09
06308500	Tongue River at Miles City	10	.006	2.6	167	<.01	1.9	.04
06326500	Powder River near Locate	11	.005	3.0	219	.008	26	.18
06329500	Yellowstone River near Sidney	11	.018	1.1	377	<.01	2.7	.09
12301933	Kootenai River below Libby Dam, near Libby	9	<.004	.006	523	<.001	.26	.008
12352500	Bitterroot River near Missoula	4	.005	.034	40	.004	.18	.021
Suspended sediment, in milligrams per liter								
06089000	Sun River near Vaughn	9	11	99	121	8	910	57
06178500	East Poplar River at international boundary	4	40	160	233	4	322	55
06185500	Missouri River near Culbertson	8	129	1,540	186	19	2,370	240
06308500	Tongue River at Miles City	16	14	4,560	178	5	14,000	86
06326500	Powder River near Locate	12	42	8,320	247	8	41,400	1,120
06329500	Yellowstone River near Sidney	18	14	2,230	361	10	15,500	307
12301933	Kootenai River below Libby Dam, near Libby	6	1	1	23	1	3	2
12352500	Bitterroot River near Missoula	4	2	25	42	1	186	9

GROUND WATER

Ground-Water Levels

Water levels were measured in 51 observation wells during water year 2004. Measurements in 24 wells in Lewis and Clark County were discontinued in August. Water levels in most of the observation wells primarily reflect the response of the ground-water system in the area to natural climatic conditions. However, several wells are within the zone of influence of human activities, and water levels in these wells can be affected by pumping or infiltration of applied irrigation water. Seventeen of the 51 observation wells are equipped with continuous water-level recorders and have varying lengths of record. One of the continuous recorders also provides near real-time data delivery with water-level data collected hourly and transmitted every 4 hours via satellite for display as part of the USGS National Water Information System program (accessed at *http://waterdata.usgs.gov/nwis)*. Discrete data values from the continuous recorders are not presented in this report but are available at the USGS Montana District Office in Helena.

Water levels commonly fluctuate throughout the year and from year to year as a result of changes in climatic conditions or human activities. Little or no water was released to irrigation canals near wells 08S09W01CCCC01(in Beaverhead County) and 23N24W34ADAA01 (in Sanders County) during water year 2004, resulting in reduced annual fluctuation of water levels in these two wells.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for water year 2004 that began October 1, 2003, and ended September 30, 2004. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 6 through 8. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation

DOWNSTREAM ORDER AND STATION NUMBER

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

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

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as “01,” “02,” and so forth, would be assigned as one would for wells (see fig. 4). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

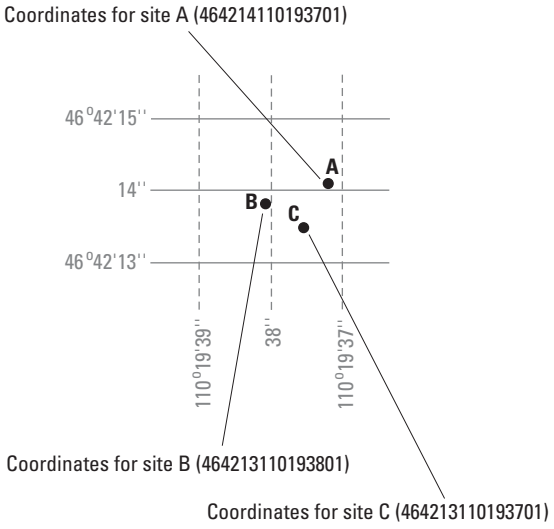


Figure 4. System for numbering wells and miscellaneous sites (latitude and longitude).

In addition to the well number that is based on latitude and longitude given for each well, another well number may be provided which in many States is based on the Public Land Survey System, a set of rectangular surveys that is used to identify land parcels. The location number consists of as many as 14 characters. The first three characters specify the township and its position south (S) or north (N) of the Montana Base Line. The next three characters specify the range and its position east (E) or west (W) of the Montana Principal Meridian. The next two characters are the section number. The next three to four characters designate the quarter section (160-acre tract), the quarter-quarter section (40-acre tract), the quarter-quarter-quarter section (10-acre tract), the quarter-quarter-quarter-quarter tract (2.5-acre tract), respectively, in which the well is located. The four subdivisions of the section are designated A, B, C, and D in a counter-clockwise direction, beginning in the northeastern quadrant. The last two characters in the location number specify a sequence number to distinguish between multiple wells in a single tract. For example, as shown in figure 5, well 30N33W05ABAB01 is the first well inventoried in the $NW^1/_4$ (B) of the $NE^1/_4$ (A) of the $NW^1/_4$ (B) of the $NE^1/_4$ (A) of section 5, in township 30 north, range 33 west.

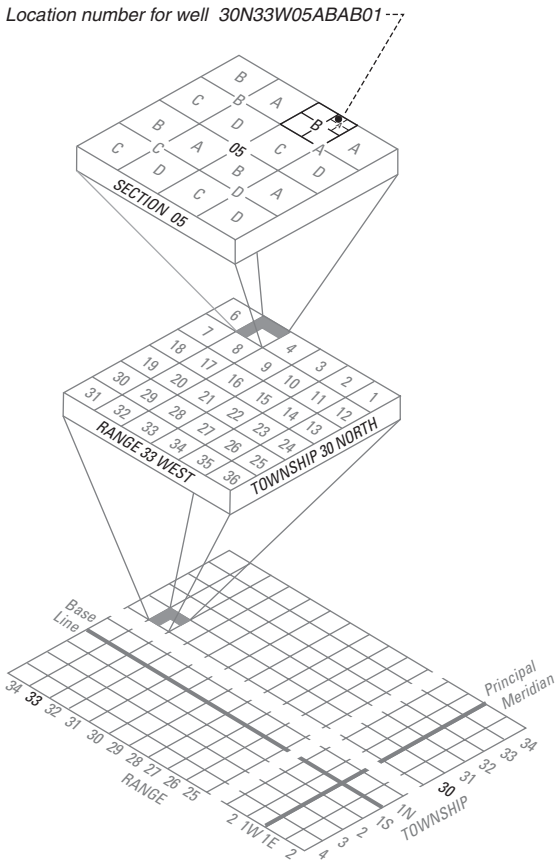


Figure 5. System for numbering wells and miscellaneous sites (township and range).

SPECIAL NETWORKS AND PROGRAMS

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

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

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

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

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

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

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

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (fig. 6) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or

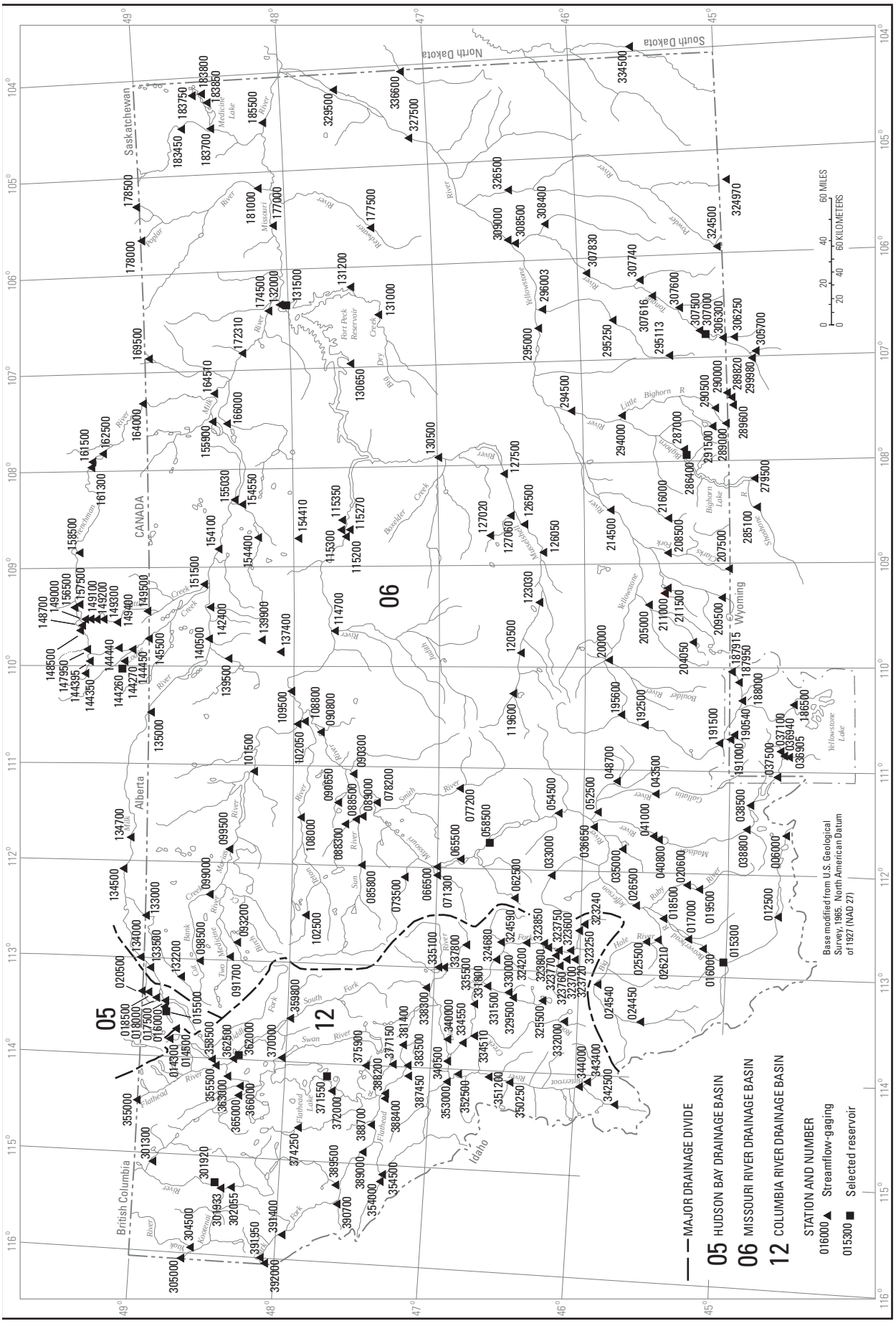


Figure 6. Location of streamflow-gaging and selected reservoir stations in Montana and adjacent areas, water year 2004.

volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2, which may be accessed from *http://water.usgs.gov/pubs/twri/*. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standardization (ISO).

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

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

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

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

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

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

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

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

Data Presentation

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

data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

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

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for most stations, were determined by methods given in Montana Department of Natural Resources and Conservation River Mile Index.[6,7,8]

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

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

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

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

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

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

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

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

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

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the

6. Montana Department of Natural Resources and Conservation, 1976, River mile index of the Yellowstone River: Helena, Mont., 61 p.
7. Montana Department of Natural Resources and Conservation, 1979, River mile index of the Missouri River: Helena, Mont., 142 p.
8. Montana Department of Natural Resources and Conservation, 1984, River mile index of the Columbia River basin: Helena, Mont., p. 1-76.

REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Data Table of Daily Mean Values

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

Statistics of Monthly Mean Data

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

Summary Statistics

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

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

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

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

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

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

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

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

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

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual

7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

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

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

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

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

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

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of Field Data and Computed Results

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

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

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

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

occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

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

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

Publications

The annual series of Water-Supply Papers that give information on quantity of surface waters in Montana are given in table 7. Data for the Hudson Bay basin is given in Part 5, for the Missouri River basin in Part 6, and for the Columbia River basin in Part 12.

Table 7. Water-Supply Paper numbers and parts for surface-water stations, 1899-1970.

Year	Part 5	Part 6	Part 12	Year	Part 5	Part 6	Part 12
1899		36,37	38				
1900	49	49	51,52				
1901	66,75	66,75	66,75	1926	625	626	632
1902	83,85	84	85	1927	645	646	652
1903	98,99,100	99	100	1928	665	666	672
1904	130	130	135	1929	685	686	692
1905	171	172	178	1930	700	701	707
1906	207	208	214	1931	715	716	722
1907	245	246	252	1932	730	731	737
1908	245	246	252	1933	745	746	752
1909	265	266	272	1934	760	761	767
1910	285	286	292	1935	785	786	792
1911	305	306	312	1936	805	806	812
1912	325	326	332A	1937	825	826	832
1913	355	356	362A	1938	855	856	862
1914	385	386	392	1939	875	876	882
1915	405	406	412	1940	895	896	902
1916	435	436	442	1941	925	926	932
1917	455	456	462	1942	955	956	962
1918	475	476	482	1943	975	976	982
1919	505	506	512	1944	1005	1006	1012
1920	505	506	512	1945	1035	1036	1042
1921	525	526	532	1946	1055	1056	1062
1922	545	546	552	1947	1085	1086	1092
1923	565	566	572	1948	1115	1116	1122
1924	585	586	592	1949	1145	1146	1152
1925	605	606	612	1950	1175	1176	1182

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Table 7. Water-Supply Paper numbers and parts for surface-water stations, 1899-1970--Continued.

Year	Part 5	Part 6	Part 12	Year	Part 5	Part 6	Part 12
1951	1208	1209	1216	1961-65	1913	1916	1933
1952	1238	1239	1246	1966-70	2113	2116	2133
1953	1278	1279	1286				
1954	1338	1339	1346	1950 Compilation	1308	1309	1316
1955	1388	1389	1396				
1956	1438	1439	1446	1960 Compilation	1728	1729	1736
1957	1508	1509	1516				
1958	1558	1559	1566				
1959	1628	1629	1636				
1960	1708	1709	1716				

EXPLANATION OF PRECIPITATION RECORDS

Data Collection and Computation

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

Data Presentation

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

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

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

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

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

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

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

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

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

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

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

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

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

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2359 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

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

Classification of Records

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

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 7.

Accuracy of the Records

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

Table 8. Rating classifications for continuous water-quality records.

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

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

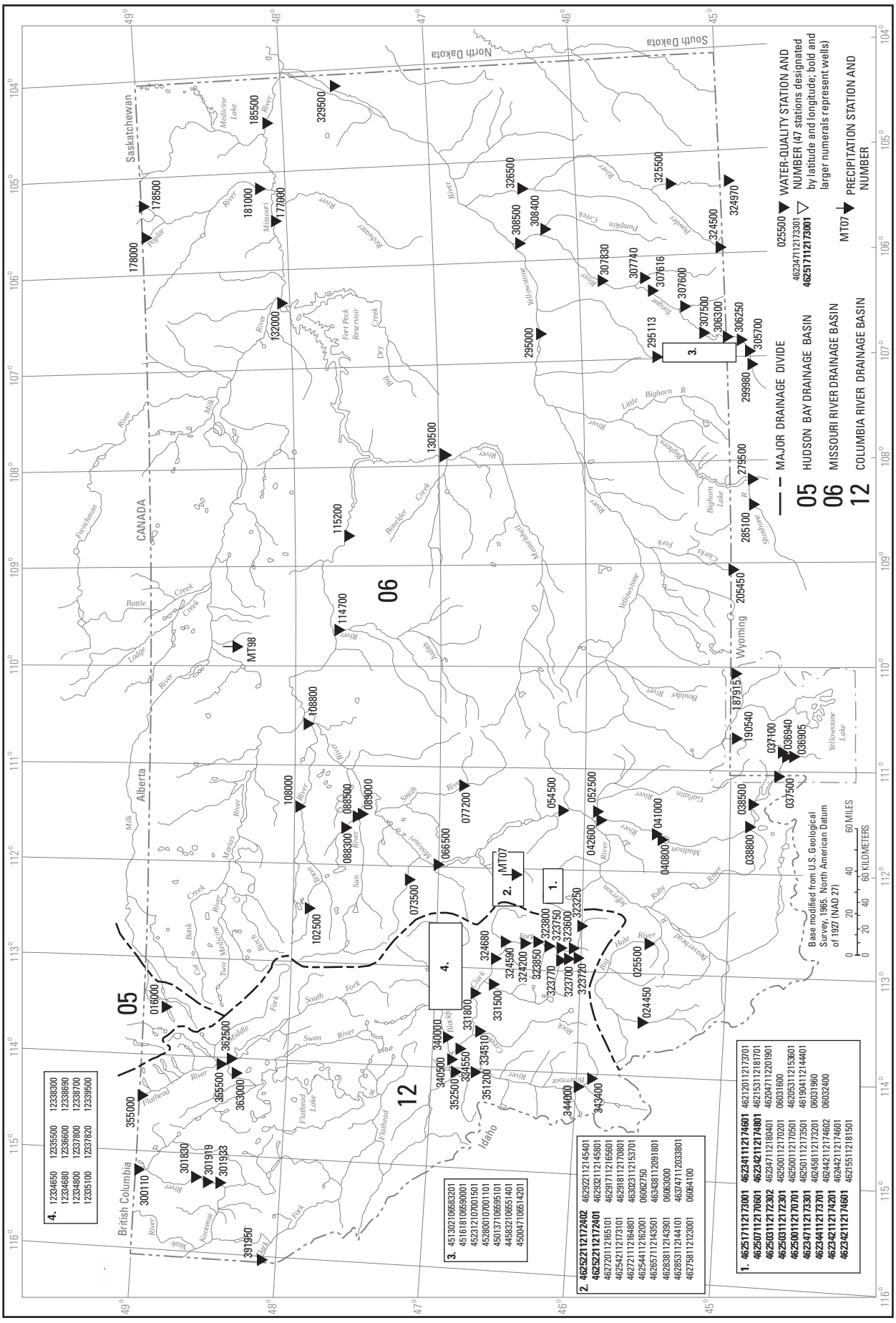

Figure 7. Location of water-quality and precipitation stations in Montana and adjacent areas, water year 2004.

Arrangement of Records

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

On-Site Measurements and Sample Collection

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

Water Temperature

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

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

Sediment

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

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

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

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

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. The TWRI publications may be accessed from

http://water.usgs.gov/pubs/twri/. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

Remark Codes

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

Printed Output	Remark
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method

detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

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

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

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

Blank Samples

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

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

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

Replicate Samples

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

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

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

Publications

The annual series of Water-Supply Papers that gives information on quality of surface waters in Montana is shown in the following table. Data for Hudson Bay and Missouri River basins are given in parts 5-6 and data for Upper Columbia River basin are given in part 12.

Table 9. Water-Supply Paper numbers and parts for water-quality stations, 1947-70.

Year	Parts 5-6	Part 12	Year	Parts 5-6	Part 12
1946	1050	---	1961	1883	1885
1947	1102	---	1962	1943	1945
1948	1132	---	1963	1949	1951
1949	1162	1163	1964	1956	1959
1950	1187	1189	1965	1963	1966
1951	1198	1200	1966	1993	1996
1952	1251	1253	1967	2013	2016
1953	1291	1293	1968	2094, 2095	2100
1954	1351	1353	1969	2145	2150
1955	1401	1403	1970	2155	2160
1956	1451	1453			
1957	1521	1523			
1958	1572	1574			
1959	1643	1645			
1960	1743	1745			

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

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

Site Identification Numbers

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

Data Collection and Computation

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

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

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface

at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

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

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 8.

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

The following comments clarify information presented in these various headings.

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

HYDROGEOLOGIC UNIT.—This entry designates by name and geologic age the aquifer that the well taps.

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

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

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

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

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

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

Water-Level Tables

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

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

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water

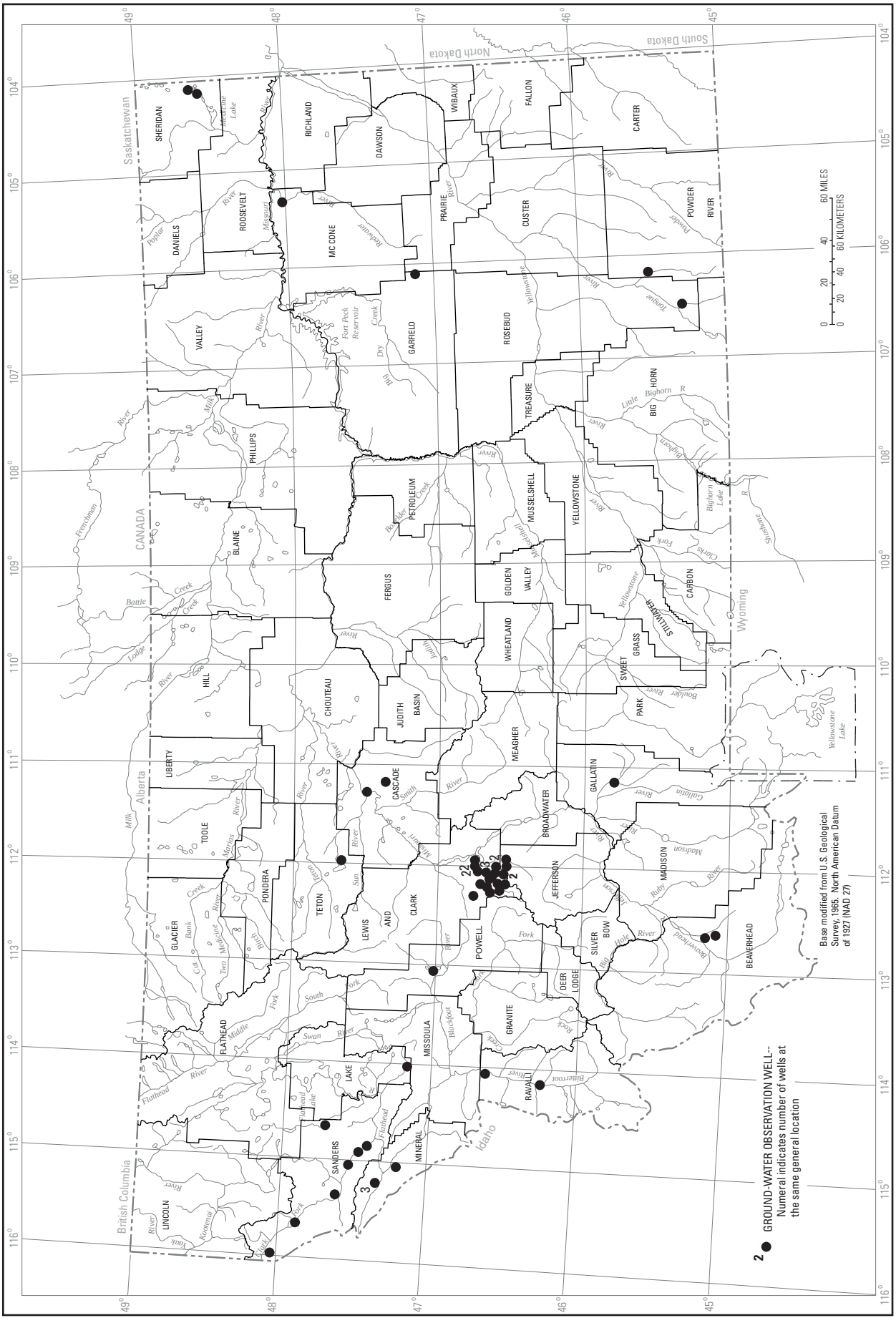

Figure 8. Location of ground-water observation wells in Montana, water year 2004.

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

GROUND-WATER-QUALITY DATA

Data Collection and Computation

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

Most methods for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 5, Chapters A1, A3, and A4; and Book 9, Chapters A1-A6. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; and Book 5, Chapters A1, A3, and A4, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

Publications

Publication of ground-water level data for the United States in Water-Supply Papers was begun by the USGS in 1935. From 1935 through 1939, a single Water-Supply Paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate Water-Supply Papers were issued for 6 sections of the United States. Water-level data for Montana are in the Water-Supply Papers listed in the following table, each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30. Information about reports and other data on ground water in Montana may be obtained from the District office, at the address given on the back of the title page.

Table 10. Water-Supply Paper numbers and parts for ground-water stations, 1940-74.

Year	WSP No. Pt. 5	Year	WSP No. Pt. 5	Year	WSP No. Pt.5
1940	910	1947	1100	1954	1325
1941	940	1948	1130	1955	1408
1942	948	1949	1160	1956-60	1760
1943	990	1950	1169	1961-65	1845
1944	1020	1951	1195	1966-70	1980
1945	1027	1952	1225	1971-74	2161
1946	1075	1953	1269		

ACCESS TO USGS WATER DATA

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

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

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bottom material (See "Bed material")

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

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

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

sphere $4/3\ \pi r^3$ cone $1/3\ \pi r^2 h$ cylinder $\pi r^2 h$.

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

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

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

Cfs-day (See "Cubic foot per second-day")

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

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an

approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells

per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (mm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter (mm^3/cm^2). (See also "Phytoplankton" and "Periphyton")

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

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

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

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

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4917 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

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

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

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

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

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

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

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

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

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41°C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococ-*

cus feacium, Streptococcus avium, and their variants. (See also "Bacteria")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Horizontal datum (See "Datum")

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

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

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

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

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monu-

ments along the United States-Canada boundary by the International Boundary Commission.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

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

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

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

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

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

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

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

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea

level at any particular place. See NOAA Web site: *http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic

matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time

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

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

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

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

Recoverable is the amount of a given constituent that is in solution after a representative water sample has been extracted or digested. Complete recovery is not achieved by the extraction or digestion and thus the determination represents something less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also "Bed material")

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

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

Return period (See "Recurrence interval")

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

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

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

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as

mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

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

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

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

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

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

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

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

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

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

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

Stage (See "Gage height")

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

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

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below

are the class categories expressed as the percentage covered by fine sediment:

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

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

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

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

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

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

Suspended sediment is sediment carried in suspension by the turbulent components of the fluid or by the Brownian movement (a law of physics). (See also "Sediment")

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

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

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

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

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

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

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

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning

with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom:	Animal
Phylum:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

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

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

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

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

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

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

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

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

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

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

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

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

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than

95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Vertical datum (See "Datum")

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

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

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

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

Watershed (See "Drainage basin")

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

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

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

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

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

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

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)

[P, present; --, no data]

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 5--Hudson Bay Basin							
05010000	Belly River at international boundary	74.8	1947-64	1948-64	--	--	--	--	--	--
05010500	North Fork Belly River at international boundary	10.1	1947-55	1948-55	--	--	--	--	--	--
05010700	Mountain View Irrigation District Canal near Mtn. View, Alberta	--	1935-78	--	--	--	--	--	--	--
05011000	Belly River near Mountain View, Alberta	121	1912-78	1912-78	--	--	--	--	--	--
05011500	Waterton River near international boundary	61.0	1947-64	1948-64	--	--	--	--	--	--
05012000	Street Creek at international boundary	6.0	1948-55	1948-55, 1964	--	--	--	--	--	--
05012500	Boundary Creek at international boundary	21.0	1948-64	1948-64	--	--	--	--	--	--
05013000	Waterton River near Waterton Park, Alberta	238	1908-33, 1948-78	1908-30, 1933, 1948-78	--	--	--	--	--	--
05013500	St. Mary Lake near St. Mary	130	1929-61	--	--	--	--	--	--	--
05013600	St. Mary River near St. Mary	130	1961-62	--	--	--	--	--	--	--
05013700	St. Mary River above Swiftcurrent Creek, near Babb	173	1902-15	1902-15	--	--	--	--	--	--
05013900	Grinnell Creek at Grinnell Glacier, near Many Glacier	1.1	1959-71	1960-63, 1965-66, 1968-71	--	--	--	--	--	--
05014000	Grinnell Creek near Many Glacier	3.32	1949-78	1950-78	--	--	--	--	--	--
05014300	**Swiftcurrent Creek ab Swiftcurrent Lake, nr Many Glacier**		**2003-P**	**2003-P**						
05014500	**Swiftcurrent Creek at Many Glacier**	30.9	**1912-P**	**1913-P**	--	1966-69	--	--	1966	--
05015000	Canyon Creek near Many Glacier	7.1	1918-37	1919, 1921-27, 1929-31, 1934,1936	--	--	--	--	--	--
05015500	**Lake Sherburne at Sherburne**	64.1	**1915-P**	--	--	--	--	--	--	--
05016000	**Swiftcurrent Creek at Sherburne**	64.6	**1912-81, 1984-2004**	**1913-P**	--	--	--	1990-92	**1996-2004**	--
05016400	Swiftcurrent Creek at mouth, near Babb	--	--	--	--	--	--	--	1996	--
05016500	Swiftcurrent Creek near Babb	98.6	1902-10	1902, 1904-07, 1909	--	--	--	--	--	--
05017000	Lower St. Mary Lake near Babb	276	1929-55	--	--	--	--	--	--	--
05017500	**St. Mary River near Babb**	276	**1901-02, 1910-25, 1950-P**	**1902, 1911-25, 1951-P**	--	--	--	1965	--	--
05018000	**St. Mary Canal at intake, near Babb**	--	**1918-50, 1997-P**	--	--	--	--	--	--	--
05018500	**St. Mary Canal at St. Mary Crossing, near Babb**	--	**1918-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 5--Hudson Bay Basin--Continued							
05019000	St. Mary Canal at Hudson Bay Divide, near Browning	--	1917-66	--	--	--	--	1965, 1981-83	--	--
05019500	St. Mary River below St. Mary Canal, near Babb	286	1929-50	1929-33, 1935-50	--	--	--	--	--	--
05020000	Kennedy Creek near Babb	60.8	1905	1964,1975	--	--	--	--	--	--
05020500	**St. Mary River at international boundary**	465	**1902-P**	**1903-P**	1978-81	1978-79	--	1978-93	1978-93	1978-93
			Part 6--Missouri River Basin							
06006000	**Red Rock Creek above Lakes, near Lakeview**	39.2	**1997-P**	**1997-P**	--	--	--	--	--	--
06007000	Tom Creek near Lakeview	6.43	1989	1989	--	--	--	--	--	--
06008000	Odell Creek above Taft Ranch, near Lakeview	17.7	1993-98	1994-98	--	--	--	--	--	--
06010000	Red Rock River near Lakeview	237	1933-37	--	--	--	--	--	--	--
06010500	Red Rock River at Metzel Fork, near Monida	264	1925-29	--	--	--	--	--	--	--
06010600	Red Rock River at Brundage Bridge, near Lakeview	277	1988-89	1989	--	--	--	--	--	--
06011000	Red Rock River at Kennedy Ranch, near Lakeview	323	1936-67	1937-42, 1945-54, 1956-67, 1984	--	--	--	--	--	--
06011400	Long Creek near Lakeview	36	--	1960-67, 1969,1984	--	--	--	--	--	--
06011500	Red Rock River above Lima Reservoir, near Monida	431	1911, 1914-18, 1925,1930	--	--	--	--	--	--	--
06011900	Red Rock River tributary near Monida	0.37	--	1960-67, 1984	--	--	--	--	--	--
06012000	**Lima Reservoir near Monida**	570	**1940-P**	--	--	--	--	--	--	--
06012500	**Red Rock River below Lima Reservoir, near Monida**	570	**1911-19, 1925-69, 1974-82, 1985-P**	**1912-18, 1926-69, 1974-82, 1985-P**	--	--	--	--	--	--
06013000	Red Rock River at Lima	602	1907-11	--	--	--	--	--	--	--
06013200	Traux Creek near Lima	4.06	--	1960-74, 1984	--	--	--	--	--	--
06013400	Muddy Creek near Dell	63.4	--	1960-74, 1984	--	--	--	--	--	--
06013500	Big Sheep Creek below Muddy Creek, near Dell	278	1936, 1946-53, 1977-79	1946-53, 1960-91	--	1977-79	1977-79	--	1977-79	--
06013900	Sage Creek tributary near Dell	0.34	--	1959-67	--	--	--	--	--	--
06014000	Red Rock River near Dell	1,421	1942-67	1943-67	--	--	--	--	--	--
06014500	Red Rock River at Red Rock	1,548	1890, 1951-52, 1974-83	1974-83	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06015000	Horse Prairie Creek near Grant	325	1946-53	1946-53	--	--	--	--	--	--
06015300	**Clark Canyon Reservoir near Grant**	2,321	**1964-P**	--	--	--	--	--	--	--
06015400	Beaverhead River near Grant	2,322	1962-83	1963-83	--	--	--	--	--	--
06015430	**Clark Canyon near Dillon**	18.0	--	**1969, 1974-P**	--	--	--	--	--	--
06015460	**Farlin Creek near Polaris, MT**	5.46	--	**2003-P**	--	--	--	--	--	--
06015480	**Grasshopper Creek tributary near Dillon**	0.80	--	**2003-P**	--	--	--	--	--	--
06015500	Grasshopper Creek near Dillon	348	1921-33, 1946-54, 1955-58, 1960-61	1921-32, 1946-53, 1955-58, 1960-73, 1975	--	--	--	1986	--	--
06016000	**Beaverhead River at Barretts**	2,737	**1907-P**	**1908-P**	1965-78	1965-78	--	1965-78, 1986		--
06016500	Rattlesnake Creek near Dillon	23.9	1946-49	--	--	--	--	--	--	--
06016900	Beaverhead River tributary near Dillon	0.93	--	1960-74	--	--	--	--	--	--
06017000	**Beaverhead River at Dillon**	2,895	**1950-52, 1963-71 2002-P**	**1951-52, 1964-71 2002-P**	--	--	--	--	--	--
06017500	Blacktail Deer Creek near Dillon	312	1946-54, 1955-66	1946-53, 1955-66, 1984	--	--	--	--	--	--
06017600	Blacktail Deer Creek at Dillon	--	--	--	--	--	--	1986	--	--
06018000	Beaverhead River near Dillon	3,484	1951-52, 1963-83	1951-52, 1964-83	--	--	--	--	--	--
06018200	Beaverhead River tributary No. 2 near Dillon	0.88	--	1958-65	--	--	--	--	--	--
06018500	**Beaverhead River near Twin Bridges**	3,619	**1935-P**	**1936-44, 1946-P**	--	2001-03	1962-74	1950-51, 1962-81, 1986, 1999-2003	1999-2003	--
06019000	Ruby River above Warm Springs Creek, near Alder	145	1948-53	1948-53	--	--	--	--	--	--
06019400	Sweetwater Creek near Alder	81.5	--	1974-91	--	--	--	--	--	--
06019500	**Ruby River above reservoir, near Alder**	534	**1938-P**	**1939-P**	--	--	--	--	1994	--
06019800	Idaho Creek near Alder	11.0	--	1960-85	--	--	--	--	--	--
06020000	Ruby River at damsite, near Alder	592	1911-14, 1935-37	--	--	--	--	--	--	--
06020600	**Ruby River below reservoir, near Alder**	596	**1962-P**	**1963-P**	--	--	--	--	1994	--
06021000	Ruby River near Alder	614	1929-39, 1946-61	1929-39, 1947-60	--	--	--	--	--	--
06021500	Ruby River at Laurin	650	1946-61	1947-60	--	--	--	--	--	--
06022000	Ruby River below Ramshorn Creek, near Sheridan	843	1946-53	1947-53	--	--	--	--	--	--
06022500	Ruby River near Sheridan	863	1946-51	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06023000	Ruby River near Twin Bridges	935	1940-43, 1946-65, 1979-81	1942-73, 1947-65, 1980-81	--	1979-81	--	1986	1965	--
06023500	Big Hole River near Jackson	44.0	1948-54	1948-53	--	--	--	--	--	--
06024000	Miner Creek near Jackson	17.6	1948-54	1948-53	--	--	--	--	--	--
06024100	**Fox Gulch near Jackson**	3.32	--	**2003-P**	--	--	--	--	--	--
06024450	**Big Hole River below Big Lake Creek, at Wisdom**	575	**1988-P**	**1988-P**	--	**1988-P**	--	--	--	--
06024470	Swamp Creek near Wisdom	66.1	1995-96	1995-96	--	--	--	--	--	--
06024500	Trail Creek near Wisdom	71.4	1948-54, 1966-72	1948-53, 1967-72	--	--	--	--	--	--
06024510	West Fork Ruby Creek near Wisdom	13.4	1995-96	1995-96	--	--	--	--	--	--
06024540	**Big Hole River below Mudd Creek, near Wisdom**	1,267	**1997-P**	**1998-P**	--	--	--	--	--	--
06024580	Big Hole River near Wise River	1,611	1979-81	1980-81	--	--	--	--	--	--
06024590	Wise River near Wise River	214	1973-85	1973-85	--	--	--	--	--	--
06025000	Big Hole River near Dewey	1,990	1910-13	--	--	--	--	--	--	--
06025100	**Quartz Hill Gulch near Wise River**	14.3	--	**1974-P**	--	--	--	--	--	--
06025250	Big Hole River at Maiden Rock, near Divide	2,199	1997-2002	1998-2002	--	--	--	--	--	--
06025270	Moose Creek above McClean Creek, near Divide	31.9	1998-99	1998-99	--	--	--	--	--	--
06025300	Moose Creek near Divide	42.3	--	1960-74	--	--	--	--	--	--
06025480	Rock Creek below Browns Lake, near Glen	23.0	1998-99	1998-99	--	--	--	--	--	--
06025500	**Big Hole River near Melrose**	2,476	**1923-P**	**1924-40, 1942-P**	--	**1960-64, 1977-P**	1960-64	1957, 1961, 1961-64	--	--
06025700	Willow Creek diversions to Birch Creek, near Glen	--	1946-53, 1955-66	--	--	--	--	--	--	--
06025800	Willow Creek near Glen	35.6	1962-66, 1997-99	1998-99	--	--	--	1963-65	1964-65	--
06026000	Birch Creek near Glen	36.0	1946-53, 1955-76	1946-53, 1955-76	--	--	--	1959-62	1960-61	--
06026210	**Big Hole River near Glen**	2,655	**1997-P**	**1998-P**	--	--	--	--	--	--
06026400	Big Hole River near Twin Bridges	2,762	1979-81	1980-81	--	--	--	1986	--	--
06026500	**Jefferson River near Twin Bridges**	7,632	**1940-43, 1958-72, 1994-P**	**1942-43, 1958-72, 1994-P**	--	1994-2002	1960-62, 1965-72	1958-62, 1965-72	1971-72	--
06027000	Jefferson River near Silver Star	7,683	1910-16, 1920-39	1911-16, 1921-39, 1966	--	--	--	--	--	--
06027200	Jefferson River at Silver Star	7,683	1972-74	1973-74	--	--	--	1973-74	1974	--
06027500	Bell Creek near Waterloo	5.63	1941-42	--	--	--	--	--	--	--
06027700	Fish Creek near Silver Star	38.9	1959-91	1959-91	--	--	--	--	--	--
06028000	Big Pipestone Creek near Whitehall	108	1910-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06028500	Little Pipestone Creek near Whitehall	30.7	1935-40	1935-40	--	--	--	--	--	--
06028700	Big Pipestone Creek at Whitehall	--	--	--	--	--	--	1986	--	--
06029000	Whitetail Creek near Whitehall	30.8	1949-68	1950-53, 1955-68, 1981	--	--	--	--	--	--
06029500	Little Whitetail Creek near Whitetail	91.0	1911	--	--	--	--	--	--	--
06030000	Whitetail Creek at Whitehall	179	1911	--	--	--	--	--	--	--
06030200	Jefferson River tributary near Whitehall	1.85	--	1960-75	--	--	--	--	--	--
06030300	**Jefferson River tributary No. 2 near Whitehall**	4.50	--	**1958-P**	--	--	--	--	--	--
06030500	Boulder River above Rock Creek, near Basin	19.4	1936, 1946-53, 1955-57	1947-53, 1955-57, 1975,1981	--	--	--	--	--	--
06031000	Rock Creek at CCC Camp, near Bernice	9.87	1936	--	--	--	--	--	--	--
06031450	**Boulder River above Kleinsmith Gulch, near Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06031500	Boulder River at Basin	219	1921-23	--	--	--	--	1997-99	1997-99	--
06031600	**Basin Creek at Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06031950	**Cataract Creek near Basin**	30.6	--	**1973-P**	--	--	--	1997-99	1997-99	--
06031960	**Cataract Creek at Basin**	--	--	--	--	--	--	**1997-P**	**1997-P**	--
06032000	Boulder River near Basin	292	1919-20	--	--	--	--	1997-99	1997-99	--
06032300	High Ore Creek near Basin	8.86	1997	1997	--	--	1997	1997-2002	1997-2002	--
06032400	**Boulder River below Little Galena Gulch near Boulder**	318	1997	1997	--	--	1997	**1997-P**	**1997-P**	--
06032500	Muskrat Creek near Boulder	6.09	1912-14	--	--	--	--	--	--	--
06033000	**Boulder River near Boulder**	381	**1929-72, 1985-P**	**1929-72, 1975,1981, 1985-P**	--	--	--	1997-99	1997-99	--
06033500	North Fork Little Boulder River near Boulder	18.8	1926-27	--	--	--	--	--	--	--
06033900	Boulder River near Cardwell	756	--	--	--	--		1986	1997	--
06034000	South Boulder River near Jefferson Island	27.5	1926-33	1926-33	--	--	--	--	--	--
06034300	South Boulder River near Cardwell	--	--	--	--	--	--	1986	--	--
06034500	Jefferson River at Sappington	9,277	1895-1905, 1938-69	1895-1905, 1939-69, 1975	--	--	--	--	--	--
06034700	Sand Creek at Sappington	9.41	--	1960-74	--	--	--	--	--	--
06034800	Jefferson River tributary No. 3 near Sappington	1.14	--	1960-74	--	--	--	--	--	--
06035000	**Willow Creek near Harrison**	83.8	**1938-2002, 2004**	**1938-2002, 2004**	--	**2002-P**	--	--	--	--
06035500	Norwegian Creek near Harrison	22.4	1938-43, 1946-51	1938-43, 1947-51	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06036500	Willow Creek near Willow Creek	165	1919-33, 1946-53, 1955-57	1920-29, 1931-32, 1947-53, 1955-56	--	--	--	1986	--	--
06036600	Jefferson River tributary No. 4 near Three Forks	0.53	--	1960-74, 1982-83	--	--	--	--	--	--
06036650	**Jefferson River near Three Forks**	9,532	**1978-P**	**1979-P**	--	1980-81 2000-2003	--	1986-87, 1999-2003	1999-2003	--
06036700	Jefferson River tributary No. 5 near Three Forks	3.69	--	1960-73, 1980, 1982-83	--	--	--	--	--	--
06036800	Firehole River near Old Faithful, Yellowstone National Park	--	--	--	--	--	--	1958	--	--
06036905	**Firehole River near West Yellowstone**	282	**1984-96 2003-P**	**1984-96 2003-P**	1983-88	**1983-93 2003-P**	--	1987,1989	--	--
06036940	**Tantalus Creek at Norris Junction, Yellowstone National Park**	1.29	**2004**	**2004**	--	**2004**	--	--	--	--
06037000	Gibbon River near West Yellowstone	118	1913-16, 1984-96	1984-96	1983-88	1983-93	--	1987, 1989	--	--
06037100	**Gibbon River at Madison Junction, Yellowstone Nat'l Park**	126	**2003-P**	**2003-P**	--	**2003-P**	--	--	--	--
06037500	**Madison River near West Yellowstone**	420	**1913-73, 1983-86, 1989-P**	**1914-17, 1919-73, 1984-86, 1989-P**	1983-86	1983-86	--	**1959, 1986-95 2004**	1989-90 1992-95	--
06037600	Madison River above Hebgen Lake, near West Yellowstone	--	--	--	--	--	--	1993-94	1993-94	--
06037700	South Fork Madison River above Denny Creek, near West Yellowstone	--	--	--	--	--	--	1987-88	--	--
06038000	**Hebgen Lake near Grayling**	904	**1936-P**	--	--	--	--	--	--	--
06038500	**Madison River below Hebgen Lake, near Grayling**	905	**1909-P**	**1940-P**	--	--	--	**1986-95 2004**	1992-95	--
06038550	**Cabin Creek near West Yellowstone**	30.3	--	**1974-P**	--	--	--	--	--	--
06038800	**Madison River at Kirby Ranch, near Cameron**	1,065	**1959-63, 1978-P**	**1960-61, 1963, 1985-P**	--	1995-2002	1960	**1959, 2004**	1959-60	--
06039000	West Fork Madison River near Lakeview	11.9	1936	--	--	--	--	--	--	--
06039200	West Fork Madison River near Cameron	220	1965-67	1966-67	--	--	--	1986-88	--	--
06039500	Madison River at Lyon	1,346	1928-32	--	--	--	--	1959	--	--
06040000	Madison River near Cameron	1,669	1952-63, 1968-70	1952-58, 1960-63, 1968-70	--	--	--	1988, 1993-95	1993-95	--
06040010	Blaine Spring Creek near Cameron	3.42	1971-72	--	--	--	--	--	--	--
06040300	Jack Creek near Ennis	51.5	1973-86, 1992	1974-86, 1991-92	--	--	--	1980	--	--
06040400	Meadow Creek near McAllister	--	--	--	--	--	--	1986	--	--
06040500	**Ennis Lake near McAllister**	2,181	**1936-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06040800	**Madison River above powerplant, near McAllister**	4,690	**2002-P**	**2002-P**	--	--	--	**2004**	--	--
06041000	**Madison River below Ennis Lake, near McAllister**	2,186	**1901-P**	**1943-P**	--	**1977-P**	--	1972-73, 1986-87, 1991-95	1991-95	1972-73
06041300	Hot Springs Creek near Norris	72.5	--	--	--	--	--	1986-87, 1993-94	1993-94	--
06041500	Madison River near Norris	2,288	1890-93, 1910	--	--	--	--	1993-95	1993-95	--
06041700	Cherry Creek near Norris	--	--	--	--	--	--	1986-87, 1993-94	1993-94	--
06042000	Madison River below Cherry Creek, near Norris	2,387	1897-1905	1898-1905	--	--	--	--	--	--
06042500	Madison River near Three Forks	2,511	1893-97, 1928-32, 1941-50	1894-96 1929-32, 1942-50	--	--	--	--	--	--
06042600	**Madison River at Three Forks**	2,531	--	--	--	--	--	**1986-87 1990, 1993-95, 2004**	1990, 1993-95	--
06043000	Taylor Creek near Grayling	98.0	1946-54, 1955-57, 1966-67	1947-53, 1955-57, 1967	--	--	--	--	--	--
06043200	Squaw Creek near Gallatin Gateway	40.4	--	1959-75	--	--	--	--	--	--
06043300	**Logger Creek near Gallatin Gateway**	2.48	--	**1959-P**	--	--	--	--	--	--
06043500	**Gallatin River near Gallatin Gateway**	825	**1889-94, 1930-69, 1971-81, 1985-P**	**1890-94, 1931-81, 1985-P**	--	2001-2002	--	1949-51, 1986-87, 1998	--	1998
06044000	Gallatin River near Salesville	833	1895-1905, 1910-13, 1921-23	1896-1905, 1912-13, 1921-23	--	--	--	--	--	--
06044100	Wilson Creek near Gallatin Gateway	5.33	1952-53	--	--	--	--	--	--	--
06044200	West Fork Wilson Creek near Gallatin Gateway	3.81	1952-53	--	--	--	--	--	--	--
06044300	Big Bear Creek near Gallatin Gateway	13.2	1952-53	--	--	--	--	--	--	--
06044400	Little Bear Creek near Gallatin Gateway	3.87	1952-53	--	--	--	--	--	--	--
06044500	South Cottonwood Creek near Gallatin Gateway	21.9	1951-53	--	--	--	--	--	--	--
06045000	Gallatin River at Axtell Bridge, near Gallatin Gateway	927	1950-54	--	--	--	--	--	--	--
06045200	Fish Creek near Gallatin Gateway	--	1952-53	--	--	--	--	--	--	--
06045300	Yellow Dog Creek near Belgrade	6.85	1952-53	--	--	--	--	--	--	--
06045350	Godfrey Creek near Belgrade	6.32	1952-53	--	--	--	--	--	--	--
06045400	Baker Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06045500	Gallatin River near Belgrade	965	1950-54	--	--	--	--	1949	--	--
06046000	Gallatin River near Manhattan	970	1950-54	--	--	--	--	1949	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06046100	Ridgley Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06046200	Gallatin River above Camp Creek, near Manhattan	--	--	--	--	--	--	1949	--	--
06046300	Camp Creek near Belgrade	34.5	1952-53	--	--	--	--	--	--	--
06046400	Randall Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06046500	Rocky Creek near Bozeman	50.5	1951-53	1952-53, 1959-91	--	--	--	1949	--	--
06046520	Unnamed Creek near Bozeman	2.63	--	1997-2002	--	--	--	--	--	--
06046700	Pitcher Creek near Bozeman	2.33	--	1960-75, 1981	--	--	--	--	--	--
06047000	Bear Canyon near Bozeman	17.0	1951-53	1952-53, 1959-73, 1975,1981	--	--	--	--	--	--
06047500	Sourdough Creek near Bozeman	28.2	1951-53	--	--	--	--	--	--	--
06048000	East Gallatin River at Bozeman	148	1939-61	1940-61, 1981	--	--	--	1949,1951	--	--
06048500	Bridger Creek near Bozeman	62.5	1946-69, 1971-72, 1987	1946-69, 1971-72, 1981,1987	--	--	--	1949	--	--
06048600	Lyman Creek near Bozeman	1.75	1952-53	--	--	--	--	1949	--	--
06048700	**East Gallatin River below Bridger Creek, near Bozeman**	226	**2002-P**	**2002-P**	--	2002	--	--	--	--
06048800	Deer Creek near Bozeman	--	1953	--	--	--	--	--	--	--
06048900	East Gallatin River near Belgrade	--	1952-53	--	--	--	--	--	--	--
06049000	Middle Cottonwood Creek near Bozeman	4.25	1951-53	--	--	--	--	--	--	--
06050000	Hyalite Creek at Hyalite Ranger Station, near Bozeman	48.2	1895-96, 1898-1900, 1902,1904, 1935-95	1898-1899, 1902, 1935-95	--	--	--	1949	--	--
06050100	Hyalite Creek near Belgrade	--	1952	--	--	--	--	--	--	--
06050200	Bostwick Creek near Belgrade	5.04	1952-53	--	--	--	--	1949	--	--
06050400	Thompson Creek near Belgrade	--	1952-53	--	--	--	--	--	--	--
06050450	Ben Hart Creek near Belgrade	--	1952-53	--	--	--	--	--	--	--
06050500	Ross Creek near Belgrade	1.25	1951-53	--	--	--	--	1949,1951	--	--
06050700	Truman Creek near Belgrade	2.94	1952-53	--	--	--	--	--	--	--
06051000	Reese Creek near Belgrade	21.5	1951-53	--	--	--	--	--	--	--
06051200	Bear Creek near Belgrade	4.30	1952-53	--	--	--	--	--	--	--
06051300	Foster Creek near Belgrade	--	1953	--	--	--	--	--	--	--
06051500	Dry Creek at Andrus Ranch, near Manhattan	96.2	1952-53	--	--	--	--	--	--	--
06051700	Reynolds (Quagle) Creek near Manhattan	--	1953	--	--	--	--	--	--	--
06052000	Dry Creek at Brownell Ranch, near Manhattan	104	1951	--	--	--	--	--	--	--
06052050	Story Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06052100	Cowan Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06052200	Gibson Creek near Manhattan	--	1952-53	--	--	--	--	1949,1951	--	--
06052300	Bull Run Creek near Manhattan	--	1952-53	--	--	--	--	--	--	--
06052500	**Gallatin River at Logan**	1,795	**1893-1905, 1928-P**	**1895-1900, 1902-1905, 1929-33, 1935-P**	--	**1979-85, 2001-P**	--	1949,1951, 1957,1986, 1999-2003	1965, 1999-2003	--
06053000	Sixteenmile Creek at Ringling	79.0	1950-55	1951-55	--	--	--	--	--	--
06053050	**Lost Creek near Ringling**	9.59	--	**1974-P**	--	--	--	--	--	--
06053400	Sixteenmile Creek near Toston	--	--	--	--	--	--	1986	--	--
06053500	Broadwater East Canal near Toston	--	1941-49	--	--	--	--	--	--	--
06054000	Broadwater West Canal near Toston	--	1941-49	--	--	--	--	--	--	--
06054500	**Missouri River at Toston**	14,669	**1890-91, 1910-16, 1941-P**	**1890, 1910-16, 1941-P**	1973-81	**1949-53 1973-P**	1949-53	1949-51, 1972-95, 1999-2003	1965, 1973-95, 1999-2003	1972-94
06055000	Crow Creek near Townsend	48.6	1912-13	--	--	--	--	1950,1986, 1988-91	1989-90	--
06055500	Crow Creek near Radersburg	76.6	1901, 1919-29, 1966-72, 1989-90	1901, 1920-29, 1966-72, 1975,1981, 1989-90	--	--	--	--	--	--
06056200	Castle Creek tributary near Ringling	2.51	--	1960-74, 1981, 1989-90	--	--	--	--	--	--
06056300	**Cabin Creek near Townsend**	11.8	--	**1960-P**	--	--	--	--	--	--
06056500	Deep Creek near Townsend	65.4	1910-15	--	--	--	--	--	--	--
06056600	Deep Creek below North Fork Deep Creek, near Townsend	87.7	--	1959-73, 1975,1981, 1989-90	--	--	--	--	--	--
06057000	Missouri River near Townsend	15,343	1891-1904	1892-1903, 1964	--	--	--	--	--	--
06057400	Beaver Creek above Weasel Creek, near Winston	21.5	--	--	--	--	--	1950, 1988-91	1989-90	--
06057500	Lake Sewell near Helena	15,894	1936-53	--	--	--	--	--	--	--
06058000	Missouri River at Canyon Ferry	15,894	1889	--	--	--	--	--	--	--
06058500	**Canyon Ferry Lake near Helena**	15,904	**1953-P**	--	--	--	--	--	--	--
06058502	Missouri River below Canyon Ferry Dam, near Helena	15,904	--	--	1968-87	--	--	1968-87	--	--
06058700	Mitchell Gulch near East Helena	8.09	--	1959-2002	--	--	--	--	--	--
06058900	Prickly Pear Creek below Anderson Gulch, near Jefferson City	14.0	--	1989-90	--	--	--	1988-90	1989-90	--
06059000	Dutchman Creek near Alhambra	9.78	1921-24	--	--	--	--	--	--	--
06059500	Warm Springs Creek at Alhambra	20.6	1921-24	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06060000	Clancy Creek at Clancy	33.1	1921-23	--	--	--	--	--	--	--
06060500	Lump Gulch at Foley's Ranch, near Clancy	33.0	1921-24	--	--	--	--	--	--	--
06061000	Lump Gulch at Zastrow's Ranch, near Clancy	43.4	1908-13	1909-13, 1981	--	--	--	--	--	--
06061500	Prickly Pear Creek near Clancy	192	1908-16, 1921-33, 1945-69, 1978-2002	1911-16, 1923-33, 1946-53, 1955-69, 1975, 1979-2002	--	--	--	1950, 1999-2003	1999-2003	--
06061700	Jackson Creek near East Helena	3.44	--	1961-75, 1981, 1989-90	--	--	--	--	--	--
06061800	Crystal Creek near East Helena	3.77	--	1961-75, 1981, 1989-90	--	--	--	--	--	--
06061900	McClellan Creek near East Helena	33.2	--	1961-75, 1981, 1989-90	--	--	--	1988-90	1989-90	--
06062000	Prickly Pear Creek at East Helena	251	1908-13	--	--	--	--	1995	--	--
06062010	Prickly Pear Creek below East Helena	--	--	--	--	--	--	1971	--	--
06062500	**Tenmile Creek near Rimini**	30.9	**1914-94, 1997-P**	**1915-94, 1997-P**	--	--	--	1981, 1997-99	1997-99	--
06062700	Little Porcupine Creek tributary near Helena	0.39	--	1959-73, 1981,1989	--	--	--	--	--	--
06062750	**Tenmile Creek at Tenmile Water Treatment Plant, near Rimini**	51.1	1997-2002	1997-2002	--	--	--	**1999-2004**	**1999-2004**	--
06063000	**Tenmile Creek near Helena**	96.5	1908-54, 1997-98	1909-54, 1975,1981, 1997-98	--	--	--	**1950-51, 1997-98 2002-P**	**1997-98 2002-P**	--
06063500	Sevenmile Creek at Birdseye	31.9	1908-13	--	--	--	--	--	--	--
06064000	Sevenmile Creek near Helena	--	1908	--	--	--	--	--	--	--
06064100	**Tenmile Creek at Green Meadow Drive, at Helena**	161	1997-98	1997-98	--	--	--	**2002-04**	**2002-04**	--
06064150	Tenmile Creek above Prickly Pear Creek, near Helena	188	1997-98	1997-98	--	--	--	--	--	--
06064500	**Lake Helena near Helena**	610	**1945-P**	--	--	--	--	--	--	--
06065000	**Hauser Lake near Helena**	16,876	**1936-P**	--	--	--	--	--	--	--
06065500	**Missouri River below Hauser Dam, near Helena**	16,876	**1923-42 1995-P**	**1923-42, 1995-P**	--	--	--	--	--	--
06066000	**Holter Lake near Wolf Creek**	17,149	**1936-P**	--	--	--	--	--	--	--
06066500	**Missouri River below Holter Dam, near Wolf Creek**	17,149	**1945-P**	**1946-P**	--	**2000-P**	--	--	--	--
06067000	Little Prickly Pear Creek above Deadman Creek, near Marysville	20.1	1909-11	--	--	--	--	--	--	--
06067500	Deadman Creek near Marysville	9.52	1909-11	--	--	--	--	--	--	--
06068000	Lost Horse Creek near Marysville	13.1	1909-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06068500	Little Prickly Pear Creek near Marysville	44.4	1913-33	1913-32	--	--	--	--	--	--
06069000	Marsh Creek near Marysville	6.07	1909-12	--	--	--	--	--	--	--
06070000	Canyon Creek near Canyon Creek	73.8	1921-23	--	--	--	--	--	--	--
06070500	Cottonwood Creek near Canyon Creek	16.5	1921-22	--	--	--	--	--	--	--
06071000	Little Prickly Pear Creek near Canyon Creek	183	1909-11, 1913-24	1909-11, 1913-24	--	--	--	--	--	--
06071080	Sieben Ranch ditch below Clark Creek, near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071100	Little Prickly Pear Creek at Sieben Ranch, near Wolf Creek	270	1962-67	1962-67	--	--	1962-67	1964	1966	--
06071130	Little Prickly Pear Creek above Medicine Rock Creek, near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071180	Medicine Rock Creek near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071200	Lyons Creek near Wolf Creek	29.9	--	1959-73, 1975	--	--	--	--	1964-67	--
06071220	Little Prickly Pear Creek below Lyons Creek, near Wolf Creek	--	--	--	--	--	--	--	1965-67	--
06071230	Little Prickly Pear Creek above Sheep Creek, near Wolf Creek	--	--	--	--	--	--	--	1964	--
06071240	Sheep Creek near Wolf Creek	--	--	--	--	--	--	--	1964-67	--
06071290	Wolf Creek at Wolf Creek	--	--	--	--	--	--	--	1964-64	--
06071300	**Little Prickly Pear Creek at Wolf Creek**	381	**1962-67, 1992-P**	**1962-65, 1967,1975, 1992-P**	--	2001-2002	1962-67	1964	1964-67	--
06071400	Dog Creek near Craig	15.7	--	1960-75	--	--	--	--	--	--
06071500	Missouri River at Craig	17,739	1890-92	--	--	--	--	--	--	--
06071600	Wegner Creek at Craig	35.7	--	1960-91	--	--	--	--	--	--
06072000	Dearborn River above Falls Creek, near Clemons	69.6	1908-12	--	--	--	--	--	--	--
06072500	Falls Creek near Clemons	37.6	1908-12	--	--	--	--	--	--	--
06073000	Dearborn River near Clemons	123	1921-23, 1929-53	1921-23 1929-53, 1964,1975	--	--	--	--	--	--
06073500	**Dearborn River near Craig**	325	**1946-69, 1994-P**	**1946-69, 1975, 1994-P**	--	**1993-P**	--	1991, 1999-2003	1999-2003	--
06073600	**Black Rock Creek near Augusta**	5.54	--	**1974-P**	--	--	--	--	--	--
06074000	Missouri River at Cascade	18,493	1902-15, 1953	1903-15	--	--	--	--	--	--
06074500	Smith River near White Sulphur Springs	30.7	1923-31, 1934-36	1923-31, 1934-36	--	--	--	--	--	--
06075500	Smith River above Fivemile Creek, near White Sulphur Springs	73.2	1934-43	1934-43	--	--	--	--	--	--
06075600	Fivemile Creek near White Sulphur Springs	6.42	--	1960-74	--	--	--	--	--	--
06075700	North Fork Smith River near mouth, near White Sulphur Springs	185	--	--	--	--	--	1993-95	1993-95	1993-95
06075800	South Fork Smith River at mouth, near White Sulphur Springs	174	--	--	--	--	--	1993-95	1993-95	1993-95
06075900	Big Birch Creek at mouth, near White Sulphur Springs	49.6	--	--	--	--	--	1993-95	1993-95	1993-95

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06076000	Newlan Creek near White Sulphur Springs	7.27	1946-54	1946-53, 1960-73	--	--	--	--	--	--
06076500	Newlan Creek near damsite, near White Sulphur Springs	44.8	1950-57	1951-57	--	--	--	--	--	--
06076550	Newlan Creek at mouth, near White Sulphur Springs	--	--	--	--	--	--	1993-95	1993-95	1993-95
06076600	Camas Creek at mouth, near White Sulphur Springs	--	--	--	--	--	--	1993-95	1993-95	1992-95
06076650	Benton Gulch at mouth, near White Sulphur Springs	57.6	--	--	--	--	--	1993-95	1993-95	1993-95
06076690	Smith River near Fort Logan	846	1978-96	1978-96	--	--	--	1993-95	1993-95	1993-95
06076700	Sheep Creek near Neihart	5.22	--	1960-91	--	--	--	--	--	--
06076800	Nugget Creek near Neihart	1.50	--	1959-73	--	--	--	--	--	--
06077000	Sheep Creek near White Sulphur Springs	42.8	1941-72	1942-72, 1975,1981	--	--	--	1956,1980	1980	--
06077090	Sheep Creek near mouth, near White Sulphur Springs	192	--	--	--	--	--	1993-95	1993-95	1991, 1993-95
06077200	**Smith River below Eagle Creek, near Fort Logan**	1,088	**1996-P**	**1997-P**	--	**1997-P**	--	--	--	--
06077300	Trout Creek near Eden	13.2	--	1974-84	--	--	--	--	--	--
06077500	Smith River near Eden	1,594	1951-69	1951-69, 1975,1981	--	--	--	--	--	--
06077700	Smith River tributary near Eden	1.44	--	1960-73, 1975	--	--	--	--	--	--
06077800	Goodman Coulee near Eden	22.1	--	1959-82	--	--	--	--	--	--
06078000	Smith River at Truly	2,006	1905-07, 1929-32	1905-07, 1929-32, 1953	--	--	--	1991	--	--
06078200	**Missouri River near Ulm**	20,941	**1957-P**	**1948,1953, 1958-P**	--	--	--	--	--	--
06078230	Sand Coulee Creek above Cottonwood Creek, at Centerville	78.8	1995-96	1995-96	--	--	--	1994-96	--	--
06078250	Cottonwood Creek near Stockett	--	1995-96	1995-96	--	--	--	1994-96	--	--
06078260	Number Five Coulee below Giffen Spring, near Stockett	16.7	1995-96	1995-96	--	--	--	1994-96	--	--
06078270	Sand Coulee at Sand Coulee	6.36	1995-96	1995-96	--	--	--	1994-96	--	--
06078500	North Fork Sun River near Augusta	258	1911-12, 1946-68, 1989-93	1911-12, 1946-68, 1989-93	--	--	--	--	1989-93	--
06079000	South Fork Sun River near Augusta	252	1911-12	--	--	--	--	--	--	--
06079500	**Gibson Reservoir near Augusta**	575	**1930-P**	--	--	--	--	1951	--	--
06079600	Beaver Creek at Gibson Dam, near Augusta	20.8	--	1959-73	--	--	--	--	--	--
06080000	Sun River near Augusta	609	1889-91, 1904-40	1890, 1905-29, 1964	--	--	--	--	--	--
06080500	Pishkun Reservoir near Augusta	--	1936-95	--	--	--	--	1951	--	--
06080700	Spring Valley Canal below Spring Valley drop, near Fairfield	--	1967-68	--	--	--	--	--	--	--

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Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
	Part 6--Missouri River Basin--Continued									
06080800	Spring Valley Canal above Upper Turnbull drop, near Fairfield	--	1967-68	--	--	--	--	--	--	--
06080900	Sun River below diversion dam, near Augusta	609	1967-80	1964, 1968-80	1968-79	--	--	1968-79	--	--
06081000	Floweree Big Canal near Augusta	--	1912	--	--	--	--	--	--	--
06081500	Willow Creek near Augusta	96.1	1905-25	1905-1910, 1912-25	--	--	--	--	--	--
06082000	Willow Creek Reservoir near Augusta	--	1936-95	--	--	--	--	--	--	--
06082200	Sun River below Willow Creek, near Augusta	827	1967-74	1964, 1968-75	--	--	--	--	--	--
06082500	Smith Creek near Augusta	25.0	1906-13	1906-12	--	--	--	--	--	--
06083000	Nilan Reservoir near Augusta	--	1951-95	--	--	--	--	--	--	--
06083500	Ford Creek near Augusta	19.4	1906-13	1906-12, 1964	--	--	--	--	--	--
06084000	Smith Creek below Ford Creek, near Augusta	74.0	1946-52	1946-52, 1964,1975	--	--	--	1951	--	--
06084500	Elk Creek at Augusta	157	1905-25	1905-24, 1964,1975	--	--	--	--	--	--
06085000	Crown Butte Canal at Riebling	--	1912	--	--	--	--	--	--	--
06085500	Crown Butte Canal near Simms	--	1912	--	--	--	--	--	--	--
06085800	**Sun River at Simms**	1,320	**1953, 1966-79. 1997-P**	**1964, 1966-79, 1997-P**	--	--	--	1996-98	1996-98	--
06086000	Sun River at Fort Shaw	1,417	1912-28	1913-28	--	--	--	--	--	--
06086500	Sun River Canal at Sun River	--	1912	--	--	--	--	--	--	--
06087000	Sun River Canal at Vaughn	--	1912	--	--	--	--	--	--	--
06087500	Sun River at Sun River	1,454	1905-12	1906-12	--	--	--	--	--	--
06087900	Muddy Creek tributary near Power	3.15	--	1963-78, 1986	--	--	--	--	--	--
06088000	Muddy Creek near Power	137	1935-40, 1982-83	1982-83	--	--	--	1992	--	--
06088100	Spring Coulee near Power	30.4	1982-83	1982	--	--	--	1992	--	--
06088200	Tank Coulee near Power	31.0	1982-83	1982	--	--	--	1992	--	--
06088300	**Muddy Creek near Vaughn**	282	**1968-87, 1996-P**	**1968-87, 1996-P**	1968-82	1968-79	1968-82	**1968-82, 1992-P**	**1971-82, 1996-P**	--
06088500	**Muddy Creek at Vaughn**	314	**1925-26. 1934-68, 1971-P**	**1925, 1934-37, 1939-68, 1971-P**	1968, 1972-82	1968, 1971-79	1971-82	**1968, 1972-82, 1992-P**	**1968, 1971-81, 1993-P**	--
06089000	**Sun River near Vaughn**	1,849	**1897, 1934-P**	**1934-P**	1969-2003	1969-79 1999-2003	--	**1969-P**	**1987-94 1996-P**	1987-94
06089300	Sun River tributary near Great Falls	21.0	--	1956-73, 1975, 1979-80	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06090100	Missouri River at Black Eagle Dam, at Great Falls	--	--	--	--	--	--	1951	--	--
06090130	Missouri River below Rainbow Dam, near Great Falls	--	--	--	--	--	--	1971	--	--
06090300	**Missouri River near Great Falls**	23,292	**1953, 1956-P**	**1952-P**	--	--	--	1994-95	1994-95	--
06090500	Belt Creek near Monarch	368	1951-82	1952-82	--	1977-81	--	--	--	--
06090550	**Little Otter Creek near Raynesford**	39.5	--	**1974-P**	--	--	--	--	--	--
06090570	Big Otter Creek near Belt	197	1994-98	1994-98	--	--	--	--	--	--
06090590	Anaconda Drain at Belt	0.05	1995-96	1995-96	--	--	--	94-96	--	--
06090600	Belt Creek near Belt	700	1905-07	--	--	--	--	--	--	--
06090610	Belt Creek near Portage	799	1980-83	1981-83	--	1981-83	--	1981-83	1981-83	--
06090650	**Lake Creek near Power**	83.8	**1990-P**	**1990-P**	1992-96	1992-95	1992-95	1990-96	--	--
06090700	Highwood Creek near Highwood	57.8	1905-06	--	--	--	--	--	--	--
06090720	Highwood Creek near Portage	122	1980-83	1981-83	--	1981-83	--	1981-83	1981-83	1981
06090800	**Missouri River at Fort Benton**	24,749	**1890-P**	**1891-1899, 1901-P**	--	1981-82	1980	1969-73 1981-86	1965, 1980-86	1969-73 1981-86
06090810	Ninemile Coulee near Fort Benton	16.9	--	1972-73, 1975-90	--	--	--	--	--	--
06091000	Two Medicine River near East Glacier	51.1	1912-13, 1918-24, 1962-64	1912, 1918-21, 1923-24, 1963-64	--	--	--	--	--	--
06091500	Two Medicine River at Midvale	--	1902-03	--	--	--	--	--	--	--
06091700	**Two Medicine River below South Fork, near Browning**	250	**1977-P**	**1977-P**	--	--	--	1988-89	--	--
06091850	Two Medicine Canal wasteway to Mission Lake, near Blackfoot	--	--	--	--	--	--	1971	--	--
06091852	Mission Lake near Blackfoot	--	--	--	--	--	--	1971-75	--	--
06091853	Spring Creek at Mission Lake outlet, near Cut Bank	--	--	--	--	--	--	1971	--	--
06091900	Two Medicine Canal near Cut Bank	--	--	--	--	--	--	1956	--	--
06092000	Two Medicine River near Browning	317	1907-25, 1951-77	1907, 1909-12, 1914-24, 1951-77	--	--	--	1956	--	--
06092500	Badger Creek near Browning	133	1951-73	1951-73	--	--	--	--	--	--
06093200	**Badger Creek below Four Horns Canal, near Browning**	152	**1973-P**	**1974-P**	--	--	--	1988-89	--	--
06093300	Badger Canal near Dupuyer	--	--	--	--	--	--	1956	--	--
06093500	Badger Creek near Family	239	1907-25	1910-13, 1915-24	--	--	--	--	--	--
06093600	Two Medicine River near Cut Bank	--	--	--	--	--	--	1982-84	--	--
06094000	Swift Reservoir near Dupuyer	75.3	1916, 1936-64, 1967-95	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06094500	Birch Creek at Swift Dam, near Dupuyer	75.3	1913-29	1913-26, 1929	--	--	--	--	--	--
06095000	Birch Creek near Dupuyer	105	1907-37	1909-37, 1964	--	--	--	--	--	--
06095500	Lake Frances near Valier	--	1936-95	--	--	--	--	--	--	--
06096000	Birch Creek at Nelson's Ranch, near Dupuyer	111	1914-26	1914-15, 1917-21, 1923-26	--	--	--	--	--	--
06096500	Birch Creek at Hall's Ranch, near Dupuyer	122	1913-20	1913-15, 1917-20	--	--	--	--	--	--
06097000	Birch Creek at Robare	128	1914-26	1915, 1917-23, 1925-26	--	--	--	--	--	--
06097100	Blacktail Creek near Heart Butte	16.4	--	1975-91	--	--	--	--	--	--
06097200	Blacktail Creek near Dupuyer	--	--	--	--	--	--	1982-84	--	--
06097300	Cartwright Coulee near Dupuyer	7.86	--	2003	--	--	--	--	--	--
06097500	Dupuyer Creek at Dupuyer	65.7	1908-13	--	--	--	--	--	--	--
06098000	Dupuyer Creek near Valier	137	1912-37	1913-29, 1932-37, 1948,1964	--	--	--	--	--	--
06098100	Birch Creek near Valier	471	1978-83	1978-83	--	--	--	1955, 1978-83	--	--
06098500	**Cut Bank Creek near Browning**	123	**1918-25, 1991-P**	**1918, 1920-24, 1991-P**	--	--	--	1991-92	--	--
06098700	**Powell Coulee near Browning**	12.7	--	**1974-P**	--	--	--	--	--	--
06098900	Big Rock Coulee near Santa Rita	185	--	--	--	--	--	1982-84, 1991-92	--	--
06099000	**Cut Bank Creek at Cut Bank**	1,041	**1905-20, 1922-24, 1951-73, 1982-P**	**1906-12, 1914-17, 1919-20, 1922-24, 1951-73, 1975, 1982-P**	--	--	--	1951, 1982-89, 1991-92	--	--
06099010	**Cut Bank Creek tributary near Cut Bank**	1.96	--	**2004**	--	--	--	--	--	--
06099100	Spring Creek near Cut Bank	91	--	--	--	--	--	1982-84, 1991-92	--	--
06099300	Cut Bank Creek at mouth, near Cut Bank	1,213	--	--	--	--	--	1991-92	--	--
06099500	**Marias River near Shelby**	3,242	**1902-08, 1911-P**	**1902-04, 1906-07, 1911-46, 1948-P**	--	1950-51	1950-51	--	--	--
06099700	Middle Fork Dry Fork Marias River near Dupuyer	20.2	--	1960-74, 1986	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06100000	Dry Fork Marias River near Valier	131	1911-15	--	--	--	--	--	1980	--
06100200	Heines Coulee tributary near Valier	0.60	--	1960-75, 1986	--	--	--	--	--	--
06100300	**Lone Man Coulee near Valier**	14.1	--	**1960-P**	--	--	--	--	--	--
06100500	Dry Fork Marias River at Fowler	314	1921-31	1920-31	--	--	--	--	--	--
06101000	Willow Creek near Devon	310	1921-25	--	--	--	--	--	--	--
06101200	Willow Creek near Galata	839	1977-82	1978-82	--	--	--	--	--	--
06101300	Lake Elwell near Chester	4,923	1956-95	--	--	--	--	--	--	--
06101500	**Marias River near Chester**	4,927	**1921, 1945-47, 1955-P**	**1921,1946, 1956-P**	--	**1994-P**	--	1964-72, 1978-86, 1991	1978-86	1978-86
06101510	Pondera Coulee near Conrad	4.96	--	2003	--	--	--	--	--	--
06101520	**Favot Coulee tributary near Ledger**	0.86	--	**1974-P**	--	--	--	--	--	--
06101560	Pondera Coulee near Chester	598	1976-85	1964, 1976-85	--	--	--	--	--	--
06101600	Marias River tributary No. 3 near Chester	0.26	--	1962-76, 1978	--	--	--	--	--	--
06101700	Fey Coulee tributary near Chester	2.47	--	1963-91	--	--	--	--	--	--
06101800	Sixmile Coulee near Chester	30.3	--	1963-77, 1979,1986	--	--	--	--	--	--
06101900	Dead Indian Coulee near Fort Benton	2.73	--	1963-77, 1986	--	--	--	--	--	--
06102000	Marias River near Brinkman	6,425	1922-56	1908, 1922-56	--	--	--	--	--	--
06102050	**Marias River near Loma**	7,137	**1960-72 2001-P**	**1960-72 2001-P**	--	--	--	--	1965	--
06102100	Dry Fork Coulee tributary near Loma	0.84	--	1959-73	--	--	--	--	--	--
06102200	Marias River tributary at Loma	1.62	--	1956-60, 1962-73	--	--	--	--	--	--
06102300	Maris River tributary No. 2 at Loma	0.25	--	1956-60, 1962-73	--	--	--	--	--	--
06102500	**Teton River below South Fork, near Choteau**	105	**1947-55 1998-P**	**1948-54, 1964, 1998-P**	--	--	--	**1998-P**	**1998-P**	--
06103000	Teton River at Strabane	128	1904-06, 1908-25	1908-25	--	--	--	--	--	--
06103500	McDonald Creek near Strabane	5.17	1913-14, 1917-20	--	--	--	--	--	--	--
06104000	McDonald Creek near Choteau	10.4	1917-20	--	--	--	--	--	--	--
06104500	Teton River near Choteau	221	1906, 1913-19	--	--	--	--	--	--	--
06105000	Deep Creek at Frazer's ranch, near Choteau	37.7	1912	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06105500	Willow Creek near Choteau	88.2	1912-17	--	--	--	--	--	--	--
06105800	Bruce Coulee tributary near Choteau	1.70	--	1963-2002	--	--	--	--	--	--
06106000	Deep Creek near Choteau	223	1911-25	1911-24, 1964	--	--	--	--	--	--
06106500	Muddy Creek near Bynum	71.1	1912-25	1913-18, 1920, 1922-24	--	--	--	--	--	--
06107000	North Fork Muddy Creek near Bynum	61.3	1912-24	1913-17, 1919-24	--	--	--	--	--	--
06107500	Muddy Creek near Agawam	274	1917	--	--	--	--	--	--	--
06108000	**Teton River near Dutton**	1,307	**1954-P**	**1955-P**	--	--	--	**1998-P**	**1998-P**	--
06108200	Kinley Coulee near Dutton	9.67	--	1963-78	--	--	--	--	--	--
06108300	Kinley Coulee tributary near Dutton	2.65	--	1963-78	--	--	--	--	--	--
06108500	Teton River near Fort Benton	1,989	1929-32	--	--	--	--	1991	--	--
06108800	**Teton River at Loma**	2,010	**1998-P**	**1999-P**	--	2000-03	--	**1998-P**	**1965, 1998-P**	--
06109000	Missouri River at Loma	34,221	1935-53	--	--	--	--	--	--	--
06109500	**Missouri River at Virgelle**	34,379	**1935-P**	**1935-P**	--	--	--	1975-85 1991	1975-85, 1991	1975-85
06109530	Little Sandy Creek tributary near Virgelle	0.80	--	1972, 1974-2002	--	--	--	--	--	--
06109560	**Alkali Coulee tributary near Virgelle**	0.96	--	**1974-P**	--	--	--	--	--	--
06109600	**Chip Creek tributary near Winifred**	0.07	--	**2003-P**	--	--	--	--	--	--
06109750	Middle Fork Judith River below Lost Fork, near Utica	108	1972-75	1972-75	--	--	--	--	--	--
06109775	Middle Fork Judith River at Ranger Station, near Utica	--	--	--	--	--	--	1964	--	--
06109780	Middle Fork Judith River near Utica	160	1972-79	1972-79	--	--	--	--	--	--
06109800	South Fork Judith River near Utica	58.7	1958-79	1959-79	--	--	--	--	--	--
06109900	Judith River tributary near Utica	7.15	--	1960-74	--	--	--	--	--	--
06109950	Judith River tributary No. 2, near Utica	6.97		1959-67	--	--	--	--	--	--
06110000	Judith River near Utica	328	1920-75	1920-32, 1934-75	--	--	--	--	--	--
06110500	Ackley Lake near Hobson	--	1938-95	--	--	--	--	--	--	--
06111000	Ross Fork Creek near Hobson	337	1946-54, 1955-62	1947-53, 1955-62, 1975	--	--	--	--	--	--
06111500	Big Spring Creek near Lewistown	20.9	1932-57	1932-40	--	--	--	--	--	--
06111700	Mill Creek near Lewistown	3.14	--	1960-91	--	--	--	--	--	--
06112000	Cottonwood Creek near Lewistown	45.6	1946-51	--	--	--	--	--	--	--
06112100	Cottonwood Creek near Moore	47.9	1957-63	1958-73, 1975,1978	--	--	--	--	--	--
06112500	Sage Creek at Windham	58.6	1920-22	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Missouri River Basin--Continued								
06112800	**Bull Creek tributary near Hilger**	0.99	--	**1974-P**	--	--	--	--	--	--
06113000	Judith River near Lewistown	1,939	1910-11	--	--	--	--	--	--	--
06113500	Judith River near Winifred	2,160	1929-32	--	--	--	--	1991	--	--
06114000	Wolf Creek at Neubert ranch, near Stanford	79.2	1920-26	1920-26	--	--	--	--	--	--
06114500	Wolf Creek near Stanford	112	1950-53, 1955-62	1950-53, 1955-58, 1960-62, 1975,1978	--	--	--	--	--	--
06114550	**Wolf Creek tributary near Coffee Creek**	1.73	--	**1974-P**	--	--	--	--	--	--
06114700	**Judith River near mouth, near Winifred**	2,731	**2001-P**	**2001-P**	--	**2001-P**	--	2001-03	2001-03	--
06114900	Taffy Creek tributary near Winifred	2.95	--	1974-2002	--	--	--	--	--	--
06115000	Missouri River at Power Plant ferry, near Zortman	40,763	1934-68	1934-67	--	--	--	--	--	--
06115200	**Missouri River near Landusky**	40,987	**1934-P**	**1934-P**	--	--	**1972-P**	1976-94	**1972-P**	1979-94
06115270	**Armells Creek near Landusky**		**2000-2004**	**2000-2004**	--	--	--	--	--	--
06115300	**Duval Creek near Landusky**	3.31	**2000-2004**	**1963-2004**	--	--	--	--	--	--
06115350	**Rock Creek near Landusky**		**2000-2004**	**2000-2004**						
06115500	North Fork Musselshell River near Delpine	31.4	1940-79	1941-79	--	--	--	--	--	--
06116000	North Fork Musselshell River at Delpine	48.6	1909-12, 1922-32	1909-11, 1922-32	--	--	--	--	--	--
06116500	Bair Reservoir near Delpine	48.6	1939-95	--	--	--	--	--	--	--
06116900	Checkerboard Creek near Delpine	21.1	1909-15	--	--	--	--	--	--	--
06117000	Checkerboard Creek at Delpine	23.9	1922-32	1922-30, 1932	--	--	--	--	--	--
06117500	Spring Creek near Martinsdale	32.5	1922-24	--	--	--	--	--	--	--
06117800	Big Coulee near Martinsdale	2.86	--	1972, 1974-2002	--	--	--	--	--	--
06118000	North Fork Musselshell River near Martinsdale	233	1907-14	1908-14	--	--	--	--	--	--
06118500	South Fork Musselshell River above Martinsdale	287	1942-79	1942-79	--	--	--	--	--	--
06119000	Martinsdale Reservoir near Martinsdale	--	1939-95	--	--	--	--	--	--	--
06119500	South Fork Musselshell River near Martinsdale	300	1907-15, 1930-32	1908-14, 1930,1932	--	--	--	--	--	--
06119600	**Musselshell River at Martinsdale**	538	**2003-P**	**2003-P**	--	--	--	--	--	--
06120000	Big Elk Creek at Twodot	89.1	1953-56	--	--	--	--	--	--	--
06120500	**Musselshell River at Harlowton**	1,125	**1907-P**	**1909-P**	--	2001-2002	--	1988-91	1988-91	--
06120600	Antelope Creek tributary near Harlowton	0.47	--	1956-73	--	--	--	--	--	--
06120700	Antelope Creek tributary near mouth, near Harlowton	1.92	--	1956-73	--	--	--	--	--	--
06120800	Alkali Creek near Harlowton	21.2	--	1956-91	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06120900	Antelope Creek at Harlowton	88.7	--	1950, 1954-73, 1976, 1978-80	--	--	--	--	--	--
06121000	American Fork near Harlowton	94.6	1907-14, 1924-32	1908-11, 1913, 1924-30, 1932	--	--	--	--	--	--
06121500	Lebo Creek near Harlowton	59.1	1907-14, 1924-32	1910,1913, 1924-32	--	--	--	--	--	--
06122000	American Fork below Lebo Creek, near Harlowton	166	1946-67	1947-67, 1975	--	--	--	--	--	--
06122500	Deadmans Basin Reservoir near Shawmut	--	1941-95	--	--	--	--	--	--	--
06122800	Musselshell River near Shawmut	1,479	1986-98	1986-97	--	--	--	--	--	--
06123000	Musselshell River at Shawmut	1,496	1902-07	--	--	--	--	--	--	--
06123030	**Musselshell River above Mud Creek, near Shawmut**	--	**1998-P**	**1998-P**	--	--	--	--	--	--
06123200	**Sadie Creek tributary near Harlowton**	2.10	--	**1971, 1973-P**	--	--	--	--	--	--
06123500	Musselshell River near Ryegate	1,979	1946-79	1947-79	--	--	--	--	--	--
06124000	Careless Creek near Living Springs	21.2	1920-23	--	--	--	--	--	--	--
06124500	West Careless Creek near Living Springs	23.5	1920-21	--	--	--	--	--	--	--
06124600	**East Fork Roberts Creek tributary near Judith Gap**	0.74	--	**1974-P**	--	--	--	--	--	--
06125000	Roberts Creek at Hedgesville	322	1920-23	--	--	--	--	--	--	--
06125500	Careless Creek at Wallum	471	1934-42	1934-37, 1939-42	--	--	--	--	--	--
06125520	**Swimming Woman Creek tributary near Living Springs**	1.27	--	**1974-P**	--	--	--	--	--	--
06125680	**Big Coulee Creek tributary near Cushman**	1.23	--	**1974-P**	--	--	--	--	--	--
06125700	Big Coulee Creek near Lavina	232	1957-72	1958-72	--	--	--	--	--	--
06126000	Musselshell River at Lavina	2,928	1906	--	--	--	--	--	--	--
06126050	**Musselshell River near Lavina**	2,970	**1992-P**	**1992-P**	--	--	--	--	--	--
06126300	Currant Creek near Roundup	220	--	1958-59, 1961-73	--	--	--	--	--	--
06126470	Halfbreed Creek near Klein	53.2	1978-91	1978-91	--	--	--	1978-81, 1984	1978-81, 1984	--
06126500	**Musselshell River near Roundup**	4,023	**1946-P**	**1946-48, 1950-P**	--	--	--	1978-81	1978-81	--
06127000	South Willow Creek near Roundup	--	1922-23	--	--	--	--	--	--	--
06127020	**Willow Creek above LMGA Reservoir, near Roundup**	124	**1995-2004**	**1996-2004**	--	--	--	--	--	--
06127060	**Willow Creek at U.S. canal, near Roundup**	141	**1995-2004**	**1996-2004**	--	--	--	--	--	--
06127100	South Willow Creek tributary near Roundup	1.38	--	1962-76	--	--	--	--	--	--
06127150	East Parrot Creek near Roundup	20.2	--	--	--	--	--	1979-80	1979-80	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06127160	West Parrot Creek near Roundup	20.5	--	--	--	--	--	1978-81	1978-81	--
06127200	Musselshell River tributary near Musselshell	10.8	--	1963-77, 1991	--	--	--	--	--	--
06127300	Fattig Creek near Delphia	22.9	--	--	--	--	--	1978-81	1978-81	--
06127500	**Musselshell River at Musselshell**	4,568	**1928-32, 1945-79, 1983-P**	**1929-30, 1932, 1946-79, 1983-P**	--	--	--	1988-91	1988-91	--
06127505	**Fishel Creek near Musselshell**	16.5	--	**1974-P**	--	--	--	--	--	--
06127520	**Home Creek near Sumatra**	1.98	--	**1973-P**	--	--	--	--	--	--
06127570	**Butts Coulee near Melstone**	6.71	--	**1963-P**	--	--	--	--	--	--
06127585	**Little Wall Creek tributary near Flatwillow**	9.77	--	**1974-P**	--	--	--	--	--	--
06127600	Musselshell River near Mosby	5,941	1963-66	--	--	--	1963-66	1963-66	1964-66	--
06127900	Flatwillow Creek near Flatwillow	188	1911-32, 1934-56	1911-32, 1934-36, 1938-56	--	--	--	--	--	--
06128200	Flatwillow Creek near Winnett	642	1921-32, 1948-51	1923-29, 1931-32, 1948-51	--	--	--	--	--	--
06128400	South Fork Bear Creek near Roy	39.6	--	1962-76	--	--	--	--	--	--
06128500	**South Fork Bear Creek tributary near Roy**	5.40	--	**1962-P**	--	--	--	--	--	--
06128900	Box Elder Creek tributary near Winnett	16.2	--	1955-73	--	--	--	--	--	--
06129000	Box Elder Creek near Winnett	684	1930-33, 1934-38, 1958-72	1931-32, 1934-38, 1959-71, 1978	--	--	--	--	--	--
06129100	North Fork McDonald Creek tributary near Heath	2.24	--	1960-75	--	--	--	--	--	--
06129200	Alkali Creek near Heath	3.76	--	1960-74	--	--	--	--	--	--
06129400	South Fork McDonald Creek tributary near Grass Range	0.51	--	1963-77	--	--	--	--	--	--
06129500	McDonald Creek at Winnett	421	1930-32, 1934-45, 1953-56	1931-32, 1934-45, 1953-73, 1975	--	--	--	--	--	--
06129700	**Gorman Coulee near Cat Creek**	2.32	--	**1955-59, 1962-73, 1977,1980, 1991-P**	--	--	--	--	--	--
06129800	Gorman Coulee tributary near Cat Creek	0.81	--	1955-2002	--	--	--	--	--	--
06130000	Flatwillow Creek near Mosby	1,855	1964-66	--	--	--	1964-66	1964-66	1964-66	--
06130500	**Musselshell River at Mosby**	7,846	**1929-35, 1934-P**	**1929, 1931-32, 1934-P**	--	2000-03	1983-95	1975-95, 1999-2003	**1975-1997, 1999-2004**	1975-95

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06130600	Cat Creek near Cat Creek	36.5	--	1958-73, 1977,1980	--	--	--	--	--	--
06130610	**Bair Coulee near Mosby**	1.79	--	**1974-P**	--	--	--	--	--	--
06130620	**Blood Creek tributary near Valentine**	1.97	--	**1974-P**	--	--	--	--	--	--
06130630	**Crooked Creek tributary near Roy**	0.61	--	**2003-P**	--	--	--	--	--	--
06130650	**Hell Creek near Jordan**	70.6	**2000-04**	**2000-04**	--	--	--	--	--	--
06130680	Big Dry Creek at Jordan	521	--	--	--	--	--	1976-77	1976-77	--
06130700	Sand Creek near Jordan	317	1957-67	1958-67, 1986	--	--	--	--	--	--
06130800	Second Creek tributary near Jordan	0.52	--	1954, 1958-73	--	--	--	--	--	--
06130850	Second Creek tributary No. 2 near Jordan	2.08	--	1958-90	--	--	--	--	--	--
06130900	Second Creek tributary No. 3 near Jordan	0.72	--	1958-72	--	--	--	--	--	--
06130915	**Russian Coulee near Jordan**	3.45	--	**1974-P**	--	--	--	--	--	--
06130925	Thompson Creek tributary near Cohagen	1.23	--	1974-95	--	--	--	--	--	--
06130935	Crow Rock Creek near Cohagen	213	--	--	--	--	--	1978-80	1978-80	1978-80
06130940	**Spring Creek tributary near Van Norman**	1.39	--	**1974-P**	--	--	--	--	--	--
06130950	Little Dry Creek near Van Norman	1,224	1980	1958-75, 1986,1995	--	--	--	1976-77	1976-77	--
06131000	**Big Dry Creek near Van Norman**	2,554	**1939-P**	**1940-P**	--	--	--	1978,1981	1978	--
06131100	**Terry Coulee near Van Norman**	0.48	--	**1974-P**	--	--	--	--	--	--
06131120	Timber Creek near Van Norman	287	1982-85, 1988	1982-85, 1988	--	--	--	1976-79	1976-80	--
06131200	**Nelson Creek near Van Norman**	100	**1976-85, 2000-04**	**1976-85, 1991, 2000-04**	--	--	--	1976-79	1976-79	--
06131300	**McGuire Creek tributary near Van Norman**	0.79	--	**1974-P**	--	--	--	--	--	--
06131500	**Fort Peck Lake at Fort Peck**	57,500	**1938-P**	--	--	--	--	--	--	--
06132000	**Missouri River below Fork Peck Dam, at Fort Peck**	57,556	**1936-P**	**1934-P**	--	**2002-P**	--	**1964, 1975-87, 2002-P**	**1975-87, 2002-P**	1975-86
06132200	**South Fork Milk River near Babb**	70.4	**1961-P**	**1961-P**	--	--	--	1990-92	--	--
06132250	Livermore Creek near Babb	25.0	--	1962-67	--	--	--	--	--	--
06132400	Dry Fork Milk River near Babb	17.9	--	1962-91	--	--	--	--	--	--
06132500	South Fork Milk River near international boundary, near Browning	287	1905-31	--	--	--	--	1964	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06132700	Milk River near Del Bonita	325	1962-65	1906-08, 1911, 1913-17, 1919, 1923-24, 1927, 1929-30, 1962-67	--	--	--	--	--	--
06133000	**Milk River at western crossing of international boundary**	401	**1931-P**	**1931-38, 1940-P**	--	--	--	1960,1973, 1984-86, 1993	--	--
06133500	**North Fork Milk River above St. Mary Canal, near Browning**	60.2	**1911-12, 1919-P**	**1911-12, 1924, 1926-27, 1937, 1941-42, 1944-45, 1948, 1950-51, 1953-P**	--	--	--	1960,1965, 1973-74, 1982-83, 1990-92	--	--
06134000	**North Milk River near international boundary**	91.8	**1909-P**	**1911, 1913-P**	--	--	--	1960,1965, 1973-74, 1981, 1984-86, 1993	--	--
06134500	**Milk River at Milk River, Alberta**	1,050	**1909-P**	**1909, 1913-P**	--	--	--	1960,1965	--	--
06134600	Red River at international boundary	138	--	--	--	--	--	1995	--	--
06134700	**Verdigris Coulee near the mouth, near Milk River, Alberta**	137	**1985-P**	**1985-P**	--	--	--	--	--	--
06134800	Van Cleeve Coulee tributary near Sunburst	10.8	--	1963-91	--	--	--	--	--	--
06134850	Milk River near Writing-on-Stone Provincial Park, Alberta	1,690	1978-83	1978-82	--	--	--	--	--	--
06134890	Miners Coulee near international boundary	--	1966-94	--	--	--	--	--	--	--
06134930	Bear Creek near international boundary	--	1966-94	--	--	--	--	--	--	--
06134950	Milk River near Pendant D'Oreille	2,330	1978-83	1978-82	--	--	--	--	--	--
06135000	**Milk River at eastern crossing of international boundary**	2,525	**1910-P**	**1910-11, 1913-15, 1917, 1919-P**	--	--	--	1960,1965, 1974, 1984-86, 1993-94	--	--
06135500	Sage Creek at Q Ranch, near Wild Horse, Alberta	175	1935-83	1936-41, 1943, 1946-83	--	--	--	1965	--	--
06136000	Sage Creek at international boundary	220	1946-84	1946-83	--	--	--	1965	--	--
06136400	Spring Coulee tributary near Simpson	2.49	--	1972, 1974-2002	--	--	--	--	--	--
06136500	**Fresno Reservoir near Havre**	3,766	**1940-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06136700	Milk River below Fresno Dam, near Havre	3,400	1952-53	--	--	--	--	1950-53	--	--
06137000	Milk River above Havre	3,826	1928-33	--	--	--	--	--	--	--
06137400	**Big Sandy Creek at reservation boundary, near Rocky Boy**	24.7	**1982-P**	**1982-P**	--	--	--	1982-84, 1987-89	--	--
06137500	Big Sandy Creek near Big Sandy	83.3	1946-51	--	--	--	--	--	--	--
06137540	Duck Creek near Box Elder	--	--	--	--	--	--	1982-84	--	--
06137550	Camp Creek near Box Elder	7.2	--	--	--	--	--	1983-84	--	--
06137570	Boxelder Creek near Rocky Boy	48.2	1975-97	1976-97	--	--	--	1977-81 1983-84, 1993	1977-81, 1993	1977-81
06137575	Boxelder Creek at Box Elder	67.1	--	--	--	--	--	1983	--	--
06137580	Sage Creek near Whitlash	7.26	1976-82, 1985-90	1977-82, 1985-90	--	--	--	--	--	--
06137600	**Sage Creek tributary No. 2 near Joplin**	2.21	--	**1974-P**	--	--	--	--	--	--
06137900	England Coulee at Hingham	0.93	--	1960-74	--	--	--	--	--	--
06138000	Sage Creek near Kremlin	914	1946-51	1946-48, 1950-52	--	--	--	--	--	--
06138500	Big Sandy Creek near Box Elder	1,629	1927-39	1927-32, 1934-36, 1938	--	--	--	--	--	--
06138570	Big Sandy Creek above Gravel Coulee, near Laredo	1,639	--	--	--	--	--	1982-84	--	--
06138700	**South Fork Spring Coulee near Havre**	6.47	--	**1960-P**	--	--	--	--	--	--
06138800	Spring Coulee near Havre	17.8	--	1959-73	--	--	--	--	--	--
06139000	Big Sandy Creek near Laredo	1,752	1918-20	--	--	--	--	--	--	--
06139500	**Big Sandy Creek near Havre**	1,805	**1946-53, 1984-P**	**1946-53, 1955-67, 1969,1978, 1984-P**	--	--	--	1986-90	1986-90	--
06139800	West Fork Beaver Creek near Rocky Boy	2.92	2001-2003	--	--	--	--	--	--	--
06139850	Beaver Creek above Elk Creek, near Rocky Boy	7.63	2001-2003	--	--	--	--	--	--	--
06139900	**Beaver Creek at reservation boundary, near Rocky Boy**	16.1	**2001-04**	--	--	--	--	1982-84	--	--
06140000	Beaver Creek near Havre	87.4	1918-21	1919-21, 1966-86	--	--	--	--	--	--
06140400	Bullhook Creek near Havre	39.6	--	1960-71, 1973-75, 1986	--	--	--	--	--	--
06140500	**Milk River at Havre**	5,785	**1898-1923, 1954-P**	**1899-1922, 1952-53, 1955-P**	--	--	--	1964-72	--	--
06141000	Boxelder Creek near Havre	23.7	1919-22	--	--	--	--	--	--	--
06141500	Boxelder Creek at P.X. ranch, near Havre	33.3	1918	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06141600	Little Boxelder Creek at mouth, near Havre	95.9	1986-92, 1994-96	1986-92, 1994-96	--	--	--	--	--	--
06141900	Milk River tributary near Lohman	0.11	--	1960-74	--	--	--	--	--	--
06142000	Clear Creek near Bearpaw	69.6	1918-22	--	--	--	--	--	--	--
06142400	**Clear Creek near Chinook**	135	**1984-P**	**1984-P**	--	--	--	--	--	--
06142500	Fort Belknap Canal near Chinook	--	1903-21	--	--	--	--	--	--	--
06143000	Milk River at Lohman	6,166	1918-26, 1934-51	1919,1923, 1925, 1934-48, 1950-52	--	--	--	--	--	--
06144000	Paradise Valley Canal near headgate, near Chinook	--	1906-08, 1920-21	--	--	--	--	--	--	--
06144100	Walburger Coulee below diversion, near Govenlock, Saskatchewan	32.6	1963-79	1963-78	--	--	--	--	--	--
06144250	Lodge Creek at Alberta boundary	342	1951, 1963-67	--	--	--	--	1960	--	--
06144260	**Altawan Reservoir near Govenlock, Saskatchewan**	373	**1966-P**	--	--	--	--	--	--	--
06144270	**Spangler Ditch near Govenlock, Saskatchewan**	--	**1966-P**	--	--	--	--	--	--	--
06144300	Lodge Creek below Spangler Project, near Govenlock, Sask.	--	1963-66	--	--	--	--	--	--	--
06144350	**Middle Creek near Saskatchewan boundary**	118	**1963-P**	**1952, 1963-P**	--	--	--	--	--	--
06144360	Middle Creek Reservoir near Govenlock, Saskatchewan	130	1966-95	--	--	--	--	--	--	--
06144395	**Middle Creek below Middle Creek Reservoir, near Govenlock, Saskatchewan**	149	**1972-P**	1974-78, 1983, 1986-87	--	--	--	--	--	--
06144400	Middle Creek near Battle Creek, Saskatchewan	177	1963-72	1963-71, 1994	--	--	--	--	--	--
06144440	**Middle Creek near Govenlock, Saskatchewan**	253	**1986-P**	**1986-P**	--	--	--	--	--	--
06144450	**Middle Creek above Lodge Creek, near Govenlock, Sask.**	276	**1962-66, 1986-P**	**1986-P**	--	--	--	--	--	--
06144500	Lodge Creek at international boundary	753	1910-52	1911-15, 1917-52	--	--	--	--	--	--
06145000	McRae Creek at international boundary	59.0	1927-52	1927-28, 1930-33, 1935-47, 1950-52	--	--	--	--	--	--
06145500	**Lodge Creek below McRae Creek, at international boundary**	825	**1951-P**	**1952-P**	--	--	--	1960,1964, 1973, 1977-80, 1987-89	--	--
06146000	North Chinook Irrigation Canal near Havre	--	1921-24, 1928-68	--	--	--	--	--	--	--
06146500	Reser Ditch near Chinook	--	1905-06	--	--	--	--	--	--	--
06147000	West Fork Ditch near Chinook	--	1905-07	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06147500	Lodge Creek at Chinook	1,175	1906-08	--	--	--	--	--	--	--
06147950	**Gaff Ditch near Merryflat, Saskatchewan**	--	**1972-P**	--	--	--	--	--	--	--
06148000	Battle Creek above Cypress Lake west inflow canal, near West Plains, Saskatchewan	270	1939-66	1939-66	--	--	--	1960	--	--
06148500	**Cypress Lake west inflow canal near West Plains, Sask.**	--	**1939-P**	--	--	--	--	--	--	--
06148700	**Cypress Lake west inflow canal drain near Oxarat, Sask.**	--	**1963-P**	--	--	--	--	--	--	--
06149000	**Cypress Lake west outflow near West Plains, Sask.**	--	**1940-P**	--	--	--	--	1960	--	--
06149100	**Vidora Ditch near Consul, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149200	**Richardson Ditch near Consul, Saskatchewan**	--	**1963-P**	--	---	--	--	--	--	--
06149300	**McKinnon Ditch near Consul Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149400	**Nashlyn Canal near Consul, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06149500	**Battle Creek at international boundary**	997	**1917-P**	**1917-P**	--	--	--	1960,1964, 1972-74, 1987-89	--	1972
06150000	Woodpile Coulee near international boundary	60.2	1927-77	1927-30, 1932-47, 1950-63, 1965-76, 1986	--	--	--	--	--	--
06150500	East Fork Battle Creek near international boundary	89.5	1927-76	1927-33, 1935-63, 1965-67, 1969, 1971-76, 1986	--	--	--	--	--	--
06151000	Lyons Creek at international boundary	66.7	1927-94	1927-30, 1932, 1934-47, 1950-52, 1954-63, 1965-94	--	--	--	--	--	--
06151500	**Battle Creek near Chinook**	1,623	**1905-21, 1984-P**	**1905-14, 1917-21, 1952, 1984-P**	--	--	--	--	--	--
06152000	Cook Canal near Chinook	--	1905-19	--	--	--	--	--	--	--
06152500	Matheson Ditch near Chinook	--	1905-21, 1928-49, 1951-56	--	--	--	--	--	--	--
06153000	Paradise Valley Canal near Chinook	--	1903-19	--	--	--	--	--	--	--
06153400	**Fifteenmile Creek tributary near Zurich**	1.60	--	**1974-P**	--	--	--	--	--	--
06153500	Harlem Canal near Zurich	--	1904-21	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06154000	Milk River Canal A near Harlem	--	1905, 1910-20, 1986-87	--	--	--	--	--	--	--
06154100	**Milk River near Harlem**	9,822	**1959-69, 1983-P**	**1952, 1960-69, 1978, 1983-P**	--	--	--	1959-69 1994	--	--
06154140	Fifteenmile Creek tributary near Harlem	2.31	1983-92	1983-92	--	--	--	--	--	--
06154150	White Bear Creek below Fifteenmile Creek, near Dodson	--	--	--	--	--	--	1982-84	--	--
06154350	**Peoples Creek tributary near Lloyd**	2.51	--	**1974-P**	--	--	--	--	--	--
06154390	Peoples Creek near Cleveland	--	--	--	--	--	--	1982-84	--	--
06154400	**Peoples Creek near Hays**	220	**1966-P**	**1967-P**	--	--	--	1960-61, 1963,1994	--	--
06154410	**Little Peoples Creek near Hays**	13	**1973-P**	**1973-P**	--	--	--	1977-2003	1977-85 1988-2003	1977-85
06154430	Lodge Pole Creek at Lodge Pole	19.5	1987-2000	1987-2000	--	--	--	1982-84, 1988-92, 1994	1988-92	--
06154490	Willow Creek near Dodson	5.16	1983-92	1983-92	--	--	--	--	--	--
06154500	Peoples Creek near Dodson	670	1918-22, 1951-73, 1982-88	1952-66, 1968-73, 1982-88	--	--	--	1982-88	--	--
06154510	**Kuhr Coulee tributary near Dodson**	1.25	1983-92	**1983-P**	--	--	--	--	--	--
06154550	**Peoples Creek below Kuhr Coulee, near Dodson**	675	**1918-21, 1951-73, 1982-P**	**1989-P**	--	--	--	1989-92, 1994, 1999-2003	--	--
06155000	Nelson Reservoir near Saco	--	1928-95	--	--	--	--	--	--	--
06155005	Dodson North Canal near Dodson	--	--	--	--	1973	--	--	--	--
06155030	**Milk River near Dodson**	11,192	**1983-P**	**1983-P**	--	--	--	1994	--	--
06155100	Black Coulee near Malta	6.64	--	1956-67, 1986	--	--	--	--	--	--
06155200	Alkali Creek near Malta	162	--	1956-59, 1961-73, 1986	--	--	--	--	--	--
06155300	Disjardin Coulee near Malta	4.84	--	1956-2002	--	--	--	--	--	--
06155400	South Fork Taylor Coulee near Malta	5.08	--	1956-73, 1986	--	--	--	--	--	--
06155500	Milk River at Malta	11,762	1902-22, 1952	1903-09, 1911-13, 1915-22, 1952	--	--	--	--	--	--
06155600	**Murphy Coulee tributary near Hogeland**	2.62	--	**1974-P**	--	--	--	--	--	--
06155900	**Milk River at Cree Crossing, near Saco**	13,118	**2000-P**	**2000-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06156000	Whitewater Creek near international boundary	458	1927-80	1927-33, 1935-79	--	--	--	1965, 1977-80	--	--
06156100	**Lush Coulee near Whitewater**	9.58	--	**1972, 1974-P**	--	--	--	--	--	--
06156500	**Belanger Creek diversion canal near Vidora, Saskatchewan**	--	**1946-P**	--	--	--	--	--	--	--
06157000	**Cypress Lake near Vidora, Saskatchewan**	107	**1939-P**	--	--	--	--	--	--	--
06157500	**Cypress Lake east outflow canal near Vidora, Saskatchewan**	--	**1940, 1943-P**	--	--	--	--	--	--	--
06158000	Frenchman River above Eastend Reservoir, near Ravenscrag, Saskatchewan	601	1912-18, 1937-67	1913-15, 1917, 1937-66	--	--	--	1960	--	--
06158500	**Eastend Canal at Eastend, Saskatchewan**	--	**1937-P**	--	--	--	--	--	--	--
06159000	**Eastend Reservoir at Eastend, Saskatchewan**	619	**1937-P**	--	--	--	--	--	--	--
06159500	Frenchman River below Eastend Reservoir, near Eastend, Saskatchewan	619	1909-16, 1918-31, 1935-36, 1939-91	1909, 1911-15, 1918-31, 1940-91	--	--	--	--	--	--
06160500	Frenchman River at Morrison's, near Eastend, Saskatchewan	800	1937-55	1939-52	--	--	--	1960	--	--
06160600	Frenchman River below Eastern Irrigation Project, near Eastend, Saskatchewan	835	1937-55, 1962-75	1939-52, 1962-75	--	--	--	--	--	--
06161000	Frenchman River at 50-mile, near Bracken, Saskatchewan	1,248	1914-31, 1935-55	1914-17, 1919-31, 1936-52	--	--	--	--	--	--
06161300	**Huff Lake pumping canal near Val Marie, Saskatchewan**	--	**1963-P**	--	--	--	--	--	--	--
06161500	**Huff Lake gravity canal near Val Marie, Saskatchewan**	--	**1946-P**	--	--	--	--	--	--	--
06162000	**Huff Lake near Val Marie, Saskatchewan**	1,274	**1940-P**	--	--	--	--	--	--	--
06162500	**Newton Lake main canal near Val Marie, Saskatchewan**	--	**1937-P**	--	--	--	--	--	--	--
06163000	**Newton Lake near Val Marie, Saskatchewan**	1,349	**1937-P**	--	--	--	--	--	--	--
06163050	Frenchman River below Newton Lake, near Val Marie, Sask.	1,349	1976-94	--	--	--	--	--	--	--
06163400	Denniel Creek near Val Marie, Saskatchewan	251	1963-77	1963-76	--	--	--	--	--	--
06163500	Frenchman River below Val Marie, Saskatchewan	1,725	1937-53, 1963-76	1937-52, 1962-67, 1969-75	--	--	--	1960	--	--
06164000	**Frenchman River at international boundary**	2,120	**1917-P**	**1917-P**	--	--	--	1960,1964 1973, 1987-89	--	--
06164500	Frenchman Canal near Saco	--	1921, 1928-68	--	--	--	--	--	--	--
06164510	**Milk River at Juneburg Bridge, near Saco**	17,670	**1978-P**	**1978-P**	--	--	--	1978-96	--	--
06164590	Beaver Creek near Zortman	10.1	1983-92	1984-92	--	--	--	1984,1994	--	--
06164600	**Beaver Creek tributary near Zortman**	3.89	--	**1974-P**	--	--	--	--	--	--
06164615	Little Warm Creek at reservation boundary, near Zortman	6.31	1983-92	1983-92	--	--	--	1983-90	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06164620	Little Warm Creek near Lodge Pole	--	--	--	--	--	--	1982-83	--	--
06164623	**Little Warm Creek tributary near Lodge Pole**	2.42	1983-92	**1983-P**	--	--	--	1994	--	--
06164630	Big Warm Creek near Zortman	8.58	1983-87	1983-87	--	--	--	1983-84	--	--
06164640	Big Warm Creek near Lodge Pole	--	--	--	--	--	--	1982-83	--	--
06164800	Beaver Creek above Dix Creek, near Malta	929	1967-69, 1976-82	1967-69, 1974, 1976-82, 1986	--	--	--	--	--	--
06165000	Beaver Creek near Malta	1,010	1917-21	--	--	--	--	--	--	--
06165200	**Guston Coulee near Malta**	2.06	--	**1974-P**	--	--	--	--	--	--
06165500	Beaver Creek overflow near Bowdoin	--	1903-13	1903-06, 1909, 1912	--	--	--	--	--	--
06166000	**Beaver Creek below Guston Coulee, near Saco (Beaver Creek near Bowdoin)**	1,208	**1920-21, 1981-P**	**1982-93, 1995-P**	--	--	--	1980-85	--	--
06166500	Beaver Creek near Saco	1,224	1903-06, 1908-13	--	--	--	--	--	--	--
06167000	Beaver Creek near Brady's Ranch, at Ashfield	1,327	1918	--	--	--	--	--	--	--
06167100	Beaver Creek above dam, near Saco	1,338	--	--	--	--	--	1982-83, 1985	--	--
06167500	Beaver Creek near Hinsdale	1,785	1918-21, 1952	--	--	--	--	--	--	--
06168000	Bowray Ditch near Barnard	--	1914	--	--	--	--	--	--	--
06168500	Rock Creek at international boundary	241	1914-16, 1927-62	1927-61	--	--	--	--	--	--
06169000	Horse Creek at international boundary	73.5	1914-62	1915-33, 1935-61	--	--	--	--	--	--
06169500	**Rock Creek below Horse Creek, near international boundary**	328	**1916-26, 1956-P**	**1917, 1919-26, 1952, 1957-P**	--	--	--	1964,1965, 1977-96	1979-96	1979-96
06169600	South Creek tributary near Opheim	2.15	1983-87	1983-87	--	--	--	--	--	--
06169700	South Creek tributary No. 2 near Opheim	1.62	1983-87	1983-87	--	--	--	--	--	--
06169800	South Creek tributary No. 3 near international boundary	.32	1983-87	1983-87	--	--	--	--	--	--
06170000	McEachern Creek at international boundary	182	1924-77	1924-76	--	--	--	1965, 1978-80	--	--
06170050	Rock Creek below McEachern Creek, near international boundary	650	1983-87	1983-87	--	--	--	--	--	--
06170080	Starbuck Coulee near international boundary	4.16	1983-87	1983-87	--	--	--	--	--	--
06170200	Willow Creek near Hinsdale	283	1965-73	1965-73, 1979	--	--	--	--	--	--
06170500	Rock Creek Canal near Hinsdale	--	1918-20	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06171000	Rock Creek near Hinsdale	1,313	1906-07, 1912-20	1906-07, 1912, 1914-20, 1952	--	--	--	--	--	--
06171500	Milk River at Hinsdale	20,897	1908-14, 1952	--	--	--	--	--	--	--
06172000	Milk River near Vandalia	20,926	1915-25, 1928-39, 1952	1915, 1917-25, 1929-39, 1952	--	--	--	1970-73	--	--
06172000	Milk River at Vandalia	20,944	1970-73, 1983-86	1970-73, 1983-87	--	--	--	--	--	--
06172200	Buggy Creek near Tampico	105	1958-67	1958-67, 1972, 1982	--	--	--	--	--	--
06172300	**Unger Coulee near Vandalia**	11.1	--	**1958-P**	--	--	--	--	--	--
06172310	**Milk River at Tampico**	21,078	**1973-77, 1987-P**	**1974-77, 1988-P**	--	--	--	1974-77	--	--
06172350	Mooney Coulee near Tampico	14.3	--	1961-75, 1982	--	--	--	--	--	--
06172400	Milk River tributary No. 2 near Glasgow	1.79	--	1958-60	--	--	--	--	--	--
06172500	Sheepshed Reservoir	11.3	1955-67	--	--	--	--	--	--	--
06173000	Halfway Reservoir	16.2	1955-62	--	--	--	--	--	--	--
06173300	Willow Creek tributary near Fort Peck	0.86	--	1972, 1974-91	--	--	--	--	--	--
06173500	Burnett Northwest Reservoir	5.0	1954-59, 1960-67	--	--	--	--	--	--	--
06174000	Willow Creek near Glasgow	538	1954-87	1954-87, 1993	--	--	--	--	1960-64	--
06174200	Milk River near Glasgow	21,965	1952	--	--	--	--	1969-73	--	1969-73
06174300	**Milk River tributary No. 3 near Glasgow**	1.82	--	**1974-P**	--	--	--	--	--	--
06174500	**Milk River at Nashua**	22,332	**1939-P**	**1940-P**	--	**2000-P**	--	1950-53, 1959-94, 1999-2003	1974-94, 1999-2003	1974-94
06174550	Middle Fork Porcupine Creek near Baylor	--	--	--	--	--	--	1982-83	--	--
06174600	**Snow Coulee at Opheim**	3.11	--	**1972, 1974-P**	--	--	--	--	--	--
06174700	West Fork Porcupine Creek near Baylor	--	--	--	--	--	--	1982-83	--	--
06175000	Porcupine Creek at Nashua	725	1908-24, 1982-92	1909, 1912-21, 1923-24, 1939, 1982-93	--	--	--	1982-89	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06175400	Frazer Reservoir outlet near Frazer	--	--	--	--	--	--	1960-63 1966-97, 1969-72	--	--
06175500	Little Porcupine Creek at Frazer	280	1909-16, 1918-19	--	--	--	--	--	--	--
06175505	Little Porcupine Creek below diversion, at Frazer	--	--	--	--	--	--	1982-83	--	--
06175540	Prairie Elk Creek near Oswego	352	1975-85	1976-85	--	--	--	1976-79	1976-79	--
06175550	East Fork Sand Creek near Vida	8.51	--	1963-77	--	--	--	--	--	--
06175580	Sand Creek near Wolf Point	201	--	--	--	--	--	1976-77	1976-77	--
06175600	West Fork Wolf Creek near Lustre	6.57	--	1956-67	--	--	--	--	--	--
06175700	East Fork Wolf Creek near Lustre	9.61	--	1956-2002	--	--	--	--	--	--
06175800	Wolf Creek tributary near Wolf Point	2.46	--	1955-67	--	--	--	--	--	--
06175900	Wolf Creek tributary No. 2 near Wolf Point	6.10	--	1955-84	--	--	--	--	--	--
06176000	Wolf Point ditch at Wolf Point	--	1909-10	--	--	--	--	--	--	--
06176500	Wolf Creek near Wolf Point	251	1908-14, 1950-53, 1982-92	1910-12, 1950-54, 1956-70, 1972-73, 1982-93	--	--	--	1982-84	--	--
06176950	Missouri River tributary No. 6 near Wolf Point	0.53	--	1973-91	--	--	--	--	--	--
06177000	**Missouri River near Wolf Point**	82,290	**1928-P**	**1929-P**	--	**1979-85 2002-P**	--	**1949-51, 1961-62, 1965-68, 1970-73 2002-P**	**2002-P**	--
06177020	**Tule Creek tributary near Wolf Point**	1.91	--	**1974-P**	--	--	--	--	--	--
06177025	Tule Creek near Poplar	--	--	--	--	--	--	1982	--	--
06177050	East Fork Duck Creek near Brockway	12.4	--	1955-2002	--	--	--	--	--	--
06177100	Duck Creek near Brockway	54.0	--	1957-73	--	--	--	--	--	--
06177150	Redwater River at Brockway	216	--	1957-73, 1986	--	--	--	1980-83	--	--
06177200	Tusler Creek near Brockway	90.2	--	1957-72	--	--	--	--	--	--
06177250	Tusler Creek tributary near Brockway	3.17	--	1957-73, 1986	--	--	--	--	--	--
06177300	Redwater River tributary near Brockway	0.29	--	1954,1957, 1959-73	--	--	--	--	--	--
06177350	South Fork Dry Ash Creek near Circle	5.74	--	1955-60, 1962-72, 1986	--	--	--	--	--	--
06177400	McCune Creek near Circle	29.9	1982-85	1955-58, 1960-73, 1982-86	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06177500	**Redwater River at Circle**	547	**1929-72, 1974-2004**	**1929-30, 1932-72, 1975-2004**	--	--	--	1975-85	1975-85	--
06177520	Horse Creek near Circle	101	--	--	--	--	--	1977-79, 1982	1977-79	--
06177650	Redwater River near Richey	1,071	1982-86	1983-85	1982-85	--	--	1982-85	1982-84	--
06177700	**Cow Creek tributary near Vida**	1.71	1982-85	**1963-P**	--	--	--	--	--	--
06177720	West Fork Sullivan Creek near Richey	14.8	--	1972, 1974-92	--	--	--	--	--	--
06177800	Gady Coulee near Vida	0.91	--	1962-91	--	--	--	--	--	--
06177820	**Horse Creek tributary near Richey**	0.63	--	**1974-P**	--	--	--	--	--	--
06177825	Redwater River near Vida	1,974	1975-85	1976-85	--	--	--	1976-85	1976-85	--
06178000	**Poplar River at international boundary**	358	**1931-P**	**1931, 1933-P**	--	--	--	**1964-65, 1976-P**	**1977-P**	1977-78
06178150	Poplar River near Scobey	572	--	--	--	--	--	1975-80	1977-79	1977-78
06178500	**East Poplar River at international boundary**	541	**1931-P**	**1931-32, 1935-43, 1945-P**	**1982-P**	--	--	**1964-65, 1975-P**	**1975-P**	1977-81
06179000	East Fork Poplar River near Scobey	722	1935-40, 1975-79	1975-79	--	--	--	1975-95	1977-95	1977-78
06179100	**Butte Creek tributary near Four Buttes**	1.60	--	**1972, 1974-P**	--	--	--	--	--	--
06179200	Poplar River above West Fork, near Bredette	1,745	--	--	--	--	--	1976-81, 1985-93	1977-81	1977-78
06179500	West Fork Poplar River at international boundary	139	1931-53	1931-33, 1935-37, 1939-52	--	--	--	1976-83	1977-79	1977-78
06180000	West Fork Poplar River near Richland	428	1935-49	1935-49, 1990,1994	--	--	--	--	--	--
06180200	West Fork Poplar River near Four Buttes	732	--	--	--	--	--	1975-76	--	--
06180400	West Fork Poplar River near Bredette	1,010	--	--	--	--	--	1976-93	1977-84	1977-78
06180500	Poplar River near Bredette	2,940	1934-47	1934-47	--	--	--	--	--	--
06180600	Poplar River above Slims Coulee, near Poplar	--	--	--	--	--	--	1991-93	--	--
06181000	**Poplar River near Poplar**	3,174	**1908-24, 1947-69, 1975-79, 1982-P**	**1909,1915, 1921,1923, 1946, 1948-63, 1965-69, 1975-79, 1982-P**	--	2000-03	--	**1975-81, 1987-94, 1999-P**	**1975-81, 1987-94, 1999-P**	1975-78, 1987-94
06181200	Missouri River tributary No. 2 near Brockton	1.60	--	1962-76	--	--	--	--	--	--
06181500	Big Muddy Creek at international boundary	29.0	1949-52	--	--	--	--	--	--	--
06181995	Beaver Creek at international boundary	149	1977-94	1978-94	--	--	--	1977-91	1977-91	1977-78

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Missouri River Basin--Continued							
06182000	Beaver Creek near international boundary	224	1949-53	--	--	--	--	--	--	--
06182500	Big Muddy Creek at Daleview	279	1947-72	1948-72, 1975	--	--	--	--	--	--
06182700	Middle Fork Big Muddy Creek near Flaxville	3.12	--	1972, 1974-83	--	--	--	--	--	--
06183000	Big Muddy Creek at Plentywood	850	1948-53	1948-53, 1955-67	--	--	--	--	--	--
06183100	Box Elder Creek near Plentywood	9.40	--	1956-73, 1976	--	--	--	--	--	--
06183200	Box Elder Creek at dam site, near Plentywood	19.9	--	1953,1955, 1957-63	--	--	--	--	--	--
06183300	Marron Creek tributary near Plentywood	6.08	--	1955-2002	--	--	--	--	--	--
06183400	Spring Creek at Highway 16, near Plentywood	16.9	--	1956-73, 1976	--	--	--	--	--	--
06183450	**Big Muddy Creek near Antelope**	967	**1979-P**	**1979-P**	--	--	--	1979-93	1979-87	--
06183500	Big Muddy Creek at Reserve	1,044	1920-25, 1950-53	1920-21, 1923-24, 1950-53	--	--	--	--	--	--
06183700	**Big Muddy Creek diversion canal near Medicine Lake**	--	**1985-P**	--	--	--	--	--	--	--
06183750	**Lake Creek near Dagmar**	101	**1985-89, 1995-P**	**1986-89, 1996-P**	--	--	--	--	--	--
06183800	**Cottonwood Creek near Dagmar**	126	**1985-89, 1995-P**	**1986-89, 1996-P**	--	--	--	--	--	--
06183850	**Sand Creek near Dagmar**	122	**1985-89, 1995-P**	**1986-89, 1995-P**	--	--	--	--	--	--
06183900	Wolf Creek near Reserve	--	--	--	--	--	--	1982-84	--	--
06184000	Wolf Creek near Medicine Lake	165	1918-19	--	--	--	--	--	--	--
06184200	**Lost Creek tributary near Homestead**	1.90	--	**1972, 1974-P**	--	--	--	--	--	--
06184400	Smoke Creek near Flaxville	--	--	--	--	--	--	1982	--	--
06184500	Smoke Creek near Poplar	283	1918	--	--	--	--	--	--	--
06185000	Big Muddy Creek near Culbertson	2,447	1908-21	1909-14, 1916-21	--	--	--	--	--	--
06185100	Big Muddy Creek tributary near Culbertson	7.38	--	1963-77	--	--	--	--	--	--
06185110	Big Muddy Creek near mouth, near Culbertson	2,684	1982-92	1982-92	--	--	--	1982-89	--	--
06185150	Hardscrabble Creek near Culbertson	121	--	--	--	--	--	1981-83	1981-83	--
06185200	Missouri River tributary No. 3 near Culbertson	1.23	--	1963-77	--	--	--	--	--	--
06185300	Missouri River tributary No. 4 near Bainville	11.6	--	1963-77	--	--	--	--	--	--
06185400	**Missouri River tributary No. 5 at Culbertson**	3.67	--	**1963-P**	--	--	--	--	--	--
06185500	**Missouri River near Culbertson**	91,557	**1941-51, 1958-P**	**1942-51, 1959-P**	--	**2002-P**	1972-76	**1965-86, 1992-94, 1997-P**	**1972-86, 1997-P**	**1969-86, 2003-P**

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin							
06186000	Yellowstone Lake at Bridge Bay, Yellowstone National Park	1,006	1921-86	--	--	--	--	--	--	--
06186500	**Yellowstone River at Yellowstone Lake outlet, Yellowstone National Park**	991	**1922-82, 1984-86, 1989-P**	**1923-86, 1989-P**	1984-85	1984-85	--	--	--	--
06187000	Yellowstone River near Canyon Hotel, Yellowstone National Park	1,157	1913-51	1913-18, 1821-51	--	--	--	--	--	--
06187500	Tower Creek at Tower Falls, Yellowstone National Park	50.4	1922-43	1923-43	--	--	--	--	--	--
06187550	Yellowstone River at Tower Junction, Yellowstone National Park	1,342	1984-86	1984-86	1984-85	1984-85	--	--	--	--
06187915	**Soda Butte Creek at park boundary, at Silver Gate**	31.2	**1999-P**	**1999-P**	--	**2003-P**	--	1999-2001	1999-2001	2000-2001
06187950	**Soda Butte Creek near Lamar Ranger Station, Yellowstone National Park**	99	**1989-P**	**1989-P**	--	--	--	1989	--	--
06188000	**Lamar River near Tower Ranger Station, Yellowstone National Park**	660	**1922-69, 1985-86, 1988-P**	**1923-69, 1985-86, 1989-P**	--	--	1985-86, 1989-92	1989	1985-86, 1988-92,	--
06188500	East Fork Blacktail Deer Creek near Mammoth, Yellowstone National Park	10.3	1938-41	--	--	--	--	--	--	--
06189000	Blacktail Deer Creek near Mammoth, Yellowstone National Park	15	1938-45, 1989-93	1938-45, 1989-93	--	--	--	1989	--	--
06189500	Bear Creek at Jardine	40.8	1946-49	--	--	--	--	--	--	--
06190000	Lupine Creek near Mammoth, Yellowstone National Park	4.67	1938-41	--	--	--	--	--	--	--
06190370	Gardner River above Mammoth Hot Springs outflow, near Mammoth, Yellowstone National Park	--	--	--	--	--	--	1988-93	--	--
06190415	Mammoth Hot Springs outflow at Mammoth, Yellowstone National Park	--	--	--	--	--	--	1988-94	--	--
06190500	Gardner River at Mammoth, Yellowstone National Park	200	1922-39	1923-38	--	--	--	--	--	--
06190525	Gardner River sinkhole diversion at Mammoth, Yellowstone National Park	--	--	--	--	--	--	1989-92	--	--
06190530	Clematis Creek at Mammoth, Yellowstone National Park	2.71	--	--	--	--	--	1990-92	--	--
06190540	**Boiling River at Mammoth, Yellowstone National Park**	--	**1989-94 2003-P**	**1989-95 2003-P**	1989-90	**1989-90 2003-P**	--	1967, 1988-94	--	--
06191000	**Gardner River near Mammoth, Yellowstone National Park**	202	**1938-72, 1984-P**	**1939-72, 1984-P**	1985	1985	--	1988-93	1989	--
06191400	LaDuke Hot Springs near Corwin Springs	--	--	--	--	--	--	1988-94	--	--
06191500	**Yellowstone River at Corwin Springs**	2,619	**1889-93, 1910-P**	**1890-93, 1911-P**	1984-85	1977-81, 1984-85 2002	1985-92	1956-57, 1969-74, 1988-90 1999-2001	1965, 1985-92 1999-2001	1969-74 2000-2001
06191800	Big Creek near Emigrant	60.9	1973-79, 1983-85	1974-79, 1983-85	--	--	--	--	--	--
06192000	Mill Creek near Pray	148	1951-56	1951-56	--	--	--	--	--	--
06192500	**Yellowstone River near Livingston**	3,551	**1897-1905, 1928-32, 1937-P**	**1897-1905, 1929-32, 1938-P**	--	2000-03	1985-86	1970-94, 1999-2003	1965, 1979-94, 1999-2003	1979-94

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06193000	Shields River near Wilsall	87.8	1935-57	1936-57	--	--	--	--	--	--
06193500	Shields River at Clyde Park	543	1921-23, 1929-32, 1934-67	1921-23, 1929-32, 1934-67	--	--	--	--	1965	--
06194000	Brackett Creek near Clyde Park	57.9	1921-23, 1934-57	1921-23, 1934-57	--	--	--	--	--	--
06194500	Canyon Creek near Chadbourn	21.5	1923	--	--	--	--	--	--	--
06195000	Bangtail Creek at Chadbourn	13.3	1923	--	--	--	--	--	--	--
06195500	Willow Creek near Chadbourn	29.7	1923	--	--	--	--	--	--	--
06195600	**Shields River near Livingston**	852	**1979-P**	**1979-P**	--	2000-03	--	1999-2003	1999-2003	--
06196000	North Fork Big Timber Creek near Big Timber	36.6	1907-12	--	--	--	--	--	--	--
06196500	South Fork Big Timber Creek near Big Timber	28.1	1907-11	--	--	--	--	--	--	--
06197000	Big Timber Creek near Big Timber	74.9	1912-24	1912-16, 1918-24, 1971	--	--	--	--	--	--
06197020	Big Timber Creek near mouth, near Big Timber	--	--	--	--	--	--	--	1965	--
06197500	Boulder River near Contact	226	1910-16, 1929, 1950-69, 1970-74, 1981-83	1910-16, 1929, 1951-69, 1971-75, 1982-83	--	--	1972	1971-73	1971-73 1981-83	--
06197800	East Boulder River below Dry Fork Creek, near McLeod	--	--	--	--	--	--	--	1981-83	--
06198000	East Fork Boulder River near McLeod	85.6	1907-10, 1981-83	1908-09, 1982-83	--	--	--	--	1981-83	1982-83
06198450	West Fork Boulder River at West Boulder Reservoir, near McLeod	--	--	--	--	--	--	--	1981-83	--
06198500	West Fork Boulder River near Bruffeys	91.6	1904-10	1904-1908, 1910	--	--	--	--	--	--
06199000	West Boulder River at McLeod	135	1907-14	1907-14	--	--	--	--	1981-83	--
06199500	Boulder River near McLeod	476	1912-14	--	--	--	--	--	--	--
06200000	**Boulder River at Big Timber**	523	**1947-53, 1955-P**	**1947-53, 1955-P**	--	2000-03	--	1965, 1999-2003	1965, 1981-83, 1999-2003	--
06200400	Sweet Grass Creek near Melville	46.3	1907-12	--	--	--	--	--	--	--
06200500	Sweet Grass Creek above Melville	63.8	1913-25, 1937-69	1914-24, 1937-69, 1971,1975	--	--	--	--	--	--
06201000	Sweet Grass Creek below Melville	143	1907-24, 1937-43, 1946-52	1907-16, 1918-24, 1937-42, 1946-52	--	--	--	--	--	--
06201500	Sweet Grass Creek near Greycliff	368	1941-42	--	--	--	--	--	--	--
06201550	Yellowstone River tributary near Greycliff	2.72	--	1960-74	--	--	--	--	--	--
06201600	Bridger Creek near Greycliff	61.5	--	1960-75	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06201650	Work Creek near Reed Point	32.5	--	1959-73, 1978	--	--	--	--	--	--
06201700	**Hump Creek near Reed Point**	7.61	--	**1960-P**	--	--	--	--	--	--
06201750	Berry Creek near Columbus	23.5	--	1958-73, 1978	--	--	--	--	--	--
06201800	Stillwater River above Woodbine Creek, near Nye	160	1924-27	--	--	--	--	--	--	--
06202000	Woodbine Creek near Nye	19.4	1924-27	--	--	--	--	--	--	--
06202500	Stillwater River near Nye	180	1929-32	--	--	--	--	--	--	--
06202510	Stillwater River above Nye Creek, near Nye	193	1980-91	1980-91	--	--	--	--	1981-83	1982-83
06202530	Stillwater River above West Fork, at Nye	193	--	--	--	--	--	--	1971-73	--
06202590	West Fork Stillwater River above Cathedral Creek, near Nye	--	--	--	--	--	--	--	1981-83	--
06202597	Castle Creek near Nye	--	--	--	--	--	--	--	1973	--
06202598	West Fork Stillwater River below Castle Creek, near Nye	122	--	--	--	--	--	--	1971-73 1981-83	--
06202600	Stillwater River at Nye	337	1969-77	1970-76	--	--	--	--	--	--
06202610	Stillwater River at Beehive	371	--	--	--	--	1972-73	1971-73, 1982-83	1973, 1982-83	1982-83
06203000	East Rosebud Creek near Roscoe	105	1920-21	--	--	--	--	--	--	--
06203500	East Rosebud Creek at Roscoe	125	1921-24	--	--	--	--	--	--	--
06204000	**Mystic Lake near Roscoe**	46.9	**1936-P**	--	--	--	--	--	--	--
06204050	**West Rosebud Creek near Roscoe**	52.1	**1965-P**	**1966-P**	--	--	--	--	--	--
06204150	Fishtail Creek near Dean	--	--	--	--	--	--	--	1981-83	--
06204170	**Meadow Creek near Dean**	6.11	--	**2003-P**	--	--	--	--	--	--
06204220	Butcher Creek near Luther	9.69	--	--	--	--	--	1960	1960-61	--
06204240	Butcher Creek near Roscoe	--	--	--	--	--	--	--	1960-61	--
06204260	Butcher Creek near Fishtail	--	--	--	--	--	--	--	1960-61	--
06204300	Butcher Creek near Absarokee	39.6	1960-62	--	--	--	--	1960	--	--
06204500	Rosebud Creek near Absarokee	394	1935-69	1935-69	--	--	--	--	--	--
06204700	Rosebud Creek at Absarokee	401	1910-14	--	--	--	--	--	--	--
06205000	**Stillwater River near Absarokee**	975	**1910-14, 1935-P**	**1911-14, 1935-P**	--	2001-2002	--	1999-2003	1965,1981, 1999-2003	--
06205050	Stillwater River near Columbus	--	--	--	--	--	--	--	1982-83	--
06205100	Allen Creek near Park City	7.17	--	1961-2002	--	--	--	--	--	--
06205200	Yellowstone River at Laurel	8,189	--	--	--	--	--	1951-52, 1974-79	1975-78	1974-79
06207500	**Clarks Fork Yellowstone River near Belfry**	1,154	**1921-P**	**1922-P**	--	--	1984	1966-88	1965,1971 1984	--
06207510	Big Sand Coulee at Wyoming-Montana State line	134	1973-81	1973-80	--	--	1973-81	--	--	--
06207520	Silver Tip Creek below Amoco dam, near Belfry	--	--	--	--	--	--	1972	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
	Part 6--Yellowstone River Basin--Continued									
06207523	Silver Tip Creek below Sinclair oil field, near Belfry	--	--	--	--	--	--	1972	--	--
06207530	Silver Tip Creek above Gobblers draw, near Belfry	--	--	--	--	--	--	1971	--	--
06207540	Silver Tip Creek near Belfry	88.0	1968-75	1968-75	--	--	1969-72, 1974	1969-75	1970-75	--
06207600	Jack Creek tributary near Belfry	0.85	--	1975-91	--	--	--	--	--	--
06207700	North Fork Bluewater Creek near Bridger	8.1	--	--	--	--	--	--	1960-61, 1964-68	--
06207800	Bluewater Creek near Bridger	28.1	1960-70	1960-70, 1978	--	--	1962-70	1960	1964-65	--
06207850	Bluewater Creek at Sanford Ranch	43.9	--	--	--	--	1964-70	--	1960-61 1964-70	--
06207870	Bluewater Creek near Fromberg	46.6	--	--	--	--	1964-70	1960	1960-61, 1964-68	--
06207900	Bluewater Creek at Fromberg	53.2	1961-64	--	--	--	1962-64	1960,1980	1960-761, 1964-68, 1970,1980	--
06208000	Clarks Fork Yellowstone River at Fromberg	1,940	1905-14	1905-13	--	--	--	--	--	--
06208400	Elbow Creek near Joliet	48.6	1984	1984	--	--	--	1984	1984	--
06208500	**Clarks Fork Yellowstone River at Edgar**	2,022	**1921-69, 1987-P**	**1922-32, 1934-69, 1987-P**	--	2000-03	1972-73	1964-65, 1999-2003	1965,1973, 1999-2003	2000-01
06208800	Clarks Fork Yellowstone River near Silesia	2,093	1970-87	1970-86	--	--	1984	1984	1984	--
06209000	Glacier Lake near Red Lodge	3.77	1939-47, 1960-64	--	--	--	--	--	--	--
06209010	Rock Creek below Glacier Lake, near Red Lodge	3.89	1960-64	--	--	--	--	--	--	--
06209500	**Rock Creek near Red Lodge**	105	**1932-82, 1985-86, 2000-P**	**1932, 1934-82, 1985-86, 2000-P**	--	2001-2002	--	--	--	--
06210000	West Fork Rock Creek below Basin Creek, near Red Lodge	63.1	1937-57	1938-56	--	--	--	--	--	--
06210500	West Fork Rock Creek near Red Lodge	66.9	1932-44	1932, 1934-44	--	--	--	--	--	--
06210950	**Cole Creek near Red Lodge**	4.30	--	**2003-P**	--	--	--	--	--	--
06211000	**Red Lodge Creek above Cooney Reservoir, near Boyd**	143	**1937-P**	**1937-P**	--	--	--	--	--	--
06211500	**Willow Creek near Boyd**	53.3	**1937-P**	**1937-P**	--	--	--	--	--	--
06212000	Cooney Reservoir near Boyd	206	1937-95	--	--	--	--	--	--	--
06212500	Red Lodge Creek below Cooney Reservoir, near Boyd	210	1937-2002	1938-2002	--	--	--	--	--	--
06213000	Red Lodge Creek near Boyd	234	1932-37	--	--	--	--	--	--	--
06213500	Rock Creek at Joliet	539	1946-53	1946-53	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06214000	Rock Creek at Rockvale	569	1920-22, 1952-40, 1984-90	1921-22, 1932,1934, 1935-40, 1985-90	--	--	--	--	--	--
06214050	Clarks Fork Yellowstone River near Laurel	2,783	--	--	--	--	--	1969-73	--	1969-73
06214100	Yellowstone River near Laurel	11,036	--	--	--	--	--	1969-72	--	1969-72
06214150	Mills Creek at Rapelje	3.32	--	1974-2002	--	--	--	--	--	--
06214500	**Yellowstone River at Billings**	11,805	**1904-05, 1928-P**	**1904-05, 1918, 1929-P**	--	2001-2002	1977-81	1963-93 1999-2001	1965, 1975-93 1999-2001	1975-93 2000-01
06215000	Pryor Creek above Pryor	39.6	1921-24, 1967-74	1921-24, 1967-74	--	--	--	1987-90	--	--
06215500	Lost Creek near Pryor	9.72	1921-24	1922-24	--	--	--	--	--	--
06216000	**Pryor Creek at Pryor**	117	**1921-24, 1966-P**	**1922-24, 1967-P**	--	--	--	--	--	--
06216200	**West Wets Creek near Billings**	8.80	--	**1955-P**	--	--	--	--	--	--
06216300	West Buckeye Creek near Billings	2.64	--	1955-73, 1978	--	--	--	--	--	--
06216500	Pryor Creek near Billings	440	1911-24, 1938-54	1912-24, 1938-53, 1955-73, 1978	--	--	--	--	--	--
06216900	Pryor Creek near Huntley	582	1979-99	1978-99	--	--	--	--	--	--
06217000	Pryor Creek at Huntley	606	1904-17	1905-06, 1908, 1910-15, 1978	--	--	--	--	--	--
06217300	**Twelvemile Creek near Shepherd**	9.05	--	**1973-P**	--	--	--	--	--	--
06217500	Yellowstone River at Huntley	12,840	1908-16	1908-16	--	--	--	1951-52, 1971-81	1975-81	1972-81
06217700	**North Fork Crooked Creek tributary near Shepherd**	6.85	--	**1962-P**	--	--	--	--	--	--
06217750	Fly Creek at Pompeys Pillar	285	1969-81	1969-81	--	--	--	1969-81	--	--
06217800	Yellowstone River tributary No. 2 near Pompeys Pillar	0.70	--	1962-73	--	--	--	--	--	--
06217950	Buffalo Creek near Custer	221	1980-83	1980-83	--	--	--	--	--	--
06218000	Yellowstone River at Junction (at Custer)	14,427	1906-08	--	--	--	--	1969-70	--	1969-70
06286258	Big Coulee near Lovell, Wyoming	30.1	1970-78	--	--	--	--	--	--	--
06286270	Porcupine Creek near Lovell, Wyoming	135	1964-67	--	--	--	--	--	--	--
06286340	Dry Head Creek near Pryor	58.0	1965-66	--	--	--	--	--	--	--
06286350	Dry Head Creek above Hoodoo Creek, near Pryor	80.0	1966-68	1966-67	--	--	--	--	--	--
06286370	Big Bull Elk Creek near St. Xavier	35.0	1965-68	--	--	--	--	--	--	--
06286390	Black Canyon Creek near St. Xavier	52.0	1965-66	1965-66	--	--	--	--	--	--
06286395	Black Canyon Creek below Three Springs Creek, near St. Xavier	75.0	1966-68	1966-67	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06286400	**Bighorn Lake near St. Xavier**	19,626	**1965-P**	--	---	--	--	--	--	--
06286490	**Big Horn Canal near St. Xavier**	--	**1966-P**	--	--	--	--	--	--	--
06286500	Big Horn Canal below wasteway, near St. Xavier	--	1947-52	--	--	--	--	--	--	--
06287000	**Bighorn River near St. Xavier**	19,667	**1934-P**	**1935-P**	--	1970-79	--	1967-81		1969-70
06287500	Soap Creek near St. Xavier	98.3	1911-14, 1939-53, 1968-72	1939-53, 1963, 1968-72, 1978	--	--	--	--	--	--
06287700	Soap Creek near mouth, near St. Xavier	111	1914-24	1914-18, 1920-24	--	--	--	--	--	--
06288000	Rotten Grass Creek near St. Xavier	147	1911-22, 1968-73	1914-17, 1968-72, 1978	--	--	--	--	--	--
06288200	Beauvais Creek near St. Xavier	100	1967-77	1968-78	--	--	--	1967-78	1968-78	1969-78
06288500	Bighorn River near Hardin	20,722	1904-25, 1928-33	1904-24, 1929-33	--	1968-74	--	1951, 1969-73, 1987-89	--	1970-73
06288960	Little Bighorn River near Parkman, Wyoming	137	1970-72	1972	--	--	--	--	--	--
06288990	West Fork Little Bighorn River near Parkman, Wyoming	38.2	1970-72, 1983-87	--	--	--	--	--	--	--
06289000	**Little Bighorn River at State line, near Wyola**	182	**1939-P**	**1939-P**	--	--	--	1993-2001	1993-2001	1993-2001
06289500	Little Bighorn River near Wyola	251	1912-24	1912-24	--	--	--	1993-2001	1993-2001	1993-2001
06290000	**Pass Creek near Wyola**	111	**1935-56, 1983-P**	**1935-56, 1978, 1983-P**	--	--	--	--	--	--
06290200	Little Bighorn River tributary near Wyola	4.43	--	1973-86	--	--	--	--	--	--
06290500	**Little Bighorn River below Pass Creek, near Wyola**	428	**1939-75, 1977-2004**	**1939-2004**	--	--	1970-73	1970-75, 1977	1970-73	--
06291000	Owl Creek near Lodge Grass	163	1939-45, 1980-92	1939-42, 1944-45, 1980-92	--	--	--	--	--	--
06291200	Lodge Grass Creek at State Line, near Wyola	16.7	1983-84	1983-89	--	--	--	--	--	--
06291500	**Lodge Grass Creek above Willow Creek diversion, near Wyola**	80.7	**1939-74, 1983-P**	**1939-74, 1978, 1983-P**	--	--	--	--	--	--
06292000	Lodge Grass Creek near Wyola	88.9	1921-24	--	--	--	--	--	--	--
06292500	Lodge Grass Creek near Lodge Grass	143	1912-16, 1921-24	1912-15, 1921-24	--	--	--	--	--	--
06293000	Lodge Grass Creek at Lodge Grass	170	1916-20	--	--	--	--	--	--	--
06293300	**Long Otter Creek near Lodge Grass**	11.7	--	**1973-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06293500	Little Bighorn River near Crow Agency	1,181	1912-24, 1928-33, 1938-60	1912, 1914-24, 1929-32, 1938-60	--	--	--	--	--	--
06293900	Little Bighorn River at Crow Agency	1,190	1905-06	--	--	--	--	--	--	--
06294000	**Little Bighorn River near Hardin**	1,294	**1953-P**	**1953-P**	--	--	1970-77	1970-79, 1987-89, 1993-2001	1971-75, 1977, 1993-2001	1993-2001
06294400	**Andresen Coulee near Custer**	2.35	--	**1963-P**	--	--	--	--	--	--
06294500	**Bighorn River above Tullock Creek, near Bighorn**	22,414	**1982-P**	**1982-P**	--	2000-03	--	1999-2003	1999-2003	--
06294600	**East Cabin Creek tributary near Hardin**	8.63	1982-85	**1973-P**	--	--	--	--	--	--
06294690	Tullock Creek near Bighorn	446	1975-82	1975-82	--	--	--	--	--	--
06294700	Bighorn River at Bighorn	22,885	1945-81	1945-81	--	--	1960-72	1960-92	1960-72, 1975-92	1975-92
06294800	Unknown Creek near Bighorn	14.6	--	1962-76, 1979,1991	--	--	--	--	--	--
06294840	Yellowstone River at Myers	37,674	--	--	--	--	--	1974-77	--	1975-77
06294850	Buckingham Coulee near Myers	2.63	--	1962-76, 1979,1991	--	--	--	--	--	--
06294900	Middle Fork Froze to Death Creek tributary near Ingomar	1.36	--	1962-76	--	--	--	--	--	--
06294920	East Fork Sarpy Creek near Colstrip	79.2	--	--	--	--	--	1981-83	1981-83	--
06294930	**Sarpy Creek tributary near Colstrip**	4.44	--	**1972-P**	--	--	--	--	--	--
06294940	Sarpy Creek near Hysham	453	1973-84	1974-84	--	--	--	1975-84	1975-84	--
06294950	Starved to Death Creek near Sanders	36.9	1980-85	1980-85	--	--	--	--	--	--
06294960	Anderson Creek at Vananda	5.71	--	1973-84, 1991	--	--	--	--	--	--
06294980	East Fork Armells Creek near Colstrip	97.3	--	--	--	--	--	1975-85	1975-85	--
06294985	**East Fork Armells Creek tributary near Colstrip**	1.87	--	**1973-P**	--	--	--	--	--	--
06294991	West Fork Armells Creek near Forsyth	148	--	--	--	--	--	1975-77	1975-77	--
06294995	Armells Creek near Forsyth	370	1974-84, 1988-95	1975-84, 1988-95	--	--	--	1975-86, 1988-95	1975-86, 1988-95	--
06295000	**Yellowstone River at Forsyth**	40,146	**1921-23, 1977-P**	**1921-23, 1978-P**	--	--	1978-81	**1974-82 1999-P**	**1975-82 1999-P**	**1975,1978, 1979,2000-2002,2004**
06295020	**Short Creek near Forsyth**	3.23	--	**1962-P**	--	--	--	--	--	--
06295050	Little Porcupine Creek near Forsyth	614	--	1958-73, 1975,1978, 1986,1993	--	--	--	--	--	--
06295100	Rosebud Creek near Kirby	35.5	1982-85, 1988	1960-74, 1982-2002	--	--	--	--	--	--
06295110	Rosebud Creek at Kirby	--	--	--	--	--	--	1978-79	1978-79	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06295113	**Rosebud Creek at reservation boundary, near Kirby**	123	**1980-P**	**1980-P**	--	--	--	**1980-84 2003-P**	**1980-84 2003-P**	**2003-2004**
06295130	Rosebud Creek tributary near Busby	1.14	--	1963-77	--	--	--	--	--	--
06295200	Whitedirt Creek near Lame Deer	1.58	--	1959-73	--	--	--	--	--	--
06295250	**Rosebud Creek near Colstrip**	799	**1974-P**	**1975-P**	--	--	--	1975-85	1975-84	--
06295350	Greenleaf Creek near Colstrip	30.5	--	--	--	--	--	1975	1975	--
06295380	Cow Creek near Colstrip	27.2	--	--	--	--	--	1980-85	1980-85	--
06295400	Rosebud Creek above Pony Creek, near Colstrip	961	--	--	--	--	--	1975-78	1975-77	--
06295420	Snider Creek near Brandenberg	11.9	--	--	--	--	--	1978	1978	--
06295500	Rosebud Creek near Rosebud	1,193	1938-43	1938-43	--	--	--	1975-77	1975-77	--
06296000	Rosebud Creek near Forsyth	1,279	1947-54	1948-53, 1655-57, 1959, 1961-67, 1969,1978	--	--	--	--	--	--
06296003	**Rosebud Creek at mouth, near Rosebud**	1,302	**1974-P**	**1975-P**	--	--	--	1975-86, 1988-93, 1999-2003	1975-86, 1988-93, 1999-2003	--
06296100	**Snell Creek near Hathaway**	10.5	1982-85	**1963-77, 1979, 1982-P**	--	--	--	--	--	--
06296115	**Reservation Creek near Miles City**	6.29	--	**1973-P**	--	--	--	--	--	--
06296120	Yellowstone River near Miles City	42,847	--	--	1969-84	--	--	1969-84	1975-84	1974-81
06306000	Tongue River near Acme, Wyoming	894	1939-57	--	--	--	--	--	--	--
06306100	Squirrel Creek near Decker	33.6	1975-85	1976-85	--	--	--	1976-85	1976-85	--
06306250	**Prairie Dog Creek near Acme, Wyoming**	358	**1971-79, 2004**	**2004**	**2004**	--	--	**2004**	**2004**	--
06306300	**Tongue River at State line, near Decker**	1,453	**1960-P**	**1961-P**	**1983-87 2001-P**	**1966-76 2001-P**	--	**1966-P**	**1966-P**	**1986-88, 2003-2004**
06306500	Tongue River near Decker	1,585	1928-38	1928-38	--	--	--	--	--	--
06306800	Deer Creek near Decker	47.7	--	--	--	--	--	1975-77	1975-76	--
06306900	Spring Creek near Decker	34.7	--	1958-86	--	--	--	1978,1980	1978,1980	--
06306950	South Fork Leaf Rock Creek near Kirby (Leaf Rock Creek near Kirby)	4.53	1982-85	1958, 1960-96	--	--	--	--	--	--
06307000	**Tongue River Reservoir near Decker**	1,770	**1938-P**	--	--	--	--	--	--	--
06307500	**Tongue River at Tongue River Dam, near Decker**	1,770	**1939-P**	**1939-P**	**1981-87, 2004**	--	--	**1951, 1976-95, 2004**	**1976-96, 2004**	--
06307510	Fourmile Creek near Birney	22.3	--	--	--	--	--	1975	1975	--
06307520	Canyon Creek near Birney	50.2	--	1972-91	--	--	--	--	--	--
06307525	Prairie Dog Creek above Jack Creek, near Birney	6.57	1979-83	1979-83	--	--	--	1978-81, 1983	1978-83	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06307528	Prairie Dog Creek near Birney	19.6	1979-84	1979-84	--	--	--	1978-80, 1983	1978-83	--
06307530	Bull Creek near Birney	45.8	--	--	--	--	--	1975	1975	--
06307540	Hanging Woman Creek at State line, near Otter	90.2	--	--	--	--	--	1980, 1982-83	1980, 1982-83	--
06307560	East Trail Creek near Otter	31.3	1976-81	1977-81	--	--	--	1977-80	1977-78, 1980	--
06307563	Corral Creek near Otter	26.5	--	--	--	--	--	1980-83	1980-83	--
06307567	Horse Creek near Birney	16.0	--	--	--	--	--	1983	1983	--
06307570	Hanging Woman Creek below Horse Creek, near Birney	321	--	--	--	--	--	1978-83, 1986-87	1978-83, 1986-87	--
06307600	**Hanging Woman Creek near Birney**	470	**1974-84, 1986-95 2003-P**	**1974-84, 1986-95 2003-P**	**1981-83, 1986-87 2004**	--	--	**1975-95 2003-P**	**1975-95 2003-P**	**2004**
06307610	Tongue River below Hanging Woman Creek, near Birney	2,533	--	--	--	--	--	1974-79	1975-79	1975-79
06307615	Cook Creek near Birney	62.6	--	--	--	--	--	1975-77	1975-77	--
06307616	**Tongue River at Birney Day School, near Birney**	2,621	**1980-P**	**1980-P**	**2004**	--	--	**1980-93 2004**	**1980-86 2004**	--
06307620	Tie Creek near Birney	18.7	--	1973-84, 1991	--	--	--	--	--	--
06307640	Spring Creek near Ashland	1.56	--	1962-76	--	--	--	--	--	--
06307660	Walking Horse Creek near Ashland	3.33	--	1963-78	--	--	--	--	--	--
06307665	Otter Creek near Otter	40.9	--	--	--	--	--	1978-84	1978-84	--
06307670	Bear Creek at Otter	90.4	--	--	--	--	--	1975-76	1975-76	--
06307700	**Cow Creek near Fort Howes Ranger Station, near Otter**	8.37	--	**1972-P**	--	--	--	--	--	--
06307717	Otter Creek below Fifteenmile Creek, near Otter	453	1982-86	1982-85	1983-85	--	--	1982-85	1982-85	--
06307720	**Brian Creek near Ashland**	8.03	--	**1973-P**	--	--	--	--	--	--
06307725	Otter Creek above Tenmile Creek, near Ashland	466	--	--	--	--	--	1978-81	1978-81	--
06307730	Threemile Creek near Ashland	51.5	--	--	--	--	--	1975	1975	--
06307735	Home Creek near Ashland	58.7	--	--	--	--	--	1977-84	1977-84	--
06307740	**Otter Creek at Ashland**	707	**1973-85, 1988-95 2003-P**	**1973-85, 1988-95 2003-P**	**1981-85 2004**	--	--	**1975-85, 1988-95 2003-P**	**1975-85, 1988-95 2003-P**	2003
06307760	Stebbins Creek near Ashland	5.41	--	1963-77	--	--	--	--	--	--
06307780	Stebbins Creek at mouth, near Ashland	20.8	--	1963-91	--	--	--	--	--	--
06307800	Tongue River near Ashland	3,830	1956-73	1967-72	--	--	--	--	--	--
06307810	Beaver Creek near Ashland	92.3	--	--	--	--	--	1975-76	1975-76	--
06307830	**Tongue River below Brandenberg bridge, near Ashland**	3,948	**1973-84, 2000-P**	**1974-84, 2000-P**	**2001-P**	2001-03	1975-81	**1974-81, 2000-P**	**1975, 1978-81, 2000-P**	**2003-2004**
06307840	Liscom Creek near Ashland	47.6	--	--	--	--	--	1975,1977	1975,1977	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06307890	Foster Creek near Volborg	116	--	--	--	--	--	1975-77	1975-77	--
06307930	Jack Creek near Volborg	5.47	--	1973-2002	--	--	--	--	--	--
06308000	Tongue River near Miles City	4,539	1929-33	--	--	--	--	--	--	--
06308100	Sixmile Creek tributary near Epsie	0.80	--	1972-91	--	--	--	--	--	--
06308160	Pumpkin Creek near Loesch	102	--	--	--	--	--	1976-79	1976-79	--
06308170	Little Pumpkin Creek near Volborg	101	--	--	--	--	--	1976-77	1976-77	--
06308190	Pumpkin Creek near Volborg	386	--	--	--	--	--	1976-77	1976-77	--
06308200	**Basin Creek tributary near Volborg**	0.14	--	**1955-P**	--	--	--	--	--	--
06308300	Basin Creek near Volborg	11.1	--	1955-73	--	--	--	--	--	--
06308330	**Deer Creek tributary near Volborg**	1.65	--	**1973-P**	--	--	--	--	--	--
06308340	**LaGrange Creek near Volborg**	3.66	--	**1973-P**	--	--	--	--	--	--
06308400	**Pumpkin Creek near Miles City**	697	**1972-85 2004**	**1973-85 2004**	**2004**	--	--	**1976-85, 2004**	**1976-85, 2004**	--
06308500	**Tongue River at Miles City**	5,379	**1938-42, 1946-P**	**1938-41, 1946-P**	**2004**	2000-03	1978-86	**1949-94, 1999-P**	**1975-94, 1999-P**	1975-94
06309000	**Yellowstone River at Miles City**	48,253	**1922-23, 1928-P**	**1923, 1929-P**	--	--	--	1948-52, 1965	1965	--
06309020	Rock Springs Creek tributary at Rock Springs	0.96	--	1963-78, 1987	--	--	--	--	--	--
06309040	Dry House Creek near Angela	38.6	--	1963-77, 1987	--	--	--	--	--	--
06309060	North Fork Sunday Creek tributary No. 2 near Angela	0.22	--	1962-91	--	--	--	--	--	--
06309075	Sunday Creek near Miles City	714	1975-84	1975-84	--	--	--	--	--	--
06309078	Tree Coulee near Kinsey	4.13	--	1972, 1974-2002	--	--	--	--	--	--
06309079	Muster Creek near Kinsey	28.5	--	--	--	--	--	1978-80	1978-80	1978-80
06309080	**Deep Creek near Kinsey**	11.5	--	**1962-P**	--	--	--	--	--	--
06309090	Ash Creek near Locate	6.23	--	1962-76	--	--	--	--	--	--
06309145	Custer Creek near Kinsey	151	--	--	--	--	--	1978-80	1978-80	1978-80
06324500	**Powder River at Moorhead**	8,086	**1929-72, 1974-P**	**1923, 1929-72, 1975-P**	**1986-89 2001-P**	--	1975-96	**1949, 1951-53, 1956-57, 1969-72, 1975-92 2001-P**	**1975-1997 2001-P**	1969-72
06324700	Sand Creek near Broadus	10.2	--	1955-84	--	--	--	--	--	--
06324710	Powder River at Broadus	8,748	1975-92	1976-92	--	--	1976-92	1979, 1988-90	1976-92, 1995	--
06324995	**Badger Creek at Biddle**	6.06	--	**1972-P**	--	--	--	--	--	--
06325000	Little Powder River at Biddle	1,541	1938-43	--	--	--	--	--	--	--
06325400	East Fork Little Powder River tributary near Hammond	3.45	--	1974-84	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06325500	**Little Powder River near Broadus**	1,974	1947-53, 1957-72	1947-53, 1956-72, 1978	--	--	--	**2002-P**	**2002-P**	--
06325550	Little Powder River at mouth, near Broadus	--	--	--	--	--	--	1978-79, 1988-90 2001-2002	1988-89 2001-2002	--
06325650	Powder River near Powderville	--	--	--	--	--	--	1978-90	1988	--
06325700	**Deep Creek tributary near Powderville**	3.00	--	**1973-P**	--	--	--	--	--	--
06325950	**Cut Coulee near Mizpah**	2.23	--	**1973-P**	--	--	--	--	--	--
06326000	Powder River near Mizpah	12,132	1928-33	--	--	--	--	1989	--	--
06326050	Mizpah Creek at Olive	129	--	--	--	--	--	1976-79	1976-79	--
06326200	Mizpah Creek near Volberg	510	--	--	--	--	--	1976-79	1976-77	--
06326300	Mizpah Creek near Mizpah	797	1975-86	1975-86	--	--	--	1976-84, 1989-90	1976-84	--
06326400	Meyers Creek near Locate	9.42	--	1962-76, 1982	--	--	--	--	--	--
06326500	**Powder River near Locate**	13,068	**1938-P**	**1938-P**	1951-62, 1975-81, 1988-90	--	1975-84	**1948-63, 1975-94, 1999-P**	**1965, 1974-94 1999-P**	1975-94
06326507	Locate Creek near Ismay	--	--	--	--	--	--	1982-83	1982-83	--
06326510	Locate Creek tributary near Locate	0.91	--	1973-91	--	--	--	--	--	--
06326520	Powder River at mouth, near Terry	13,512	--	--	--	--	--	1978,1989	--	--
06326530	Yellowstone River near Terry	63,447	--	--	--	--	--	1974-83	1975-83	1975-80
06326550	Cherry Creek tributary near Terry	2.52	--	1973-91	--	--	--	--	--	--
06326555	Cherry Creek near Terry	358	1980-81, 1990-94	1980-81, 1990-94	1990-94	--	1990-94	1978-81	1978-81, 1990-94	--
06326580	**Lame Jones Creek tributary near Willard**	0.51	--	**1974-P**	--	--	--	--	--	--
06326600	O'Fallon Creek near Ismay	669	1978-92	1962-92	--	--	--	1978-84	1978-84	1978-80
06326650	O'Fallon Creek tributary near Ismay	0.16	--	1962-76	--	--	--	--	--	--
06326700	Deep Creek near Baker	3.79	--	1962-76, 1978	--	--	--	--	--	--
06326800	Pennel Creek tributary near Baker	0.86	--	1962-91	--	--	--	--	--	--
06326850	O'Fallon Creek at Mildred	1,396	1975-78	1976-78	--	--	--	--	--	--
06326900	Yellowstone River tributary No. 4 near Fallon	0.67	--	1962-76	--	--	--	--	--	--
06326940	**Spring Creek tributary near Fallon**	3.10	--	**1972-P**	--	--	--	--	--	--
06326950	**Yellowstone River tributary No. 5 near Marsh**	0.87	--	**1962-P**	--	--	--	--	--	--
06326952	Clear Creek near Lindsay	101	1982-85, 1988	1982-86	--	--	--	--	--	--
06326953	Clear Creek near Hoyt	138	--	1980	--	--	--	1978-80	1978-80	1978-80
06326960	**Timber Fork Upper Sevenmile Creek tributary near Lindsay**	1.13	--	**1974-P**	--	--	--	--	--	--
06326995	Upper Sevenmile Creek near Lindsay	137	--	--	--	--	--	1978-80	1978-80	1978-80

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 6--Yellowstone River Basin--Continued							
06327000	Upper Sevenmile Creek near Glendive	--	1921-22	--	--	--	--	--	--	--
06327450	**Cains Coulee at Glendive**	3.72	--	**1991-P**	--	--	--	--	--	--
06327500	**Yellowstone River at Glendive**	66,788	**1898-1911, 1932-34 2003-P**	**1903-10, 1932-34 2003-P**	--	--	--	1950	--	--
06327550	**South Fork Horse Creek tributary near Wibaux**	1.34	--	**1973-P**	--	--	--	--	--	--
06327700	Griffith Creek near Glendive	15.5	--	1955-63, 1965-67	--	--	--	--	--	--
06327720	**Griffith Creek tributary near Glendive**	3.48	--	**1965, 1974-P**	--	--	--	--	--	--
06327790	**Krug Creek tributary No. 2 near Wibaux**	0.44	--	**1974-P**	--	--	--	--	--	--
06327800	Krug Creek tributary near Wibaux	1.74	--	1955-61	--	--	--	--	--	--
06327850	Glendive Creek near Glendive	300	--	--	--	--	--	1978-81	1978-81	--
06328000	Deer Creek near Glendive	198	1921-22	--	--	--	--	1978-80	1978-80	1978-80
06328100	**Yellowstone River tributary No. 6 near Glendive**	2.93	--	**1974-P**	--	--	--	--	--	--
06328200	Lower Sevenmile Creek near Bloomfield	25.2	1982-85	1983-87	--	--	--	--	--	--
06328400	Thirteenmile Creek tributary near Bloomfield	0.67	--	1972, 1974-91	--	--	--	--	--	--
06328700	Linden Creek at Intake	4.20	--	1958-73, 1980	--	--	--	--	--	--
06328800	Indian Creek at Intake	0.46	--	1958-73	--	--	--	--	--	--
06328900	War Dance Creek near Intake	3.69	--	1958-73, 1980	--	--	--	--	--	--
06329000	Cottonwood Creek near Intake	85.3	--	--	--	--	--	1978-81	1978-81	--
06329200	Burns Creek near Savage	233	1958-67, 1975-84, 1986	1958-67, 1975-84, 1986	--	--	--	1976-79, 1984,1986	1976-79, 1984,1986	--
06329350	**Alkali Creek near Sidney**	0.49	--	**1974-P**	--	--	--	--	--	--
06329500	**Yellowstone River near Sidney**	69,083	**1910-31, 1933-P**	**1911-31, 1934-P**	--	--	**1972-81, 1983-P**	**1948-P**	**1965, 1972-P**	**1970-95 2004**
06329510	Fox Creek tributary near Lambert	5.01	--	1972, 1974-96	--	--	--	--	--	--
06329520	Fox Creek near Lambert	183	--	--	--	--	--	1981-83	1981-83	--
06329540	Lone Tree Creek near Sidney	39.4	--	--	--	--	--	1981-83	1981-83	--
06329570	**First Hay Creek near Sidney**	29.1	--	**1963-P**	--	--	--	--	--	--
06333500	Little Missouri River at Alzada	671	1904-07	--	--	--	--	1949-51	--	--
06333850	North Creek near Alzada	1.25	1951	1951-52, 1956-77	--	--	--	--	--	--
06333900	North Creek spreader diversion near Alzada	1.29	1952-56	--	--	--	--	--	--	--
06334000	Little Missouri River near Alzada	904	1911-25, 1928-32, 1935-69	1912-25, 1929-32, 1935-69	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
		Part 6--Yellowstone River Basin--Continued								
06334100	Wolf Creek near Hammond	10.1	--	1955-2002	--	--	--	--	--	--
06334200	Willow Creek near Alzada	122	--	1958-73	--	--	--	--	--	--
06334330	**Little Missouri River tributary near Albion**	1.49	--	**1972-P**	--	--	--	--	--	--
06334610	Hawks Nest Creek tributary near Albion	0.92	--	1973-2002	--	--	--	--	--	--
06334625	**Coal Creek tributary near Mill Iron**	0.64	--	**1974-P**	--	--	--	--	--	--
06334630	Boxelder Creek at Webster	1,092	1959-73	1960-73, 1975	--	--	--	1972-73	--	--
06334640	North Fork Coal Bank Creek near Mill Iron	15.6	--	1962-76	--	--	--	--	--	--
06334720	Soda Creek tributary near Webster	2.22	--	1962-91	--	--	--	--	--	--
06336447	Duck Creek near Wibaux	46.5	1978-85	1978-85	--	--	--	1979	1978-79	--
06336450	Spring Creek near Wibaux	4.00	1955-73	1956-73	--	--	--	--	--	--
06336500	Beaver Creek at Wibaux	351	1938-69, 1979-83	1872,1921, 1929, 1938-69, 1979-83	--	--	--	1979-84	1979-84	--
06336510	Upper Hay Creek tributary No. 2 near Wibaux	4.1	1978-82	1978-82	--	--	--	--	--	--
06336515	Hay Creek near Wibaux	11.4	1978-82	1978-82	--	--	--	--	--	--
06336545	Little Beaver Creek near Wibaux	96.2	1978-81	1978-81	--	--	--	1979-80	1979-80	--
06336550	Beaver Creek near Wibaux	--	1958-64	--	--	--	--	--	--	--
		Part 12--Kootenai River Basin								
12300000	Kootenay River at Newgate, British Columbia	7,660	1931-72	1931-71	--	--	--	1949,1965	--	--
12300110	**Lake Koocanusa at international boundary**	--	--	--	--	--	--	**1972-2004**	--	**1972-82, 2003-04**
12300200	Young Creek near Rexford	36.0	1973-75	1974-75	--	--	--	--	--	--
12300400	Cayuse Creek near Trego	5.29	--	1972-84	--	--	--	--	--	--
12300500	Fortine Creek near Trego	110	1947-53	1947-54, 1958, 1960-73	--	--	--	--	--	--
12300800	Deep Creek near Fortine	18.9	--	1954-91	--	--	--	--	--	--
12301000	Grave Creek near Fortine	54.9	1923-24	--	--	--	--	--	--	--
12301300	**Tobacco River near Eureka**	440	**1958-P**	**1948, 1959-P**	--	1971-85	--	1971-76	--	1974-76
12301500	Kootenai River near Rexford	8,420	1929-40, 1968-71	1929-40, 1948, 1968-71	--	--	1968-71	1967-72	1968-71	--
12301550	Pinkham Creek near Rexford	75.7	1973-81	1973-81	--	--	--	--	--	--
12301600	Lake Koocanusa below Pinkham Creek, near Rexford	--	--	--	--	--	--	1972-76	--	1972-76
12301700	Kootenai River tributary near Rexford	0.86	--	1959-70	--	--	--	--	--	--
12301800	Gold Creek near Rexford	6.12	--	1959-69	--	--	--	--	--	--

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			Discharge or contents		Water quality					
					Daily			Periodic		
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			Part 12--Kootenai River Basin--Continued							
12301810	Big Creek near Rexford	137	1972-81	1973-82	--	--	--	--	--	--
12301830	**Lake Koocanusa at Tenmile Creek, near Libby**	--	--	--	--	--	--	**1972-2004**	--	**1972-2004**
12301850	Kootenai River at Worland bridge, near Libby	8,892	1961-71	1961-71	--	--	--	--	--	--
12301900	Little Jackson Creek near Libby	2.60	--	1961-69	--	--	--	--	--	--
12301919	**Lake Koocanusa at forebay, near Libby**	--	--	--	--	--	--	**1972-2004**	--	**1972-82, 2003-04**
12301920	**Lake Koocanusa near Libby**	8,985	**1972-P**	--	--	--	--	--	--	--
12301921	Libby Dam near Libby	--	--	--	--	--	--	1964	--	--
12301933	**Kootenai River below Libby Dam, near Libby**	8,985	**1972-P**	**1972-P**	--	2001-03	1968-76	**1967-2004**	1968-71	1973-82
12301990	Fisher River above Wolf Creek, near Libby	768	--	--	--	--	--	1967-70	1968-70	--
12301993	Wolf Creek tributary near Libby	2.76	--	1974-84	--	--	--	--	--	--
12301997	Richards Creek near Libby	9.50	--	1973-91	--	--	--	--	--	--
12301999	Wolf Creek near Libby	216	1967-77	1967-77	--	--	1968-70	1967-70	1969-70	--
12302000	Fisher River near Jennings	780	1951-69	1948, 1951-69, 1974	--	-	--	--	--	--
12302050	Peoples Creek near Libby	2.54	--	1961-67, 1976	--	--	--	--	--	--
12302055	**Fisher River near Libby**	838	**1967-P**	**1948, 1969-P**	--	1968-85	1968-76	1967-76, 1999-2003	1969-72, 1974-76, 1999-2003	1974-76
12302400	Shaughnessy Creek near Libby	1.16	--	1959-91	--	--	--	--	--	--
12302500	Granite Creek near Libby	23.6	1933-34, 1936-44, 1960-69	1933, 1937-44, 1948,1954, 1959-69, 1974	--	--	--	--	--	--
12303000	Kootenai River at Libby	10,240	1911-91	1911-91	--	--	--	1969-72, 1978	--	1969-73
12303100	Flower Creek near Libby	11.1	1960-92	1960-92	--	--	--	--	--	--
12303400	Ross Creek near Troy	23.8	--	1972-91	--	--	--	1971, 1976-78	1976-78	--
12303430	Stanley Creek near Troy	12.8	--	--	--	--	--	1976-78	1976-78	--
12303440	Camp Creek near Troy	11.3	--	1972-91	--	--	--	--	--	--
12303490	Lake Creek near Troy	179	--	--	--	--	--	1976-78	1976-78	--
12303500	Lake Creek at Troy	210	1945-57, 1983-95	1945-57, 1974, 1983-96	--	--	--	--	--	--
12304000	Callahan Creek at Troy	85.8	1911-12, 1914-16	--	--	--	--	--	--	--
12304040	Basin Creek near Yaak	27.4	1990-2000	1990-2000	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
12304060	Blacktail Creek near Yaak	8.66	--	1964, 1972-84	--	--	--	--	--	--
12304120	Zulu Creek near Yaak	5.27	--	1972-84	--	--	--	--	--	--
12304200	Yaak River near Yaak	493	1957-62	1956-62	--	--	--	--	--	--
12304250	Whitetail Creek near Yaak	2.48	--	1960-74	--	--	--	--	--	--
12304300	Cyclone Creek near Yaak	5.73	--	1960-91	--	--	--	--	--	--
12304400	Fourth of July Creek near Yaak	7.84	--	1960-74	--	--	--	--	--	--
12304500	**Yaak River near Troy**	766	**1910-16, 1956-P**	**1948,1954, 1956-P**	--	1963-85 2000-03	--	1999-2003	1999-2003	--
	Part 12--Pend Oreille River Basin									
12323170	Silver Bow Creek above Blacktail Creek, at Butte	--	1984-94	1984-94	--	--	--	--	--	--
12323200	Blacktail Creek near Butte	14.7	1984-88	1984-88	--	--	--	--	--	--
12323220	Basin Creek near Butte	37.6	1984-86	--	--	--	--	--	--	--
12323230	Blacktail Creek at Harrison Avenue, at Butte	--	--	--	--	--	--	1993-95, 1997-2003	1993-95, 1997-2003	--
12323240	**Blacktail Creek at Butte**	95.4	**1988-P**	**1989-P**	--	--	--	--	--	--
12323248	Silver Bow Creek above wastewater plant outflow, at Butte	--	1999-2002	2000-2002	--	--	--	--	--	--
12323250	**Silver Bow Creek below Blacktail Creek, at Butte**	103	**1984-P**	**1984-P**	--	--	--	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323300	Smith Gulch near Silver Bow	4.36	--	1959-2002	--	--	--	--	--	--
12323500	German Gulch Creek near Ramsay	40.6	1955-69	1955-69, 1975	--	--	--	--	--	--
12323600	**Silver Bow Creek at Opportunity**	363	**1988-P**	**1989-P**	--	--	1993-95	**1993-95, 1997-P**	**1993-95, 1997-P**	--
12323700	**Mill Creek at Opportunity**	43.2	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12323720	**Willow Creek at Opportunity**	30.8	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12323750	**Silver Bow Creek at Warm Springs**	473	**1972-79, 1994-P**	**1972-79, 1989, 1993-P**	--	--	1993-95	**1971, 1993-P**	**1993-P**	--
12323760	**Warm Springs Creek near Anaconda**	157	**1998-P**	**1998-P**	--	--	--	--	--	--
12323770	**Warm Springs Creek at Warm Springs**	163	**1984-P**	**1984-P**	--	**2000-P**	--	**1993-P**	**1993-P**	--
12323800	**Clark Fork near Galen**	651	**1988-P**	**1989-P**	--	1991-2002	--	**1971-74 1988-P**	**1988-P**	1971-74
12323850	**Lost Creek near Galen**	60.5	**2003-P**	**2003-P**	--	--	--	**2003-P**	**2003-P**	--
12324000	Racetrack Creek near Anaconda	39.5	1911-13	--	--	--	--	--	--	--
12324100	Racetrack Creek below Granite Creek, near Anaconda	39.5	1914-17, 1957-73	1958-73, 1975	--	--	--	--	--	--
12324200	**Clark Fork at Deer Lodge**	995	**1979-P**	**1979-P**	--	1979-83, 1992-98, 2001-2002	**1985-P**	**1963, 1969-71, 1985-P**	**1985-P**	1969-71
12324250	Cottonwood Creek at Deer Lodge	45.4	--	1964, 1975-91	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12324300	Clark Fork near Garrison	1,139	1961-62	--	--	--	--	--	--	--
12324590	**Little Blackfoot River near Garrison**	407	**1973-P**	**1973-P**	--	2000-03	--	**1963, 1985-2004**	**1985-2004**	--
12324600	Clark Fork at Garrison	1,550	--	--	--	--	--	1963, 1969-71	--	1970-71
12324660	Gold Creek at Goldcreek	64.1	1964-66	--	--	--	--	--	--	--
12324680	**Clark Fork at Goldcreek**	1,704	**1978-P**	**1978-P**	--	1992-98	--	**1992-P**	**1993-P**	--
12324700	Clark Fork tributary near Drummond	4.61	--	1958-95	--	--	--	--	--	--
12324800	Morris Creek near Drummond	12.6	--	1960-74, 1980	--	--	--	--	--	--
12325000	Georgetown Lake near Philipsburg	50.1	1939-97	--	--	--	--	--	--	--
12325500	**Flint Creek near Southern Cross**	52.6	**1940-98, 2000-P**	1941-98	--	--	--	--	--	--
12326000	Trout Creek above main canal, near Philipsburg	4.09	1946-49	--	--	--	--	--	--	--
12326500	Trout Creek near Southern Cross	36.1	1946-51	--	--	--	--	--	--	--
12327000	Trout Creek near Philipsburg	34.9	1939-43, 1945-46	--	--	--	--	--	--	--
12327090	Flint Creek above Fred Burr Creek, near Philipsburg	108	1994-98	1994-98	--	--	--	--	--	--
12327100	Fred Burr Creek near Philipsburg	15.7	1994-96	1994-96	--	--	--	--	--	--
12327500	Marshall Creek near Philipsburg	22.8	1942-43	--	--	--	--	--	--	--
12328000	Marshall Creek at mouth, near Philipsburg	23.2	1939-42	--	--	--	--	--	--	--
12328500	Flint Creek near Philipsburg	192	1939-41	--	--	--	--	1972-73	--	1972-73
12329000	Flint Creek above Maxville siding, at Maxville	207	1939-41	--	--	--	--	--	--	--
12329500	**Flint Creek at Maxville**	208	**1941-P**	**1942-P**	--	--	--	--	--	--
12330000	**Boulder Creek at Maxville**	71.3	**1939-P**	**1940-P**	--	--	--	--	--	--
12330100	Flint Creek below Boulder Creek, near Maxville	--	--	--	--	--	--	1971	--	--
12330500	Flint Creek near Maxville	325	1946-49	--	--	--	--	--	--	--
12331000	Flint Creek near Hall	325	1939	--	--	--	--	--	--	--
12331100	Flint Creek below Douglas Creek, near Hall	339	1994-98	1995-98	--	--	--	--	--	--
12331500	**Flint Creek near Drummond**	490	**1990-2004**	**1991-2004**	--	--	--	**1972-73, 1985-2004**	**1985-2004**	1972-73
12331600	Clark Fork at Drummond	2,378	1967-68, 1973-83	1967, 1973-83	--	--	--	1971-74	--	1971-74
12331700	Edwards Gulch at Drummond	4.69	--	1960-62, 1974-91, 1996-2002	--	--	--	--	--	--
12331800	**Clark Fork near Drummond**	2,501	**1993-P**	**1993-P**	--	--	--	**1993-P**	**1993-P**	--
12331900	Clark Fork near Clinton	2,629	1979-90, 1992-94	1980-90, 1992-94	--	--	--	1963	--	--
12332000	**Middle Fork Rock Creek near Philipsburg**	123	**1937-P**	**1938-P**	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12332500	East Fork Rock Creek Reservoir near Philipsburg	30.3	1939-95	--	--	--	--	--	--	--
12333000	East Fork Rock Creek near Philipsburg	30.3	1935-43	--	--	--	--	--	--	--
12333500	Rock Creek near Quigley	749	1922-27	1922	--	--	--	--	--	--
12334000	Ranch Creek near Quigley	42.7	1922-27	1922-27	--	--	--	--	--	--
12334500	Rock Creek below Ranch Creek, near Quigley	794	1911-12	--	--	--	--	--	--	--
12334510	**Rock Creek near Clinton**	885	**1972-P**	**1972-P**	--	1979-83, 1995-2002	--	**1985-2004**	**1985-2004**	--
12334550	**Clark Fork at Turah Bridge, near Bonner**	3,641	**1985-P**	**1986-P**	--	1992-98	**1985-P**	**1985-P**	**1985-P**	--
12334600	Blackfoot River near Lincoln	15.1	1969-70	1969-70, 1975	--	--	--	1969-70	--	--
12334620	Blackfoot River below First Gulch, near Lincoln	25.9	--	--	--	--	--	1995-97	1995-97	--
12334650	**Blackfoot River below Alice Creek, near Lincoln**	96.9	1971-75	1971-75	--	--	--	**1971-74, 1995-97, 2004**	**1971-73, 1995-97, 2004**	1973
12334680	**Landers Fork near Lincoln**	130	--	--	--	--	--	**1995-97, 2004**	**1995-97, 2004**	--
12334700	Blackfoot River below Seven-up Pete Creek, near Lincoln	255	--	--	--	--	--	1973, 1995-97	1995-97	1973, 1995-97
12334800	**Blackfoot River at Dalton Mountain Road bridge, near Lincoln**	399	--	--	--	--	--	**1973, 1995-97, 2004**	**1995-97, 2004**	1973, 1995-97
12334900	Blackfoot River at Blackfoot Canyon Campground, near Lincoln	437	--	--	--	--	--	1973	--	1973 1995-97
12335000	Blackfoot River near Helmville	481	1940-54	1941-53, 1964, 1974-75	--	--	--	--	--	--
12335100	**Blackfoot River above Nevada Creek, near Helmville**	494	**2000-P**	--	--	2000-2002	--	**1995-97 2003-P**	**1995-97 2003-P**	--
12335500	**Nevada Creek above reservoir, near Helmville**	116	**1939-P**	**1940-P**	--	--	--	**1980, 2003-P**	**1980,1994-2000, 2003-P**	--
12336000	Nevada Creek near Finn	144	1934-39	--	--	--	--	--	--	--
12336500	Nevada Lake near Finn	142	1939-95	--	--	-	--	--	--	--
12336600	**Nevada Creek below reservoir, near Helmville**	143	--	--	--	--	--	**2004**	**2004**	--
12337000	Nevada Creek near Helmville	165	1946-49	--	--	--	--	--	--	--
12337500	Douglas Creek near Helmville	84.8	1946-47	--	--	--	--	--	--	--
12337800	**Nevada Creek at mouth, near Helmville**	308	**2002-P**	--	--	--	--	**2002-P**	**2002-P**	--
12337820	**Blackfoot River at Raymond Bridge, near Ovando**	--	--	--	--	--	--	**2004**	**2004**	--
12338000	North Fork Blackfoot River near Ovando	228	1921-23	--	--	--	--	--	--	--
12338100	Rock Creek above Salmon Creek, near Ovando	7.60	1998	1998	--	--	--	--	--	--
12338300	**North Fork Blackfoot River above Dry Gulch, near Ovando**	314	**1998-P**	**1998-P**	--	2001-2002	--	**1995-97, 2004**	**1995-97, 2004**	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12338500	Blackfoot River near Ovando	1,274	1940-63	1941-64, 1975	--	--	--	--	--	--
12338540	Monture Creek above Dunham Creek, near Ovando	64.7	--	1978-91	--	--	--	--	--	--
12338550	Dunham Creek at mouth, near Ovando	31.7	--	1978-91	--	--	--	--	--	--
12338600	Monture Creek at Forest Service boundary, near Ovando	105	--	1964, 1974-91	--	--	--	--	--	--
12338690	**Monture Creek near Ovando**	140	1973-83	1974-83	--	--	--	**2004**	**2004**	--
12338700	**Blackfoot River at Scotty Brown Bridge, near Ovando**	1,428	--	--	--	--	--	**1995-97, 2004**	**1995-97, 2004**	1995-97
12339000	Blackfoot River at Clearwater	1,550	1921-23	--	--	--	--	--	--	--
12339300	Deer Creek near Seeley Lake	19.8	--	1974-91	--	--	--	--	--	--
12339450	Clearwater River near Clearwater	345	1975-92	1975-92, 1997	--	--	--	1995-97	1995-97	--
12339500	**Clearwater River at Clearwater**	391	1921-23	--	--	--	--	**2004**	**2004**	--
12339800	Blackfoot River near Potomac	2,046	1957-65	1957-65	--	--	--	--	--	--
12339900	West Twin Creek near Bonner	7.33	--	1959-91	--	--	--	--	--	--
12340000	**Blackfoot River near Bonner**	2,290	**1898-99, 1901, 1903-05 1939-P**	**1899-1901, 1903-05, 1940-P**	--	**2000-P**	1986-95	**1963, 1985-P**	**1985-P**	--
12340200	Marshall Creek near Missoula	5.63	--	1959-73, 1980	--	--	--	--	--	--
12340500	**Clark Fork above Missoula**	5,999	**1929-P**	**1908, 1930-P**	--	1977-83	**1986-P**	**1969-71 1986-P**	**1986-P**	1969-71
12341000	Rattlesnake Creek at Missoula	79.7	1899-1901, 1958-67	1899,1948, 1958-59, 1961-64, 1966-67	--	--	--	--	--	--
12341500	Clark Fork at Missoula	6,084	1898-1907	1899-1907	--	--	--	1963	--	--
12342000	Painted Rocks Lake near Conner	317	1940-95	--	--	--	--	--	--	--
12342500	**West Fork Bitterroot River near Conner**	317	**1941-P**	**1941-P**	--	--	--	2001-2003	2001-2003	--
12342950	Trapper Creek near Conner	28.5	--	1974-91	--	--	--	--	--	--
12343000	**West Fork Bitterroot River near Darby**	552	1910-17	1911-17	--	--	--	**2004**	**2004**	--
12343300	**Laird Creek near Sula**	9.3	--	**2001-P**	--	--	--	--	--	--
12343400	**East Fork Bitterroot River near Conner**	381	**1956-72 2001-2004**	**1956-72 2001-2004**	--	--	--	**2001-2004**	**2001-2004**	--
12343500	East Fork Bitterroot River at Conner	405	1910-16, 1937-57	1937-57	--	--	--	--	--	--
12344000	**Bitterroot River near Darby**	1,049	**1937-P**	**1938-P**	--	**2001-P**	--	**1956, 1997-98 2001-P**	**1997-98 2001-P**	--
12344300	Burke Gulch near Darby	6.50	--	1958-82, 2001-03	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
	Part 12--Pend Oreille River Basin--Continued									
12344500	Lake Como near Darby	54.6	1939-99	--	--	--	--	1956	--	--
12345000	Rock Creek near Darby	55.4	1946-53, 1957-59	1948-53, 1958-59	--	--	--	--	--	--
12345500	Rock Creek Canal near Darby	--	1946, 1948-53	--	--	--	--	--	--	--
12345800	Camas Creek near Hamilton	5.05	--	1958-73	--	--	--	--	--	--
12345850	Sleeping Child Creek near Hamilton	65.2	1973-77	1972-91	--	--	--	1956	--	--
12346000	Bitterroot River near Grantsdale	1,414	1902-07	--	--	--	--	--	--	--
12346500	Skalkaho Creek near Hamilton	87.8	1949-53, 1957-79, 2001-03	1948-54, 1958-79, 2001-03	--	--	--	1956,1980, 2001-03	1980, 2001-03	--
12347000	Skalkaho Creek at Brennan's ranch, near Hamilton	96.2	1920-24	1920-24, 1948	--	--	--	--	--	--
12347360	Bitterroot River at Hamilton	--	--	--	--	--	--	1997-98	1997-98	--
12347500	Blodgett Creek near Corvallis	25.9	1947-69	1947-69, 1972	--	--	--	1956	--	--
12348000	Blodgett Creek near Hamilton	28.3	1938-43	1938-43	--	--	--	--	--	--
12348200	Bitterroot River near Corvallis	1,711	1959-63	--	--	--	--	--	--	--
12348500	Willow Creek near Corvallis	21.9	1920-24, 1957-66	1920-22, 1958-73	--	--	--	1956	--	--
12349000	Willow Creek at Anfinson Ranch, near Corvallis	23.2	1938-43	1938-43	--	--	--	--	--	--
12349500	Fred Burr Creek near Victor	17.7	1947-51	--	--	--	--	--	--	--
12350000	Bear Creek near Victor	26.8	1938-55, 1957-59	1938-54, 1958-59	--	--	--	1956	--	--
12350200	Gash Creek near Victor	3.37	--	1958-73	--	--	--	--	--	--
12350250	**Bitterroot River at Bell Crossing, near Victor**	1,963	**1987-P**	**1987-P**	--	--	--	1997-98	1997-98	--
12350300	Big Creek near Victor	--	--	--	--	--	--	1956	--	--
12350500	Kootenai Creek near Stevensville	28.9	1949-53, 1957-63	1948-53, 1958-73	--	--	--	1956	--	--
12351000	Burnt Fork Bitterroot River near Stevensville	73.2	1920, 1922-24, 1938-62	1920, 1922-24, 1938-73	--	--	--	1956	1965	--
12351200	**Bitterroot River near Florence**	2,354	**1957-66 2003-2004**	**1958-66, 1974,1982 2003-2004**	--	--	--	**1956, 1997-98, 2004**	**1997-98, 2004**	--
12351400	Eightmile Creek near Florence	19.5	1957-63	1958-73	--	--	--	1956	--	--
12351500	Lolo Creek near Lolo	231	1911-15	--	--	--	--	--	--	--
12352000	Lolo Creek above Sleeman Creek, near Lolo	250	1951-60	1951-60, 1972,1974	--	--	--	--	--	--
12352200	Hays Creek near Missoula	4.16	--	1959-66, 1968-74, 1980	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12352500	**Bitterroot River near Missoula**	2,814	**1898-1901, 1903-04, 1989-P**	**1899-1901, 1903-04, 1990-P**	--	**2000-P**	--	**1997-P**	**1997-P**	--
12352980	Bitterroot River at Maclay bridge, near Missoula	2,850	--	--	--	--	--	1970-73	--	1970-73
12353000	**Clark Fork below Missoula**	9,003	**1929-P**	**1930-P**	--	1977-82	--	1979-95	1979-95	1979-95
12353250	Ninemile Creek near Alberton	50.2	--	1972, 1974-82	--	--	--	--	--	--
12353280	Ninemile Creek near Huson	170	1973-83	1974-83	--	--	--	--	--	--
12353300	Clark Fork near Alberton	9,272	1959-63	--	--	--	--	1969-71	--	1970-71
12353400	Negro Gulch near Alberton	8.02	--	1959-73, 1984-91	--	--	--	--	--	--
12353450	Fish Creek below West Fork, near Tarkio	242	--	--	--	1985-91	--	--	--	--
12353500	Clark Fork at Tarkio	9,882	1945-49	--	--	--	--	--	--	--
12353650	Clark Fork at Superior	10,210	--	--	--	1985-91	--	--	--	--
12353800	Thompson Creek near Superior	12.2	--	1961-79, 1982	--	--	--	--	--	--
12353820	Dry Creek near Superior	46.3	1982-86	1982-91	--	--	--	--	--	--
12353850	East Fork Timber Creek near Haugan	2.72	--	1961-75, 1979	--	--	--	--	--	--
12353900	St. Regis River tributary near St. Regis	1.16	1959-61	--	--	--	--	--	--	--
12354000	**St. Regis River near St. Regis**	303	**1910-17, 1958-75, 2002-P**	**1911-17, 1934,1948, 1954, 1959-75, 2002-P**	--	1985-91	--	--	--	--
12354100	North Fork Little Joe Creek near St. Regis	14.7	--	1960-74	--	--	--	--	--	--
12354500	**Clark Fork at St. Regis**	10,709	**1910-P**	**1911-23, 1929-P**	--	2002	--	1999-2003	--	--
12354700	Clark Fork near Paradise	10,794	--	--	--	1985-91	--	--	--	--
12355000	**Flathead River at Flathead, British Columbia**	427	**1929-95, 1999-P**	**1929-94, 2000-P**	--	1975-91	1975-79, 1985-91,	**1949-50, 1965,1970, 1975-93, 1999-P**	**1965,1970, 1975-93 1999-P**	1970, 1975-93
12355100	Starvation Creek near Flathead, British Columbia	16.4	1986-87	1986-87	--	--	--	--	--	--
12355150	Tuchuck Creek near Flathead, British Columbia	10.1	1986-88	1986-88	--	--	--	--	--	--
12355350	Big Creek at Big Creek Ranger Station, near Columbia Falls	82.1	--	1964, 1973-91	--	--	--	1980	1980	--
12355500	**North Fork Flathead River near Columbia Falls**	1,548	**1910-17, 1929-P**	**1911-17, 1929-P**	1976-79	**1976-P**	1976-79	1950,1970, 1976-79 1999-2003	1976-79, 1999-2003	1970, 1976-79
12355600	Middle Fork Flathead River at Schafer Ranger Station, near Essex	--	--	--	--	--	--	1970	--	1970

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Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
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					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12355700	Middle Fork Flathead River near Essex	408	1957-61	1942-43, 1945-53, 1956-61, 1964	--	--	--	--	--	--
12355900	Middle Fork Flathead River above Bear Creek, near Essex	--	--	--	--	--	--	1970	--	1970
12356000	Skyland Creek near Essex	8.09	1946-52	1946-52, 1954, 1959-75	--	--	--	--	--	--
12356500	Bear Creek near Essex	20.4	1946-52	1946-52, 1964, 1975-91	--	--	--	--	--	--
12357000	Middle Fork Flathead River at Essex	510	1940-53, 1956-64	1940-54, 1956-64	--	--	--	--	--	--
12357300	Moccasin Creek near West Glacier	2.38	--	1959-75	--	--	--	--	--	--
12357400	Middle Fork Flathead River tributary at West Glacier	0.14	--	1960-74	--	--	--	--	--	--
12357500	Middle Fork Flathead River at West Glacier	943	1911-23, 1929-33, 1943-48	1911-23, 1929-33, 1944-48	--	--	--	--	--	--
12358000	McDonald Creek at Apgar	175	1912-14	--	--	--	--	--	--	--
12358500	**Middle Fork Flathead River near West Glacier**	1,128	**1939-P**	**1940-P**	--	--	--	1949-50, 1970, 1998-2003	1999-2003	1970
12358900	South Fork Flathead River above Harrison Creek, near Swan Lake	--	--	--	--	--	--	1970	--	1970
12359000	South Fork Flathead River at Spotted Bear Ranger Station, near Hungry Horse	958	1948-57, 1959-67	1948-57, 1960-67	--	--	--	--	--	--
12359500	Spotted Bear River near Hungry Horse	184	1949-56	1948-56, 1964	--	--	--	--	--	--
12359800	**South Fork Flathead River above Twin Creek, near Hungry Horse**	1,160	**1964-82, 1985-P**	**1964-82, 1985-P**	--	--	--	1970	--	1970
12360000	Twin Creek near Hungry Horse	47.0	1948-56, 1965-67	1948-56, 1964-67	--	--	--	--	--	--
12360500	Lower Twin Creek near Hungry Horse	22.4	1948-56	1948-56	--	--	--	--	--	--
12360600	Soldier Creek near Hungry Horse	4.77	1965-67	1965-66	--	--	--	--	--	--
12361000	Sullivan Creek near Hungry Horse	71.3	1948-56, 1959-76	1948-56, 1960-76	--	--	--	--	--	--
12361500	Graves Creek near Hungry Horse	27.0	1948-56, 1965-67	1948-56, 1964-67	--	--	--	--	--	--
12361600	Canyon Creek near Hungry Horse	5.8	1965-67	1965-66	--	--	--	--	--	--
12361700	Goldie Creek near Hungry Horse	3.29	1965-67	1966	--	--	--	--	--	--
12361880	Wounded Buck Creek near Hungry Horse	13.6	1965-67	1965-66	--	--	--	--	--	--
12361950	Hungry Horse Creek near Hungry Horse	23.3	1969-72	1970	--	--	--	--	--	--
12361960	Emery Creek near Hungry Horse	26.4	1965-67	1965-66	--	--	--	--	--	--
12362000	**Hungry Horse Reservoir near Hungry Horse**	1,654	**1951-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12362500	**South Fork Flathead River near Columbia Falls**	1,663	**1910-16, 1923-P**	**1911-P**	--	**1964-68, 1979-P**	--	1949-50	--	--
12363000	**Flathead River at Columbia Falls**	4,464	**1922-23, 1928-P**	**1894, 1922-23, 1928-P**	1996-67, 1979-81	**1949-50, 1963-67, 1979-P**	1965-67	**1949-50, 1963-67, 1970, 1979-94 2002-P**	**1965,1967, 1979-94 2002-P**	1979-94
12363500	Flathead River near Kalispell	4,500	--	--	--	--	1968-69	--	1968	--
12363900	Rock Creek near Olney	3.61	--	1961-75	--	--	--	--	--	--
12363920	Stillwater River at Olney	146	1973-82	1973-82	--	--	--	--	--	--
12364000	Logan Creek at Tally Lake, near Whitefish	183	1931-34, 1936-42, 1945-47	1936-42, 1945-47	--	--	--	--	--	--
12364500	Logan Creek near Whitefish	199	1931	--	--	--	--	--	--	--
12365000	**Stillwater River near Whitefish**	524	**1930-50, 1972-P**	**1931-50, 1964, 1973-P**	--	--	--	--	--	--
12365500	Stillwater River near Kalispell	338	1907,1922, 1928-31	--	--	--	--	--	--	--
12365800	Swift Creek near Whitefish	78.0	1973-81	1973-81	--	--	--	--	--	--
12366000	**Whitefish River near Kalispell**	170	**1928-50, 1972-P**	**1929-50, 1964, 1973-P**	--	--	--	1999-2003	1999-2003	--
12366100	Trumbull Creek near Columbia Falls	9.0	--	1997-2002	--	--	--	--	--	--
12367000	Ashley Creek near Kila	44.2	1916	--	--	--	--	--	--	--
12367500	Ashley Creek near Kalispell	201	1931-50, 1972-74	1931-32, 1935-50, 1973-74	--	--	---	1969-70	--	1969-70
12367800	Ashley Creek below Kalispell	--	--	--	--	--	--	1969-70	--	1969-70
12368500	Flathead River at Therriault ferry, near Kalispell	--	1934-45	--	--	--	--	--	--	--
12369000	Flathead River near Bigfork	6,300	1909-12, 1928-37, 1939-45	--	--	--	--	--	--	1969-71
12369200	Swan River near Condon	69.1	1973-92	1973-92	--	--	--	--	--	--
12369250	Holland Creek near Condon	22.3	--	1974-91	--	--	--	--	--	--
12369650	North Fork Lost Creek near Swan Lake	13.0	--	1982-91	--	--	--	--	--	--
12370000	**Swan River near Bigfork**	671	**1910-11, 1922-P**	**1922-P**	--	2000-2003	--	1999-2003	1999-2003	--
12370500	Dayton Creek near Proctor	18.5	--	1959-91	--	--	--	--	--	--
12370900	Teepee Creek near Polson	2.18	1983-87	1960-74, 1980, 1983-87	--	--	--	1983-85	1983-85	--
12371000	**Turtle Lake near Polson**	--	**1939-P**	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12371100	Hell Roaring Creek near Polson	6.22	1917-32	1917-32, 1948, 1959-67, 1980	--	--	--	--	--	--
12371500	Flathead Lake at Somers	7,086	1900, 1908-98	--	--	--	--	--	--	--
12371550	**Flathead Lake at Polson**	7,086	**1999-P**	--	--	--	--	1969-71	--	1969-71
12372000	**Flathead River near Polson**	7,096	**1907-P**	**1894, 1908-P**	--	1977-83	--	--	--	--
12372500	**Little Bitterroot Lake near Marion**	31.8	**1939-P**	--	--	--	--	--	--	--
12373000	Little Bitterroot River near Marion	31.8	1910-16	--	--	--	--	--	--	--
12373500	**Hubbart Reservoir near Niarada**	114	**1939-P**	--	--	--	--	--	--	--
12374000	Little Bitterroot River near Hubbart	134	1909-16	--	--	--	--	--	--	--
12374250	**Mill Creek above Bassoo Creek, near Niarada**	19.6	**1983-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12374300	Mill Creek near Niarada	28.2	--	1959-73	--	--	--	--	--	--
12374500	Little Bitterroot River near Niarada	223	1908-10, 1916-17	--	--	--	--	--	--	--
12374800	Cromwell Creek near Niarada	14.3	1983-89	1983-89	--	--	--	1983-85	1983-85	--
12374900	Garden Creek near Hot Springs	3.57	--	1959-73	--	--	--	--	--	--
12375000	**Upper Dry Fork Reservoir near Lonepine**	8.53	**1940-P**	--	--	--	--	--	--	--
12375500	**Dry Fork Reservoir near Lonepine**	17.8	**1939-P**	--	--	--	--	--	--	--
12375800	Little Bitterroot River near Perma	--	--	--	--	--	--	1987-92	1987-92	--
12375900	**South Crow Creek near Ronan**	7.57	**1982-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12376000	Crow Creek near Ronan	46.1	1906-17	1907-11, 1913-17	--	--	--	--	--	--
12376500	Mud Creek near Ronan	30.4	1908-11	--	--	--	--	--	--	--
12376700	**Lower Crow Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12376900	Crow Creek at mouth, near Ronan	--	--	--	--	--	--	1987-92	1987-92	--
12377000	Crow Creek at Lozeaus ranch, near Ronan	139	1911-16	--	--	--	--	--	--	--
12377150	**Mission Creek above reservoir, near St. Ignatius**	12.4	**1982-P**	**1982-P**	--	--	--	1983-85	1983-86	--
12377200	**Mission Reservoir near St. Ignatius**	--	**1939-P**	--	--	--	--	--	--	--
12377300	**St. Mary's Lake near St. Ignatius**	--	**1939-P**	--	--	--	--	--	--	--
12377500	Dry Creek near St. Ignatius	24.7	1908-16	1909-16	--	--	--	--	--	--
12377900	**Pablo Reservoir near Polson**	--	**1939-P**	--	--	--	--	--	--	--
12378000	Mission Creek near St. Ignatius	74.8	1906-17	1907-17	--	--	--	--	--	--
12378200	**McDonald Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378300	**Kicking Horse Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378400	**Ninepipe Reservoir near Charlo**	--	**1939-P**	--	--	--	--	--	--	--
12378500	Post Creek at Fitzpatrick's ranch, near Ronan	28.4	1906-11	--	--	--	--	--	--	--

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12379000	Post Creek at Deschamp's ranch, near Ronan	29.7	1911	--	--	--	--	--	--	--
12379500	Post Creek near St. Ignatius	47.6	1911-17	--	--	--	--	--	--	--
12379600	Mission Creek at National Bison Range, at Moiese	236	--	--	--	--	--	1987-92	1987-92	--
12380000	**Upper Jocko Lake near Arlee**	2.99	**1968-P**	--	--	--	--	--	--	--
12380500	**Lower Jocko Lake near Arlee**	7.39	**1939-P**	--	--	--	--	--	--	--
12381000	Jocko River above South Fork, near Jocko	14.9	1912-16	--	--	--	--	--	--	--
12381400	**South Fork Jocko River near Arlee**	56.0	**1982-P**	**1983-P**	--	--	--	1983-86	1983-86	
12381500	Jocko River below South Fork, near Jocko	72.3	1912-16	--	--	--	--	--	--	--
12382000	Middle Fork Jocko River near Jocko	19.5	1912-16	--	--	--	--	--	--	--
12382500	Falls Creek near Jocko	3.57	1912-16	--	--	--	--	--	--	--
12383000	Jocko River near Jocko	140	1918-19	--	--	--	--	--	--	--
12383500	**Big Knife Creek near Arlee**	6.88	**1910-16, 1983-P**	**1982-P**	--	--	--	1983-85	1983-85	--
12384000	Big Knife Creek near Jocko	7.44	1909-11	--	--	--	--	--	--	--
12384500	Jocko River below Big Knife Creek, near Jocko	154	1909-16	--	--	--	--	--	--	--
12386000	East Finley Creek near Jocko	5.48	1909-16	--	--	--	--	--	-	--
12386500	Indian Ditch near Jocko	--	1909-16	--	--	--	--	--	--	--
12387000	Finley Creek near Jocko	36.7	1909-16	--	--	--	--	--	--	--
12387100	Agency Creek near Jocko	4.00	1909-16	--	--	--	--	--	--	--
12387200	Blodgett Creek near Jocko	5.48	1909	--	--	--	--	--	--	--
12387450	**Valley Creek near Arlee**	15.3	**1983-P**	**1983-P**	--	--	--	1983-85	1983-85	--
12387500	Valley Creek near Ravalli	64.1	1909-10	--	--	--	--	--	--	--
12388000	Jocko River at Ravalli	348	1907-11	--	--	--	--	--	--	--
12388200	**Jocko River at Dixon**	380	**1990-P**	**1990-P**	--	--		1987-92	1987-92	--
12388400	**Revais Creek below West Fork, near Dixon**	23.4	**1983-P**	**1983-P**	--	--	--	1983-85, 1991-92	1983-85 1991-92	--
12388500	Revais Creek near Dixon	26.3	1911-19	1911-16, 1918-19	--	--	--	--	--	--
12388650	Camas Creek near Hot Springs	4.46	1983-87	1983-87	--	--	--	1983-85	1983-85	--
12388700	**Flathead River at Perma**	8,795	**1984-P**	**1984-P**	--	2000-2003	--	1971-73, 1984-92 1997-2003	1984-92, 1999-2003	1971-73
12389000	**Clark Fork near Plains**	19,958	**1910-P**	**1912-P**	--	--	--	1969-70	--	1969-70
12389150	McGregor Creek tributary near Marion	2.55	--	1972-82	--	--	--	--	--	--
12389200	Thompson River near Marion	104	--	--	--	--	--	1975-76	1975-76	1975-76
12389300	Thompson River above Little Thompson River, near Thompson Falls	321	--	--	--	--	--	1975-76	1975-76	1975-76
12389400	Little Thompson River near Thompson Falls	129	--	--	--	--	--	1975-76	1975-76	1975-76
12389450	West Fork Thompson River near Thompson Falls	35.7	--	--	--	--	--	1975-76	1975-76	1975-76

Table 11. Montana active and discontinued streamflow-gaging, water-quality, and crest-stage gage stations (active stations in bold print)--Continued

Station number	Station name	Drainage area (square miles)	Period of record (by water year)							
			Discharge or contents		Water quality					
					Daily			Periodic		
			Daily or monthly	Annual peak	Specific conduct-ance	Water tempera-ture	Sediment	Chemistry	Sediment	Biology
			Part 12--Pend Oreille River Basin--Continued							
12389500	**Thompson River near Thompson Falls**	642	**1911-16, 1956-P**	**1948, 1956-P**	--	--	--	1975-76	1975-76	1975-76
12390000	**Thompson Falls Reservoir at Thompson Falls**	20,968	**1939-P**	--	--	--	--	--	--	--
12390500	Prospect Creek near Thompson Falls	145	1911	--	--	--	--	--	--	--
12390700	**Prospect Creek at Thompson Falls**	182	**1956-P**	**1956-P**	--	--	--	--	--	--
12391000	Clark Fork at Thompson Falls	21,113	1952-59	1952-59	--	--	--	1963, 1969-73	--	1970-73
12391100	White Pine Creek near Trout Creek	8.75	--	1974-84	--	--	--	--	--	--
12391200	Canyon Creek near Trout Creek	8.64	--	1972, 1974-91	--	--	--	--	--	--
12391300	**Noxon Rapids Reservoir near Noxon**	21,833	**1959-P**	--	--	--	--	--	--	--
12391400	**Clark Fork below Noxon Rapids Dam, near Noxon**	21,833	**1960-P**	**1960-P**	--	--	--	--	--	--
12391420	Rock Creek near Noxon	32	--	--	--	--	--	1998	1998	--
12391430	Skeleton Creek near Noxon	2.10	--	1973-84	--	--	--	--	--	--
12391500	Bull River near Heron	45.7	--	--	--	--	--	1971	--	--
12391525	Snake Creek near Noxon	3.11	--	1972-84	--	--	--	--	--	--
12391550	Bull River near Noxon	139	1973-82	1973-82	--	--	--	--	--	--

06186500 YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°34'03", long 110°22'48" (NAD 27), Yellowstone National Park, Hydrologic Unit 10070001, on left bank 450 ft downstream from Fishing Bridge, 0.3 mi downstream from outlet of Yellowstone Lake, and at river mile 616.4.

DRAINAGE AREA.--991 mi^2.

PERIOD OF RECORD.--December 1922 to September 1982, October 1983 to September 1986, October 1988 to current year. Prior to October 1926, gage heights only. Monthly discharge only for winter periods in water years 1927-30, 1932-33, 1935-38, 1940, 1942-46 published in WSP 1309; figures of daily discharge for these months published in WSP 646, 666, 686, 701, 731, 746, 786, 806, 826, 856, 896, 956, 976, 1006, 1036, and 1056, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1309: See PERIOD OF RECORD. WSP 1729: Drainage area. WDR MT-03-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,729.58 ft (NGVD 29). Prior to Oct. 2, 1928, nonrecording gage at site 450 ft upstream at elevation 1.07 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No artificial regulation. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	485	380	e350	e350	383	378	642	1,600	2,590	1,940	1,260
2	683	478	376	e350	e350	383	375	660	1,600	2,600	1,910	1,270
3	673	473	376	e350	e350	383	385	685	1,620	2,590	1,870	1,240
4	669	467	371	e340	e350	384	389	720	1,650	2,590	1,830	1,230
5	664	457	369	e340	e350	387	392	779	1,690	2,590	1,800	1,220
6	654	452	368	e340	e350	394	398	823	1,770	2,600	1,770	1,210
7	651	444	365	e340	e350	391	409	883	1,830	2,600	1,730	1,190
8	647	438	e360	e350	e350	388	419	950	1,920	2,580	1,670	1,160
9	635	435	e360	e350	e350	389	426	1,000	2,030	2,550	1,640	1,150
10	638	444	e360	e350	e350	386	434	1,040	2,180	2,530	1,600	1,120
11	640	456	e360	e350	e350	383	439	1,090	2,270	2,500	1,560	1,110
12	634	450	e360	e350	e350	387	443	1,120	2,320	2,470	1,540	1,090
13	615	444	e360	e350	e360	384	449	1,140	2,350	2,440	1,510	1,100
14	601	446	e360	e350	e360	383	462	1,170	2,360	2,430	1,470	1,100
15	594	440	e360	e350	e370	384	472	1,180	2,360	2,410	1,440	1,090
16	589	448	e350	e350	e370	386	478	1,210	2,330	2,390	1,400	1,080
17	580	448	e350	e350	e370	384	497	1,240	2,350	2,360	1,390	1,060
18	572	446	e350	e350	e380	381	518	1,260	2,350	2,330	1,380	1,050
19	565	450	e350	e350	e380	389	531	1,280	2,370	2,340	1,370	1,040
20	558	447	e350	e350	e380	374	546	1,300	2,380	2,330	1,350	1,060
21	554	435	e350	e350	384	372	555	1,350	2,370	2,310	1,330	1,040
22	550	427	e350	e350	383	371	556	1,390	2,380	2,290	1,330	1,030
23	550	424	e350	e350	381	375	561	1,430	2,410	2,280	1,360	1,040
24	534	418	e350	e350	380	374	563	1,440	2,430	2,250	1,320	1,030
25	522	420	e350	e350	380	371	569	1,460	2,460	2,210	1,330	1,030
26	518	407	e350	e350	381	377	574	1,470	2,480	2,180	1,340	1,020
27	515	403	e350	e350	382	381	586	1,500	2,510	2,140	1,350	1,010
28	515	398	e350	e350	378	380	600	1,530	2,540	2,110	1,340	1,010
29	516	394	e350	e350	379	377	618	1,570	2,570	2,070	1,310	1,000
30	489	389	e350	e350	---	379	631	1,600	2,580	2,040	1,290	1,000
31	487	---	e350	e350	---	380	---	1,600	---	1,990	1,280	---
TOTAL	18,301	13,163	11,085	10,810	10,598	11,840	14,653	36,512	66,060	73,690	46,750	33,040
MEAN	590	439	358	349	365	382	488	1,178	2,202	2,377	1,508	1,101
MAX	689	485	380	350	384	394	631	1,600	2,580	2,600	1,940	1,270
MIN	487	389	350	340	350	371	375	642	1,600	1,990	1,280	1,000
AC-FT	36,300	26,110	21,990	21,440	21,020	23,480	29,060	72,420	131,000	146,200	92,730	65,530
CFSM	0.60	0.44	0.36	0.35	0.37	0.39	0.49	1.19	2.22	2.40	1.52	1.11
IN.	0.69	0.49	0.42	0.41	0.40	0.44	0.55	1.37	2.48	2.77	1.75	1.24

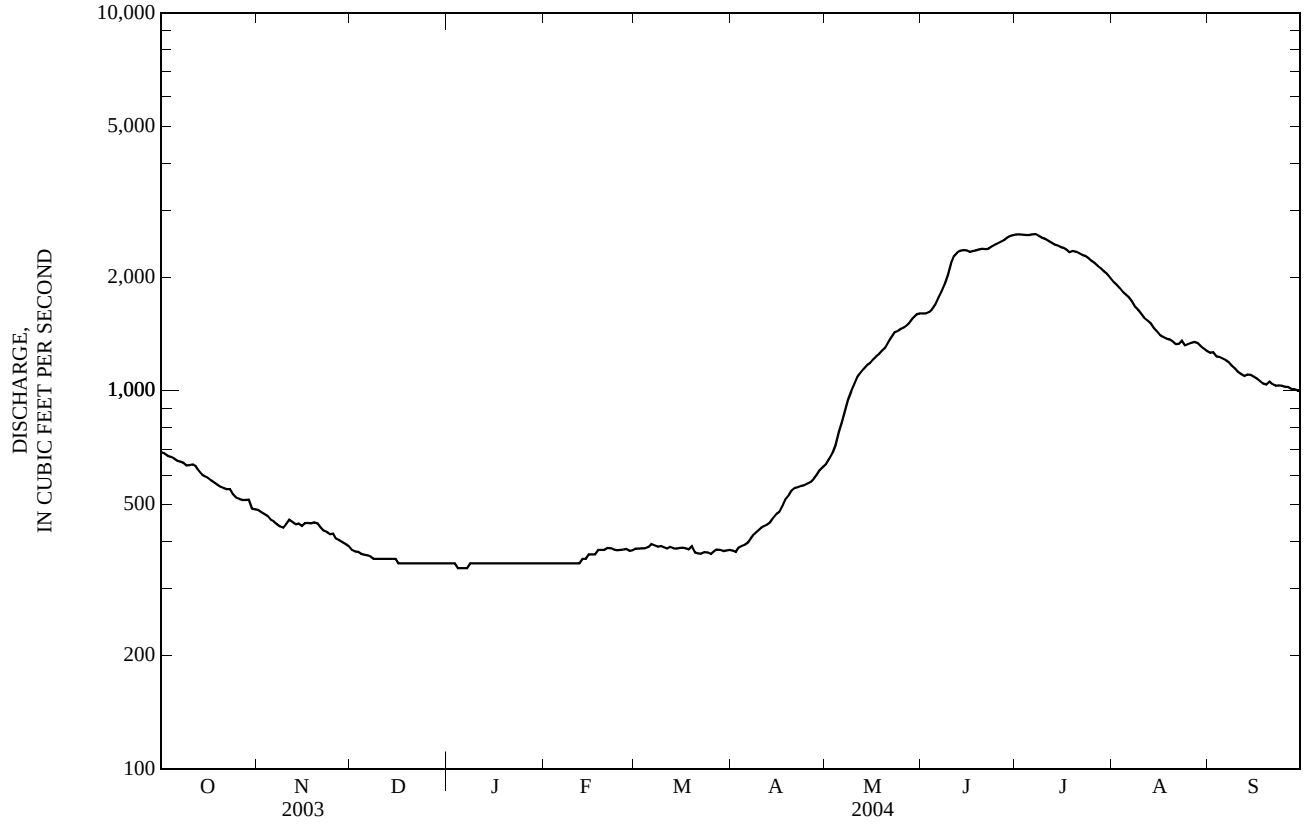
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2004, BY WATER YEAR (WY)*

MEAN	796	602	473	397	387	445	541	1,161	3,686	4,012	2,196	1,205
MAX	1,259	984	775	699	637	717	801	2,214	8,574	7,160	4,031	1,954
(WY)	(1973)	(1951)	(1951)	(1998)	(1998)	(1962)	(1952)	(1997)	(1997)	(1982)	(1982)	(1982)
MIN	327	276	246	168	122	130	175	605	1,707	1,272	812	538
(WY)	(1989)	(1989)	(1932)	(1989)	(1989)	(1935)	(1937)	(1953)	(1934)	(1934)	(1934)	(1934)

06186500 YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1927 - 2004*	
ANNUAL TOTAL	435,342		346,502			
ANNUAL MEAN	1,193		947		1,330	
HIGHEST ANNUAL MEAN					2,253	1997
LOWEST ANNUAL MEAN					682	1934
HIGHEST DAILY MEAN	4,900	Jun 21	2,600	Jul 2	9,930	Jun 19, 1997
LOWEST DAILY MEAN	350	Dec 16	340	Jan 4	100	Feb 18, 1993
ANNUAL SEVEN-DAY MINIMUM	350	Dec 16	344	Jan 1	113	Feb 11, 1989
MAXIMUM PEAK FLOW			2,670	Jul 7	9,950	Jun 18, 1997
MAXIMUM PEAK STAGE			5.10	Jul 7	8.90	Jun 18, 1997
ANNUAL RUNOFF (AC-FT)	863,500		687,300		963,600	
ANNUAL RUNOFF (CFSM)	1.20		0.955		1.34	
ANNUAL RUNOFF (INCHES)	16.34		13.01		18.24	
10 PERCENT EXCEEDS	3,710		2,330		3,460	
50 PERCENT EXCEEDS	522		554		676	
90 PERCENT EXCEEDS	370		350		340	

*--During periods of operation (October 1926 to September 1982, October 1983 to September 1986, October 1988 to current year.
e--Estimated.



06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT

LOCATION.--Lat 45°00'11", long 110°00'04" (NAD 27), in SW¼NW¼SW¼ sec.33, T.9 S., R.14 E., Park County, Hydrologic Unit 10070001, at Yellowstone National Park boundary, 0.25 mi downstream from Silver Creek, 0.75 mi southwest of Silver Gate, and at river mile 17.8.

DRAINAGE AREA.--31.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1998 to current year. October 1998 to September 2002 records collected by the National Park Service and U.S. Department of Agriculture, Forest Service, under the general supervision of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 7,340 ft (NGVD 29).

REMARKS.--Water-discharge records good except for those discharges greater than 600 ft^3/s, which are fair, and estimated daily discharges, which are poor. No known regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	e6.5	4.0	3.6	e2.0	e1.0	10	39	96	288	46	24
2	6.9	e6.0	3.9	3.4	e1.5	e0.90	8.7	56	114	266	48	24
3	6.7	e6.5	3.9	e3.0	e1.5	e0.90	8.5	72	153	246	44	25
4	6.5	e7.0	3.6	e2.5	e1.5	1.1	9.7	95	227	247	40	23
5	6.4	e6.5	e3.5	e1.5	e2.0	1.1	11	131	303	241	38	22
6	6.4	e5.5	4.0	e2.0	e2.0	1.3	14	155	391	212	36	20
7	6.4	e5.5	3.8	e3.0	e2.0	1.5	16	171	427	222	33	19
8	6.4	e6.0	3.6	e3.5	2.0	1.3	18	162	414	207	31	18
9	6.3	e6.5	3.5	e3.0	e1.5	1.3	18	134	496	183	30	17
10	9.2	e7.0	3.9	e2.5	e1.5	1.5	15	123	458	185	29	17
11	7.6	e7.5	3.7	e2.5	e1.2	1.2	15	121	365	176	27	17
12	7.3	e7.0	3.6	e2.0	e1.0	1.3	17	99	284	159	26	16
13	7.1	e6.5	3.7	e2.0	e1.2	1.2	24	85	239	149	24	26
14	6.7	e6.0	3.5	e2.0	e1.2	1.3	28	77	219	148	23	31
15	6.7	6.3	3.4	e2.0	e2.0	1.2	24	71	219	134	23	24
16	6.8	5.8	3.6	e2.0	e2.0	1.2	21	70	202	125	22	37
17	7.9	5.5	3.5	e2.0	2.6	1.2	21	68	175	117	24	39
18	7.5	5.2	e3.0	e2.0	2.4	1.2	20	82	161	112	24	36
19	7.0	5.0	e3.0	e2.5	2.1	1.5	19	86	159	127	24	34
20	6.7	5.0	e3.5	e2.0	e1.5	1.6	19	77	166	104	22	42
21	6.6	4.5	e4.0	e2.0	e1.0	1.9	18	83	180	95	21	33
22	6.4	e4.0	e3.5	e2.0	e1.0	2.5	17	89	216	92	27	30
23	6.3	e3.5	e3.0	e2.5	e1.1	3.7	18	87	275	80	46	31
24	5.5	e4.0	e3.5	e2.5	e1.2	5.1	19	77	323	73	28	37
25	4.9	e4.0	e4.0	e2.5	e1.3	5.0	18	72	324	69	61	33
26	4.9	e4.0	e4.0	e2.0	e1.3	4.0	21	70	317	66	50	33
27	5.1	e4.0	3.7	e2.5	1.4	3.5	33	81	321	65	40	34
28	8.2	4.4	3.5	2.7	1.3	3.2	39	134	320	62	32	32
29	29	4.4	3.6	2.7	1.2	3.3	29	122	304	56	29	31
30	8.0	4.2	3.7	2.5	---	4.8	30	101	300	52	27	31
31	7.2	---	3.8	e2.0	---	7.8	---	92	---	49	26	---
TOTAL	231.6	163.8	112.5	74.9	45.5	69.60	578.9	2,982	8,148	4,407	1,001	836
MEAN	7.47	5.46	3.63	2.42	1.57	2.25	19.3	96.2	272	142	32.3	27.9
MAX	29	7.5	4.0	3.6	2.6	7.8	39	171	496	288	61	42
MIN	4.9	3.5	3.0	1.5	1.0	0.90	8.5	39	96	49	21	16
AC-FT	459	325	223	149	90	138	1,150	5,910	16,160	8,740	1,990	1,660
CFSM	0.24	0.17	0.12	0.08	0.05	0.07	0.62	3.08	8.71	4.56	1.03	0.89
IN.	0.28	0.20	0.13	0.09	0.05	0.08	0.69	3.56	9.71	5.25	1.19	1.00

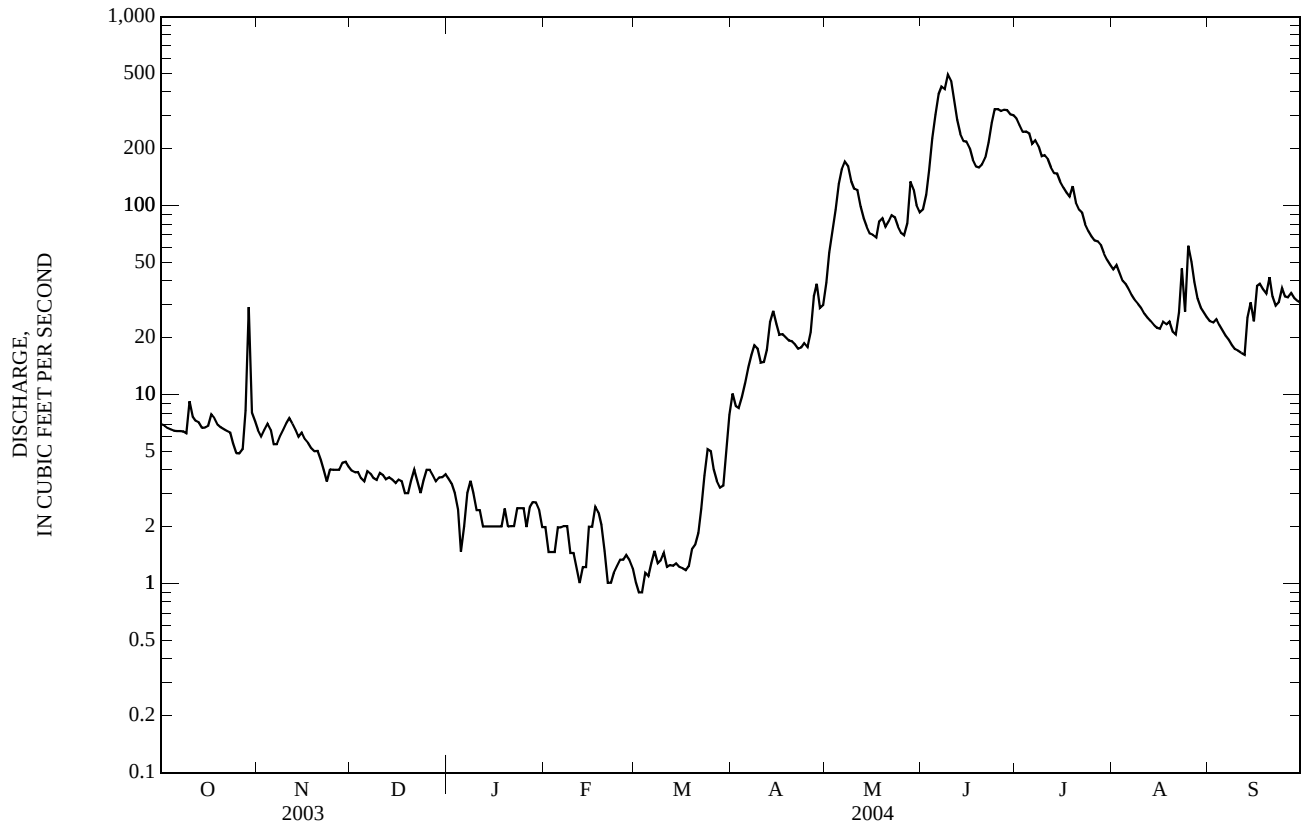
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	8.69	5.41	3.55	2.45	1.90	1.70	10.1	133	318	132	28.2	15.9
MAX	11.9	6.84	4.70	3.36	2.31	2.25	19.3	167	408	212	45.0	27.9
(WY)	(1999)	(1999)	(2002)	(2002)	(2002)	(2004)	(2004)	(2001)	(2003)	(1999)	(1999)	(2004)
MIN	5.14	4.30	2.85	2.01	1.57	1.13	4.23	95.9	176	61.6	15.5	8.27
(WY)	(2002)	(2003)	(2001)	(2000)	(2004)	(2003)	(1999)	(1999)	(2001)	(2001)	(2001)	(2001)

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	23,874.00		18,650.80			
ANNUAL MEAN	65.4		51.0		55.1	
HIGHEST ANNUAL MEAN					65.4	2003
LOWEST ANNUAL MEAN					38.5	2001
HIGHEST DAILY MEAN	730	May 31	496	Jun 9	735	Jun 1, 2002
LOWEST DAILY MEAN	0.80	Feb 23	0.90	Mar 2	0.80	Feb 23, 2003
ANNUAL SEVEN-DAY MINIMUM	0.99	Mar 23	1.1	Feb 28	0.99	Mar 23, 2003
MAXIMUM PEAK FLOW			613	Jun 9	912	Jun 1, 2002
MAXIMUM PEAK STAGE			2.82	Jun 9	3.49	Jun 1, 2002
INSTANTANEOUS LOW FLOW			a0.86	Feb 29		
ANNUAL RUNOFF (AC-FT)	47,350		36,990		39,950	
ANNUAL RUNOFF (CFSM)	2.10		1.63		1.77	
ANNUAL RUNOFF (INCHES)	28.47		22.24		24.02	
10 PERCENT EXCEEDS	264		168		202	
50 PERCENT EXCEEDS	7.0		8.9		7.8	
90 PERCENT EXCEEDS	1.5		1.5		1.8	

a--Gage height, 0.68 ft. Instantaneous low flow occurred during possible ice effect and may have been less.
e--Estimated.



06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1999 to 2001, April 2003 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 2003 to current year.

INSTRUMENTATION.--Temperature recorder installed April 23, 2003.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 17.5°C, Aug. 15, 2003; minimum, 0.0°C, many days October through May.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 16.0°C, Aug. 14; minimum, 0.0°C, many days October through May.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.5	2.0	5.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
2	9.0	3.5	6.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
3	8.5	2.5	5.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0
4	8.5	2.5	5.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
5	8.5	2.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	8.5	3.0	5.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
7	7.5	3.5	5.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
8	8.0	5.5	6.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0
9	8.5	4.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	7.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	4.5	1.5	3.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
12	5.0	3.0	4.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
13	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	4.5	1.5	3.0	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0
15	4.5	2.0	3.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
16	5.5	1.5	3.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
17	6.5	3.5	5.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
18	6.5	2.0	4.5	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
19	6.5	2.0	4.0	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
20	6.5	2.5	4.5	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
21	7.0	3.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	6.5	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	5.5	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	3.0	0.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	2.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	4.5	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	3.5	2.0	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	3.5	0.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	9.0	0.0	3.8	1.0	0.0	0.1	0.5	0.0	0.1	0.5	0.0	0.0

06187915 SODA BUTTE CREEK AT PARK BOUNDARY, AT SILVER GATE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	0.0	0.0	0.0	5.5	1.0	2.5	9.5	1.0	4.0
2	0.0	0.0	0.0	0.5	0.0	0.0	4.5	1.0	2.0	9.5	0.5	4.0
3	0.0	0.0	0.0	0.5	0.0	0.0	6.5	0.0	2.5	7.0	1.5	3.5
4	0.0	0.0	0.0	0.5	0.0	0.0	4.0	1.0	2.5	8.0	1.0	3.5
5	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.5	2.5	8.5	1.5	4.0
6	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.5	2.5	7.5	1.5	4.0
7	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.5	3.0	7.5	1.5	3.5
8	0.0	0.0	0.0	0.5	0.0	0.0	6.0	1.0	3.0	5.5	1.5	3.0
9	0.0	0.0	0.0	0.5	0.0	0.5	3.5	1.0	2.0	5.0	2.0	3.0
10	0.0	0.0	0.0	1.0	0.0	0.5	6.0	0.0	2.0	7.0	1.5	4.0
11	0.0	0.0	0.0	1.0	0.0	0.5	7.0	0.0	3.0	3.0	1.0	2.5
12	0.0	0.0	0.0	1.5	0.0	0.5	7.5	0.0	3.0	3.5	0.5	2.0
13	0.0	0.0	0.0	2.0	0.0	1.0	7.0	0.5	3.0	3.5	0.0	1.5
14	0.0	0.0	0.0	0.5	0.0	0.5	5.5	1.0	2.5	4.5	0.0	2.0
15	0.0	0.0	0.0	1.5	0.0	0.5	4.0	0.5	2.0	8.0	0.5	4.0
16	0.0	0.0	0.0	1.0	0.5	0.5	5.0	0.0	2.5	4.0	1.0	2.5
17	0.0	0.0	0.0	2.0	0.5	1.0	3.5	0.0	2.0	9.0	1.5	4.5
18	0.0	0.0	0.0	2.5	0.5	1.5	5.5	1.0	2.5	6.0	2.5	3.5
19	0.0	0.0	0.0	2.0	1.0	1.5	5.5	1.0	2.5	5.5	2.0	3.5
20	0.5	0.0	0.0	3.5	0.0	1.5	4.0	0.5	2.0	7.0	1.5	4.0
21	0.0	0.0	0.0	3.5	0.0	1.5	7.5	0.0	3.0	5.5	2.5	3.5
22	0.0	0.0	0.0	3.5	0.0	1.5	7.5	0.0	3.0	4.0	0.5	2.5
23	0.0	0.0	0.0	3.5	0.0	1.0	9.5	0.0	4.0	4.5	1.5	2.5
24	0.0	0.0	0.0	4.0	0.0	1.0	6.0	0.5	3.0	5.0	1.0	3.0
25	0.0	0.0	0.0	3.0	0.0	1.0	9.0	0.0	4.0	6.5	1.0	3.5
26	0.5	0.0	0.0	2.5	0.5	1.0	10.0	1.0	4.5	3.5	2.0	2.5
27	0.5	0.0	0.0	3.5	0.0	1.0	9.0	1.0	4.5	6.0	2.5	4.0
28	0.5	0.0	0.0	5.0	0.0	1.5	3.5	1.0	2.5	5.0	2.5	3.5
29	0.5	0.0	0.0	6.0	0.0	2.0	7.0	0.0	2.5	5.5	1.5	3.0
30	---	---	---	6.0	0.0	2.0	9.5	0.0	4.0	4.5	1.0	2.5
31	---	---	---	5.5	0.5	2.0	---	---	---	7.5	1.5	4.0
MONTH	0.5	0.0	0.0	6.0	0.0	0.8	10.0	0.0	2.8	9.5	0.0	3.3
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.5	2.5	5.0	10.5	3.5	6.0	14.5	6.0	10.0	13.0	5.0	9.0
2	8.5	2.0	5.0	8.0	3.0	5.5	12.0	7.5	9.5	9.5	6.5	8.0
3	9.5	2.0	5.0	9.5	3.0	5.5	14.0	7.0	10.0	7.5	5.0	6.0
4	8.0	2.5	4.5	7.5	4.0	5.5	13.5	6.0	9.5	10.0	3.0	6.5
5	8.5	2.0	4.5	9.0	3.5	5.5	12.5	7.0	9.5	10.0	3.5	6.5
6	7.0	3.0	4.5	10.5	3.5	6.0	12.5	6.0	9.0	12.0	3.5	7.0
7	8.0	2.5	4.5	9.5	3.5	6.0	13.5	5.0	9.0	12.0	3.5	7.5
8	8.5	2.5	4.5	10.5	4.0	6.0	14.5	4.5	9.0	11.5	4.0	7.5
9	8.5	2.5	4.5	11.0	2.5	6.5	15.5	5.5	10.0	12.0	4.5	8.0
10	3.5	1.0	2.5	12.0	4.0	7.0	15.0	6.0	10.0	11.0	4.5	7.5
11	4.5	2.0	3.0	12.0	4.0	7.0	15.0	5.5	9.5	13.0	4.0	8.0
12	6.5	2.5	4.0	12.5	3.5	7.5	15.0	5.0	9.5	9.0	6.0	7.5
13	6.5	3.0	4.0	10.0	4.5	7.0	15.5	5.0	10.0	7.0	4.0	6.0
14	8.5	2.5	5.0	13.0	5.0	8.5	16.0	6.0	10.5	7.0	3.0	4.5
15	8.5	2.5	4.5	11.0	6.0	8.0	14.5	6.5	10.0	4.5	3.0	4.0
16	6.0	2.0	3.5	12.5	5.0	8.5	13.5	7.0	10.0	7.0	3.5	5.0
17	7.0	1.5	4.0	12.0	5.0	8.5	12.5	8.5	10.0	11.0	3.0	6.5
18	6.5	2.5	4.0	10.5	5.5	8.0	11.0	8.0	9.5	10.5	5.0	7.0
19	8.5	3.0	5.0	11.0	6.5	8.0	15.5	7.5	10.5	7.0	4.0	5.5
20	7.0	3.0	4.5	12.5	5.5	8.0	13.5	6.5	9.5	5.5	3.0	4.0
21	10.0	2.5	5.0	13.0	5.5	9.0	12.0	6.0	9.0	6.0	1.5	3.0
22	9.0	2.0	5.0	11.0	6.5	8.0	10.5	6.5	8.5	3.5	0.5	2.0
23	10.0	2.5	5.5	11.5	6.0	8.5	8.0	5.5	6.5	5.5	2.5	4.0
24	9.5	3.0	5.5	13.5	4.5	8.5	9.0	5.0	7.0	9.5	3.5	6.0
25	7.5	3.0	5.0	12.5	5.0	9.0	8.0	4.5	6.5	9.5	2.0	5.5
26	9.0	3.0	5.5	13.0	6.0	9.0	8.5	3.5	5.5	8.0	2.5	5.5
27	8.0	3.5	5.0	14.0	5.5	9.0	10.0	4.5	6.5	8.5	4.0	6.0
28	9.0	3.0	5.0	14.5	5.5	9.0	10.0	4.5	7.0	8.5	4.0	6.0
29	8.5	3.0	5.5	13.5	5.0	9.0	13.5	5.5	9.0	8.5	1.5	5.0
30	7.5	4.0	5.5	14.5	5.0	9.5	13.5	5.0	9.0	7.5	4.5	6.0
31	---	---	---	15.0	5.5	10.0	14.5	5.0	9.0	---	---	---
MONTH	10.0	1.0	4.6	15.0	2.5	7.6	16.0	3.5	9.0	13.0	0.5	6.0

06187950 SODA BUTTE CREEK NEAR LAMAR RANGER STATION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°52'06", long 110°09'53" (NAD 27), Yellowstone National Park, Hydrologic Unit 10070001, on left bank, 4 mi southeast of Lamar Ranger Station, and at river mile 1.5.

DRAINAGE AREA.--99.0 mi^2.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,630 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. No regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	e30	28	e27	e17	e20	55	124	268	455	104	70
2	36	31	26	e25	e16	e21	59	160	299	438	109	68
3	36	33	29	e22	e16	22	52	215	349	405	111	72
4	35	e30	e25	e18	e16	21	63	260	429	414	101	70
5	35	e24	e25	e15	21	e20	64	330	517	417	97	66
6	35	e24	30	e15	22	e20	78	366	670	359	93	64
7	35	e25	28	e22	21	e20	85	381	715	363	89	61
8	35	e26	27	e25	e21	22	94	373	703	350	84	59
9	34	27	e22	e22	e21	21	89	331	804	311	81	57
10	43	28	23	e20	e20	22	74	299	963	294	78	56
11	39	29	24	e22	e15	e20	73	306	751	287	76	55
12	37	28	25	e20	e13	e21	75	262	614	267	73	55
13	38	e26	26	e20	e16	21	95	228	538	252	70	67
14	37	30	e25	e20	e16	18	111	208	499	243	68	91
15	36	28	e25	e20	20	20	100	191	489	230	66	82
16	36	28	24	e20	21	20	91	191	465	213	66	98
17	36	28	e22	e20	21	20	94	186	423	203	69	107
18	37	26	e20	e20	22	22	93	215	402	207	72	101
19	37	28	e22	20	22	27	86	243	388	252	71	92
20	36	29	e25	e20	e20	26	84	211	385	198	66	114
21	36	e27	27	e18	e17	25	79	219	383	184	66	95
22	36	e21	e23	e18	e16	27	74	255	412	194	68	88
23	35	e20	e20	21	e17	31	72	259	457	172	104	87
24	34	24	e23	21	e19	36	76	231	502	154	83	95
25	31	e24	25	e20	21	35	72	214	520	144	123	93
26	31	26	e24	e20	22	33	77	213	504	137	134	88
27	32	e25	e22	e21	22	30	106	232	515	134	105	88
28	34	e26	e23	e22	22	29	140	337	507	132	89	86
29	69	27	24	22	21	30	117	342	484	121	81	84
30	46	28	e22	e20	---	33	111	301	476	114	76	82
31	33	---	25	e18	---	41	---	274	---	110	73	---
TOTAL	1,146	806	759	634	554	774	2,539	7,957	15,431	7,754	2,646	2,391
MEAN	37.0	26.9	24.5	20.5	19.1	25.0	84.6	257	514	250	85.4	79.7
MAX	69	33	30	27	22	41	140	381	963	455	134	114
MIN	31	20	20	15	13	18	52	124	268	110	66	55
AC-FT	2,270	1,600	1,510	1,260	1,100	1,540	5,040	15,780	30,610	15,380	5,250	4,740

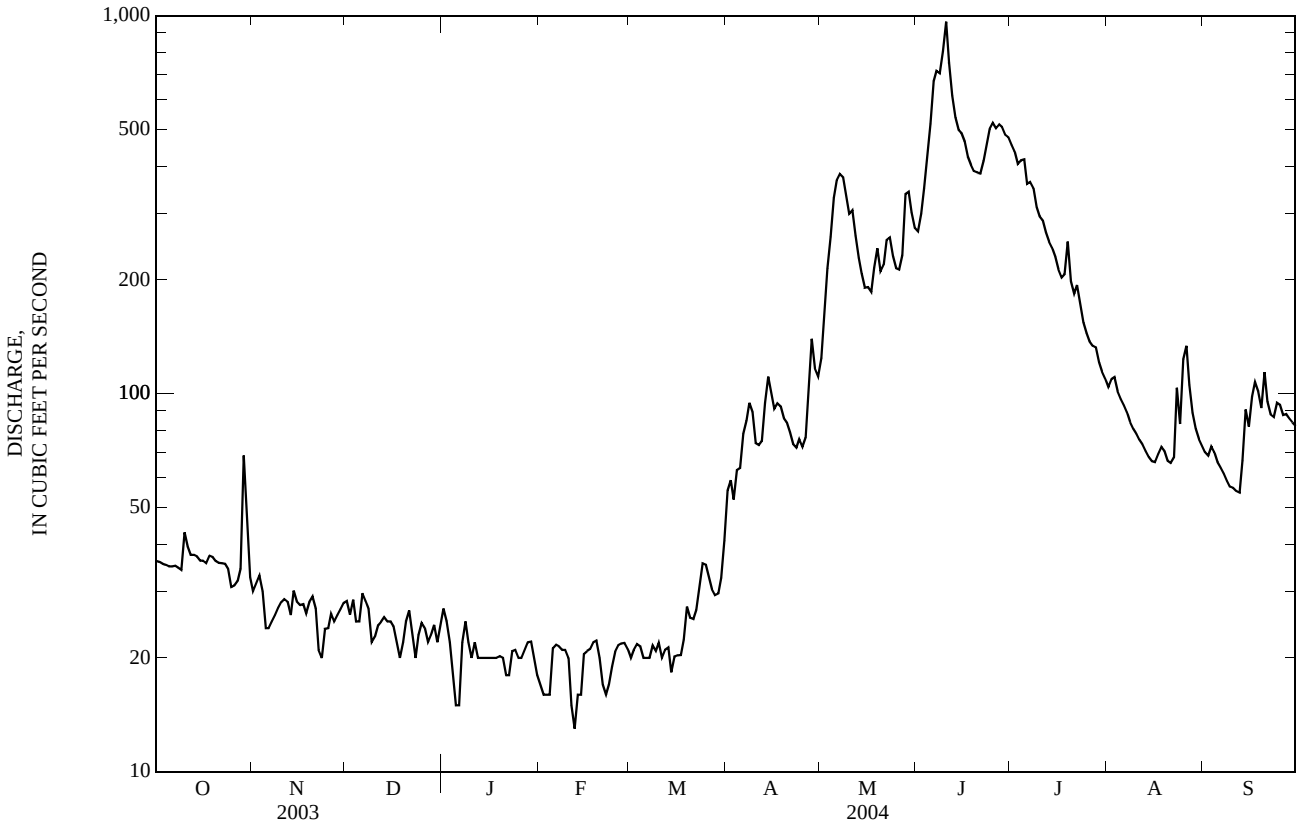
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)

MEAN	43.1	31.3	25.1	25.0	23.2	23.6	63.0	397	683	286	93.3	58.2
MAX	68.8	40.3	31.2	33.3	32.0	32.0	127	580	1,251	447	162	92.0
(WY)	(1998)	(1997)	(1996)	(1997)	(2000)	(1997)	(1990)	(1993)	(1996)	(1998)	(1997)	(1997)
MIN	27.8	21.4	16.0	16.7	16.2	17.2	32.3	217	338	106	51.0	36.1
(WY)	(1989)	(1995)	(1989)	(1989)	(2002)	(2002)	(1993)	(1995)	(2001)	(1994)	(2001)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004	
ANNUAL TOTAL	53,179		43,391			
ANNUAL MEAN	146		119		146	
HIGHEST ANNUAL MEAN					204	1996
LOWEST ANNUAL MEAN					96.5	2001
HIGHEST DAILY MEAN	1,430	May 29	963	Jun 10	2,070	Jun 9, 1996
LOWEST DAILY MEAN	15	Feb 24	13	Feb 12	12	Feb 4, 1989
ANNUAL SEVEN-DAY MINIMUM	19	Feb 22	17	Feb 9	13	Feb 2, 1989
MAXIMUM PEAK FLOW			1,120	Jun 10	b2,450	Jun 8, 1996
MAXIMUM PEAK STAGE			6.76	Jun 10	7.20	May 28, 2003
INSTANTANEOUS LOW FLOW			a12	Mar 14		
ANNUAL RUNOFF (AC-FT)	105,500		86,070		105,900	
10 PERCENT EXCEEDS	478		360		471	
50 PERCENT EXCEEDS	36		54		42	
90 PERCENT EXCEEDS	21		20		21	

a--Gage height, 4.13 ft.
b--Gage height, 5.61 ft.
e--Estimated.

06187950 SODA BUTTE CREEK NEAR LAMAR RANGER STATION, YELLOWSTONE NATIONAL PARK—Continued



06188000 LAMAR RIVER NEAR TOWER RANGER STATION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°55'40", long 110°23'35" (NAD 27), Yellowstone National Park, Hydrologic Unit 10070001, on left bank 0.5 mi north of the Cooke City highway, 1.6 mi northeast of Tower Falls Ranger Station, 2.7 mi downstream from Slough Creek, and at river mile 0.5.

DRAINAGE AREA.--660 mi^2.

PERIOD OF RECORD.--September 1922, April 1923 to September 1969, May 1985 to September 1986 (seasonal records only), October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,000 ft (NGVD 29). Prior to Sept. 16, 1925, nonrecording gage and Sept. 16, 1925 to July 29, 1927, water-stage recorder at same site at elevation 1.00 ft higher. July 29, 1927 to Sept. 30, 1969, water-stage recorder at same site and elevation. May 1985 to September 1986, nonrecording gage at same site and elevation. Formerly published as Lamar River near Tower Falls Ranger Station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	e100	e110	e100	e80	e75	582	1,250	2,050	2,060	409	291
2	127	e110	e110	e90	e80	e80	663	1,700	2,310	1,930	395	282
3	125	e110	e120	e80	e80	e85	551	2,450	2,770	1,770	438	304
4	125	e100	e110	e70	e80	e90	703	2,930	3,500	1,790	391	329
5	124	e90	e110	e65	e90	e90	774	3,840	4,150	2,070	381	285
6	124	e90	e120	e65	e90	e85	990	4,310	4,880	1,650	363	266
7	124	e95	e110	e85	e90	e90	1,050	4,320	4,990	1,530	348	251
8	125	e100	e100	e100	e90	e90	1,220	4,180	4,450	1,550	325	241
9	124	e110	e90	e90	e85	e90	1,070	3,700	4,510	1,330	309	233
10	157	e130	e95	e80	e85	e90	793	3,070	5,130	1,230	296	225
11	192	e120	e100	e80	e70	e85	749	3,170	4,190	1,160	284	220
12	160	e110	e110	e75	e65	e90	740	2,370	3,570	1,060	269	211
13	154	e100	e120	e75	e70	e95	1,020	1,890	3,170	977	257	260
14	147	e110	e110	e80	e70	e95	1,320	1,610	2,910	936	247	431
15	142	e120	e100	e80	e85	e100	1,160	1,450	2,780	885	238	472
16	142	e120	e95	e80	e85	e120	929	1,470	2,650	832	235	464
17	140	e120	e90	e85	e100	e140	909	1,470	2,320	764	247	585
18	148	e120	e85	e80	e120	e150	860	1,600	2,200	757	283	518
19	156	e130	e90	e85	e110	e150	750	2,190	2,120	1,170	276	426
20	147	e110	e100	e90	e90	e150	743	1,820	2,090	914	284	595
21	141	e100	e110	e85	e75	e160	687	1,920	2,040	831	261	574
22	138	e90	e100	e80	e70	e170	660	2,350	2,080	812	267	510
23	134	e85	e90	e85	e75	e200	636	2,380	2,200	792	349	493
24	131	e100	e95	e90	e80	e250	732	2,000	2,390	674	354	609
25	117	e100	e100	e90	e85	e300	687	1,740	2,480	604	424	657
26	116	e100	e95	e90	e85	401	739	1,660	2,360	576	879	563
27	119	e90	e85	e85	e85	319	1,180	1,740	2,330	563	608	543
28	125	e95	e80	e85	e85	269	1,720	2,750	2,210	531	467	523
29	218	e100	e85	e85	e80	231	1,230	3,010	2,120	489	389	487
30	243	e120	e80	e85	---	272	1,090	2,470	2,510	461	344	477
31	e120	---	e90	e80	---	399	---	2,120	---	429	314	---
TOTAL	4,413	3,175	3,085	2,575	2,435	5,011	26,937	74,930	89,460	33,127	10,931	12,325
MEAN	142	106	99.5	83.1	84.0	162	898	2,417	2,982	1,069	353	411
MAX	243	130	120	100	120	401	1,720	4,320	5,130	2,070	879	657
MIN	116	85	80	65	65	75	551	1,250	2,040	429	235	211
AC-FT	8,750	6,300	6,120	5,110	4,830	9,940	53,430	148,600	177,400	65,710	21,680	24,450

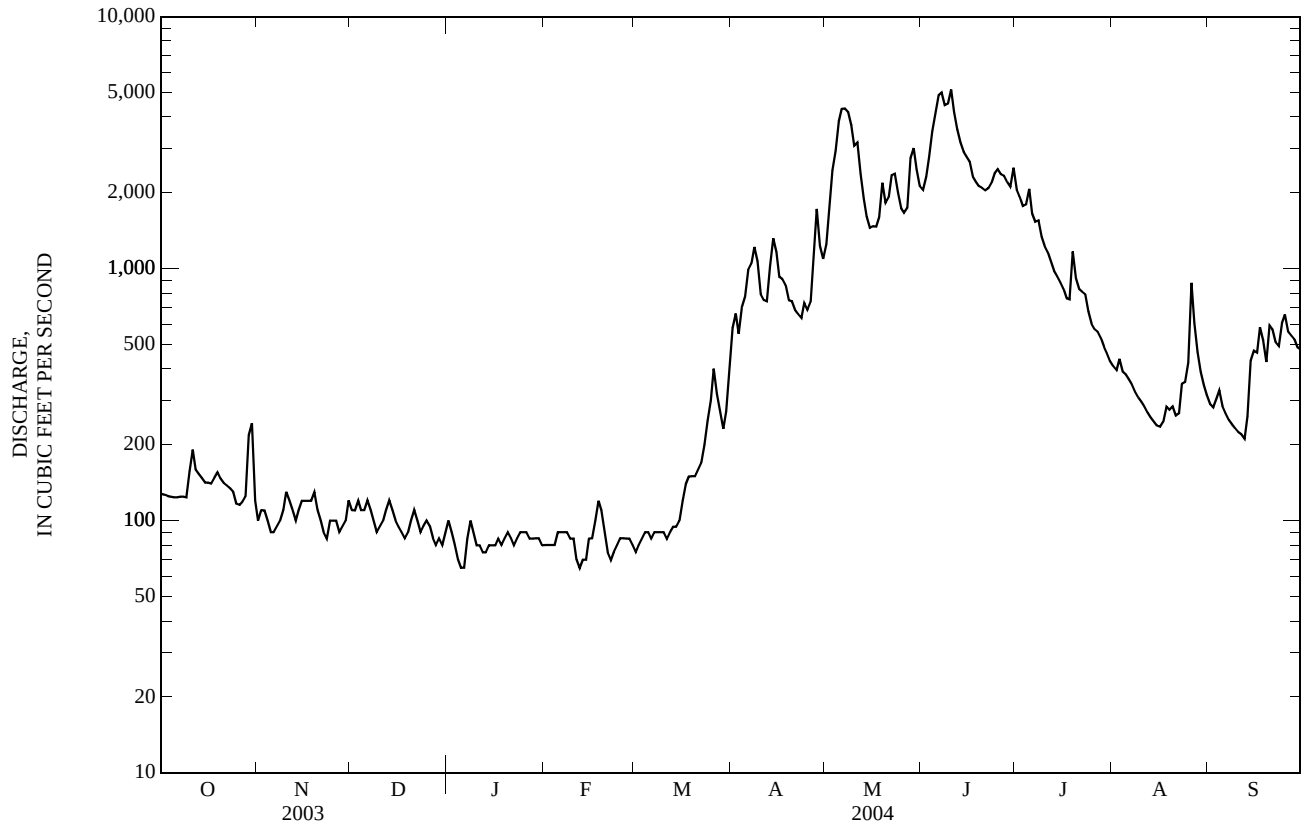
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2004, BY WATER YEAR (WY)*

MEAN	211	155	119	106	102	114	476	2,860	4,229	1,342	351	231
MAX	485	330	202	200	171	204	1,684	6,885	9,044	3,256	886	518
(WY)	(1942)	(1928)	(1951)	(1969)	(1969)	(1999)	(1990)	(1928)	(1996)	(1943)	(1968)	(1968)
MIN	109	88.1	75.5	71.8	70.0	67.9	106	969	1,408	344	173	115
(WY)	(1989)	(1937)	(1953)	(1989)	(1942)	(1964)	(1945)	(1933)	(1934)	(1931)	(1940)	(1988)

06188000 LAMAR RIVER NEAR TOWER RANGER STATION, YELLOWSTONE NATIONAL PARK—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1923 - 2004*	
ANNUAL TOTAL	297,974		268,404			
ANNUAL MEAN	816		733		864	
HIGHEST ANNUAL MEAN					1,531	1997
LOWEST ANNUAL MEAN					525	1934
HIGHEST DAILY MEAN	11,600	May 29	5,130	Jun 10	15,600	Jun 10, 1996
LOWEST DAILY MEAN	70	Feb 24	65	Jan 5	45	Mar 23, 1964
ANNUAL SEVEN-DAY MINIMUM	76	Feb 24	76	Feb 9	57	Mar 5, 1964
MAXIMUM PEAK FLOW			5,790	Jun 7	19,500	Jun 10, 1996
MAXIMUM PEAK STAGE			6.63	Jun 7	12.15	Jun 10, 1996
INSTANTANEOUS LOW FLOW					a40	Mar 16, 1945
ANNUAL RUNOFF (AC-FT)	591,000		532,400		626,000	
10 PERCENT EXCEEDS	2,180		2,240		2,910	
50 PERCENT EXCEEDS	141		245		182	
90 PERCENT EXCEEDS	90		85		90	

*--During periods of record [September 1922, April 1923 to September 1969, May 1985 to September 1986 (seasonal records only), October 1988 to current year].
a--Observed, but may have been lower during periods of no gage-height record in winter.
e--Estimated.



06190540 BOILING RIVER AT MAMMOTH, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°59'07", long 110°41'18" (NAD 27), Yellowstone National Park, Hydrologic Unit 10070001, on left bank 50 ft downstream from outfall, 150 ft upstream of mouth, and 0.8 mi northeast of U.S. Post Office at Mammoth.

DRAINAGE AREA.-- Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1995, October 2002 to current year. Published as "Hot River" at Mammoth from 1989-94.

GAGE.--Water-stage recorder. Elevation of gage is 5,666.11 ft (NGVD 29) (levels by U.S. National Park Service).

REMARKS.--Water-discharge records good. No regulation or diversion upstream from station, however, flow is added from sinkholes upstream from spring. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	22	e22	20	21	23	24	26	27	26	24
2	22	21	22	e22	20	21	23	24	26	27	26	24
3	22	21	22	e21	20	21	23	24	26	27	26	24
4	22	21	22	e21	21	21	23	24	27	27	26	24
5	22	20	22	e21	21	21	23	25	27	27	26	24
6	22	20	22	e21	21	21	23	25	27	27	26	24
7	22	21	e22	21	21	21	23	26	27	27	26	24
8	22	21	e22	21	21	21	23	26	27	27	26	24
9	22	21	e22	21	21	21	24	26	27	27	23	24
10	22	21	e22	21	21	21	23	26	27	26	20	24
11	21	21	e22	21	21	21	23	26	27	26	20	24
12	21	21	e22	21	21	21	23	26	27	26	20	24
13	21	21	e22	21	21	22	24	26	27	26	20	24
14	21	22	e22	21	21	22	24	25	27	26	20	24
15	21	22	e22	21	21	22	24	25	27	26	19	24
16	21	22	e22	21	21	22	24	25	27	26	20	24
17	21	22	e22	21	21	22	24	25	27	26	23	24
18	21	22	e21	21	21	22	24	26	27	26	24	24
19	21	22	e22	21	21	22	24	26	27	26	24	24
20	21	22	e22	21	21	22	24	26	27	26	24	24
21	21	22	e22	20	21	22	24	25	27	26	24	24
22	21	21	e22	20	21	22	24	26	27	26	24	24
23	21	21	e21	21	21	22	24	26	27	26	24	24
24	21	22	e22	21	21	22	24	26	27	26	24	24
25	21	22	e22	21	21	22	24	26	27	26	24	24
26	21	22	e22	21	21	22	24	25	27	26	24	24
27	21	22	e22	21	21	22	24	25	27	26	24	24
28	21	22	e21	21	22	22	25	26	27	26	24	24
29	21	22	e21	21	21	22	24	27	27	26	24	24
30	21	22	e22	21	---	22	24	27	27	26	24	24
31	20	---	e22	20	---	22	---	27	---	26	24	---
TOTAL	659	642	678	650	607	670	710	792	807	815	729	720
MEAN	21.3	21.4	21.9	21.0	20.9	21.6	23.7	25.5	26.9	26.3	23.5	24.0
MAX	22	22	22	22	22	22	25	27	27	27	26	24
MIN	20	20	21	20	20	21	23	24	26	26	19	24
AC-FT	1,310	1,270	1,340	1,290	1,200	1,330	1,410	1,570	1,600	1,620	1,450	1,430

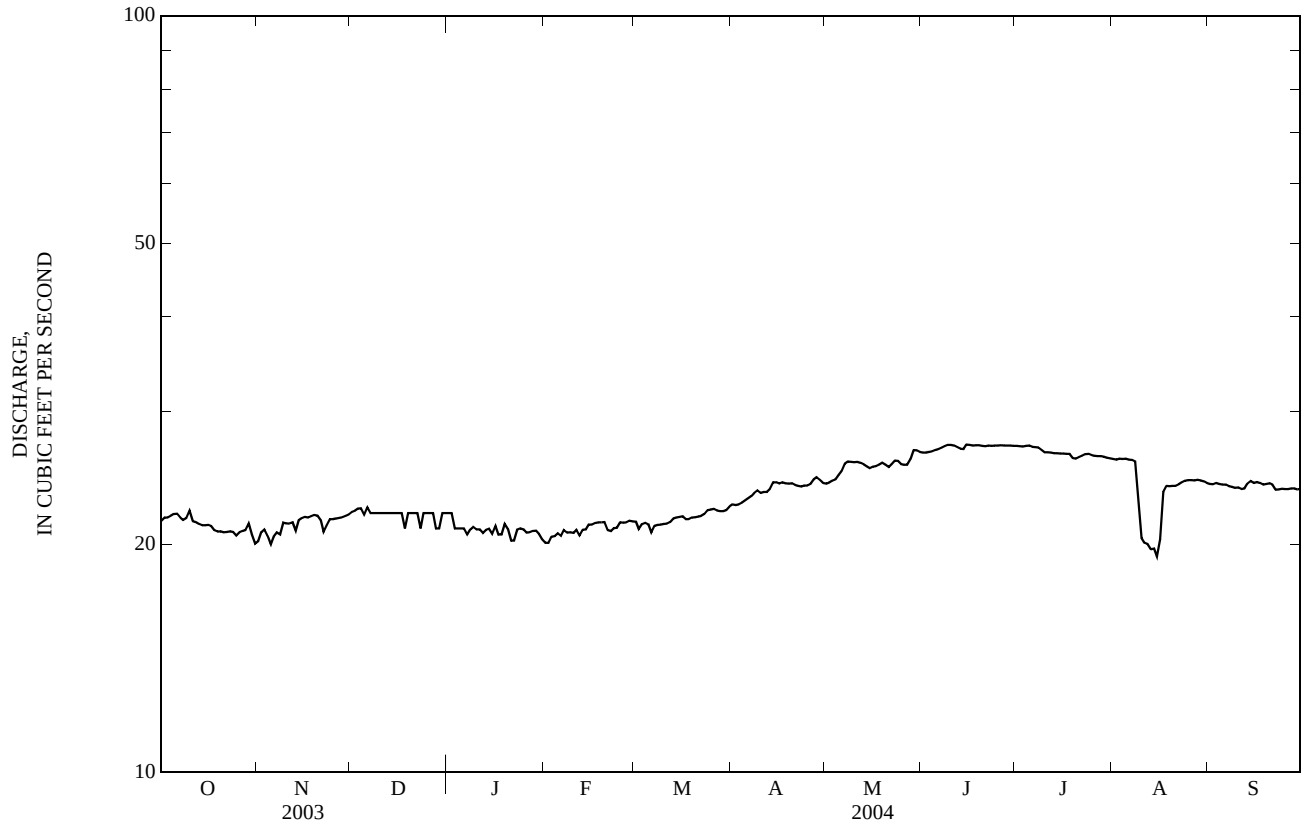
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)*

MEAN	26.7	25.6	25.4	25.9	25.0	25.3	26.7	29.3	29.0	27.4	26.4	25.9
MAX	29.9	29.1	28.3	29.8	29.6	30.8	31.5	33.1	33.0	31.2	29.1	28.6
(WY)	(1989)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(1995)	(1995)	(1995)	(1995)	(1995)
MIN	21.3	21.4	21.9	21.0	20.9	21.6	23.7	25.5	26.9	25.0	23.5	21.3
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2004)	(2003)

06190540 BOILING RIVER AT MAMMOTH, YELLOWSTONE NATIONAL PARK—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004*	
ANNUAL TOTAL	9,716		8,479			
ANNUAL MEAN	26.6		23.2		26.6	
HIGHEST ANNUAL MEAN					28.5	2003
LOWEST ANNUAL MEAN					23.2	2004
HIGHEST DAILY MEAN	33	May 16	27	May 29	36	May 20, 1995
LOWEST DAILY MEAN	20	Oct 31	19	Aug 15	19	Nov 23, 1993
ANNUAL SEVEN-DAY MINIMUM	20	Oct 31	20	Aug 10	20	Aug 10, 2004
MAXIMUM PEAK FLOW			28	Jul 4	b36	May 20, 1995
MAXIMUM PEAK STAGE			1.33	Jul 4	1.50	May 17, 1993
INSTANTANEOUS LOW FLOW			a19	Oct 31	c17	Jan 30, 1994
ANNUAL RUNOFF (AC-FT)	19,270		16,820		19,240	
10 PERCENT EXCEEDS	32		27		30	
50 PERCENT EXCEEDS	27		22		27	
90 PERCENT EXCEEDS	21		21		23	

*--During periods of operation (October 1988 to September 1995, October 2002 to current year).
a--Gage height, 1.02 ft.
b--Gage height, 1.45 ft.
c--Gage height, 1.06 ft.
e--Estimated.



06190540 BOILING RIVER AT MAMMOTH, YELLOWSTONE NATIONAL PARK—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to September 1994, October 2002 to September 2003.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1988 to September 1990.
WATER TEMPERATURE: October 1988 to September 1994, October 2002 to September 2003.

INSTRUMENTATION.--Temperature recorder installed Sept. 25, 2002.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,410 microsiemens per centimeter (µS/cm) at 25.0°C, Jan. 29, 1990; minimum daily, 1,500 µS/cm at 25.0°C, July, 17, 22, 23, 1990.
WATER TEMPERATURE: Maximum, 59.0°C, many days October 2003 to January 2004 and August 2004; minimum, 38.0°C, June 16, 27, 1989, Apr. 19, 1990.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum 59.0°C, many days October to January and August; minimum, 44.5°C, May 29, 30, June 10-12.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	56.0	56.0	56.0	59.0	54.0	57.5	55.5	55.5	55.5	55.0	55.0	55.0
2	56.0	56.0	56.0	57.0	54.0	55.5	55.5	55.5	55.5	58.5	55.0	56.0
3	56.0	56.0	56.0	55.5	55.0	55.0	55.5	55.5	55.5	59.0	55.5	58.0
4	56.0	56.0	56.0	58.5	54.5	56.5	56.5	55.5	55.5	59.0	56.0	58.0
5	56.0	56.0	56.0	59.0	56.5	58.0	58.5	55.5	56.5	57.5	57.0	57.5
6	56.0	56.0	56.0	58.5	55.0	57.0	55.5	55.5	55.5	57.0	56.0	56.5
7	56.5	56.0	56.0	58.5	55.0	56.5	55.5	55.5	55.5	56.0	55.0	56.0
8	56.5	56.0	56.0	59.0	54.5	56.5	55.5	55.5	55.5	55.0	54.5	55.0
9	56.5	56.0	56.0	55.0	54.5	54.5	58.5	55.5	56.5	55.0	54.5	54.5
10	56.5	54.5	55.0	55.0	54.5	55.0	55.5	55.5	55.5	55.5	55.0	55.0
11	56.5	54.5	55.5	55.5	55.0	55.0	56.0	55.5	55.5	55.5	55.0	55.0
12	55.5	55.0	55.5	55.0	55.0	55.0	58.5	55.5	56.0	58.0	55.0	56.0
13	56.0	55.5	55.5	59.0	55.0	56.5	56.5	55.5	56.0	56.0	55.0	55.5
14	56.0	55.5	55.5	55.5	55.0	55.0	56.5	55.5	56.0	56.0	55.5	55.5
15	56.0	55.5	56.0	55.5	55.0	55.0	57.0	55.5	56.0	58.5	55.0	56.5
16	56.0	55.0	55.5	55.5	55.0	55.0	58.0	55.5	56.0	55.5	55.0	55.5
17	56.0	55.5	56.0	56.0	55.0	55.5	57.5	55.5	56.0	59.0	55.0	56.5
18	56.0	56.0	56.0	56.0	55.0	55.5	59.0	55.5	57.5	59.0	55.0	57.0
19	56.0	56.0	56.0	55.5	55.0	55.0	58.5	55.0	56.5	55.5	55.0	55.5
20	56.0	56.0	56.0	55.5	55.0	55.5	55.5	54.5	55.0	55.5	55.5	55.5
21	56.0	56.0	56.0	58.5	55.0	56.0	55.0	54.5	55.0	59.0	55.5	57.5
22	56.0	56.0	56.0	58.5	57.0	58.0	59.0	55.0	56.0	59.0	55.5	57.0
23	56.0	56.0	56.0	57.5	56.0	56.5	59.0	56.0	57.5	55.5	55.0	55.5
24	56.5	55.0	56.0	56.0	55.5	55.5	56.5	54.5	55.5	55.5	55.5	55.5
25	57.0	54.5	56.0	56.0	55.5	55.5	55.0	54.5	54.5	55.5	55.0	55.5
26	56.5	55.0	56.0	55.5	55.5	55.5	55.0	55.0	55.0	58.0	55.0	56.0
27	56.0	55.5	56.0	55.5	55.5	55.5	57.0	55.0	55.0	56.0	55.0	55.5
28	56.0	55.5	55.5	55.5	55.5	55.5	59.0	56.0	58.0	55.5	55.0	55.0
29	55.5	54.5	54.5	55.5	55.5	55.5	57.5	55.0	56.0	55.5	55.0	55.0
30	57.0	54.5	56.0	55.5	55.5	55.5	57.0	55.0	56.0	55.5	55.0	55.0
31	59.0	55.0	57.5	---	---	---	55.5	55.0	55.0	57.0	55.0	56.0
MONTH	59.0	54.5	56.0	59.0	54.0	56.0	59.0	54.5	56.0	59.0	54.5	56.0

06190540 BOILING RIVER AT MAMMOTH, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	57.0	55.0	56.0	54.0	53.5	54.0	53.0	52.5	53.0	51.0	49.5	50.0
2	57.0	55.0	56.0	58.5	54.0	55.0	53.0	52.5	53.0	51.0	49.5	50.5
3	55.0	55.0	55.0	56.5	54.0	54.5	53.5	52.5	53.0	50.5	49.5	50.0
4	57.0	55.0	55.5	54.5	54.0	54.0	53.0	52.0	52.5	50.0	49.0	49.5
5	55.0	55.0	55.0	56.5	54.0	54.5	53.0	52.0	52.5	50.0	48.5	49.0
6	57.0	55.0	56.0	57.5	54.0	56.0	52.0	51.5	52.0	49.5	48.0	48.5
7	57.0	55.0	55.0	56.5	54.5	55.0	52.5	51.5	52.0	48.5	47.0	47.5
8	55.0	55.0	55.0	55.0	54.5	54.5	52.0	51.5	51.5	48.0	46.5	47.5
9	55.0	55.0	55.0	55.0	54.5	54.5	52.0	51.0	51.5	48.0	46.5	47.5
10	58.0	55.0	55.5	54.5	54.5	54.5	52.0	51.5	51.5	48.0	47.0	47.5
11	57.0	55.0	56.0	54.5	54.5	54.5	52.0	51.0	51.5	47.5	46.5	47.0
12	58.5	55.0	56.5	54.5	54.0	54.5	52.5	51.5	52.0	47.5	46.5	47.0
13	57.0	55.0	56.0	54.5	53.5	54.0	51.5	50.0	51.0	47.5	46.5	47.0
14	57.5	55.0	56.0	54.0	53.5	54.0	51.0	50.0	50.5	48.0	47.0	47.5
15	55.0	55.0	55.0	54.0	53.5	54.0	50.5	50.0	50.0	48.5	47.5	48.0
16	56.5	55.0	55.0	54.0	53.5	54.0	51.0	50.5	50.5	48.5	48.0	48.0
17	55.0	55.0	55.0	54.0	53.5	54.0	50.5	50.5	50.5	49.0	47.5	48.0
18	55.0	55.0	55.0	54.0	53.5	54.0	51.0	50.5	50.5	48.5	47.5	48.0
19	55.0	55.0	55.0	54.0	53.5	53.5	51.5	50.5	51.0	48.0	47.0	47.5
20	55.0	55.0	55.0	54.0	53.5	53.5	51.0	50.5	50.5	48.5	47.5	48.0
21	58.0	55.0	56.5	54.0	53.5	54.0	51.5	50.5	51.0	48.5	48.0	48.0
22	58.0	55.0	56.5	54.0	53.5	53.5	51.5	50.5	51.0	48.5	47.0	47.5
23	57.5	55.0	56.0	54.0	53.0	53.5	51.5	50.5	51.0	47.0	46.5	46.5
24	57.5	55.0	56.0	53.5	52.5	53.0	51.0	50.5	51.0	47.0	46.5	46.5
25	55.5	54.0	54.0	53.0	52.5	53.0	51.5	50.5	51.0	48.0	47.0	47.5
26	54.0	54.0	54.0	53.0	52.5	53.0	51.5	50.5	51.0	48.0	47.5	47.5
27	54.0	54.0	54.0	53.5	53.0	53.0	51.0	50.0	50.5	48.5	47.5	48.0
28	54.0	53.5	54.0	53.5	53.0	53.5	50.0	49.0	49.5	48.0	46.0	47.0
29	54.0	53.5	54.0	54.0	53.5	53.5	50.0	49.0	49.5	46.0	44.5	45.0
30	---	---	---	54.0	53.0	53.5	50.5	49.5	50.0	46.0	44.5	45.0
31	---	---	---	53.5	52.5	53.0	---	---	---	46.5	45.0	45.5
MONTH	58.5	53.5	55.5	58.5	52.5	54.0	53.5	49.0	51.0	51.0	44.5	47.5
	JUNE			JULY			AUGUST			SEPTEMBER		
1	47.0	45.5	46.0	47.5	46.0	47.0	49.5	48.0	48.5	50.5	49.0	50.0
2	47.0	45.5	46.5	47.5	46.0	47.0	50.0	48.5	49.0	50.5	49.5	50.0
3	47.0	45.5	46.5	47.0	46.0	46.5	49.5	48.5	49.0	50.0	49.0	49.0
4	47.0	46.0	46.5	47.0	46.5	47.0	49.0	48.0	48.5	49.5	48.5	49.0
5	47.0	45.5	46.0	47.0	46.0	46.5	49.5	48.0	48.5	49.5	49.0	49.5
6	46.5	45.5	46.0	48.0	46.0	47.0	49.5	48.0	49.0	50.0	48.5	49.5
7	46.5	45.0	45.5	48.0	46.5	47.5	49.5	48.0	48.5	50.0	49.0	49.5
8	46.0	45.0	45.5	48.0	46.5	47.0	49.5	48.0	48.5	50.5	49.0	50.0
9	46.0	45.0	45.5	48.0	46.5	47.5	58.5	48.0	53.5	50.5	49.5	50.0
10	45.5	44.5	45.0	48.5	47.0	47.5	58.5	58.5	58.5	50.0	49.5	50.0
11	45.5	44.5	45.0	48.5	47.0	47.5	59.0	58.5	58.5	50.5	49.5	50.0
12	46.0	44.5	45.5	48.5	46.5	47.5	59.0	58.5	59.0	50.5	49.5	50.0
13	46.5	45.0	45.5	48.0	47.0	47.5	59.0	59.0	59.0	49.5	48.5	49.0
14	47.0	45.0	46.0	49.0	47.0	48.0	59.0	59.0	59.0	48.5	48.0	48.0
15	46.5	45.0	45.5	49.0	47.5	48.5	59.0	59.0	59.0	48.5	48.0	48.0
16	46.0	45.0	45.5	49.0	47.5	48.0	59.0	51.5	56.5	49.0	48.0	48.5
17	46.5	45.0	45.5	49.0	47.5	48.5	51.5	50.0	50.5	49.5	48.5	49.0
18	46.0	45.0	45.5	49.0	47.5	48.5	50.0	49.5	50.0	49.5	49.0	49.0
19	46.5	45.0	46.0	49.0	48.5	49.0	50.5	49.5	50.0	49.5	48.5	49.0
20	46.5	45.5	46.0	49.5	48.5	48.5	50.0	49.0	49.5	48.5	48.0	48.5
21	47.0	45.0	46.0	49.0	48.0	48.5	50.0	49.5	50.0	48.5	48.0	48.0
22	47.0	45.5	46.0	49.0	48.0	48.5	50.0	49.0	49.5	48.0	47.5	48.0
23	47.0	45.5	46.5	49.0	47.5	48.0	49.5	49.0	49.0	48.5	48.0	48.0
24	47.0	45.5	46.5	49.0	47.5	48.0	49.5	48.5	49.0	49.0	48.0	48.5
25	47.0	46.0	46.5	49.0	47.5	48.0	49.5	48.5	49.0	49.0	48.0	48.5
26	47.0	45.5	46.5	49.0	48.0	48.5	48.5	48.0	48.5	49.0	48.5	49.0
27	47.0	46.0	46.5	49.0	47.5	48.5	49.0	48.0	48.5	49.5	48.5	49.0
28	47.5	46.0	46.5	49.0	47.5	48.5	49.5	48.0	49.0	49.0	48.5	49.0
29	47.5	46.0	47.0	49.0	47.5	48.5	50.0	48.5	49.5	49.0	48.0	49.0
30	47.0	46.5	46.5	49.0	47.5	48.5	50.0	49.0	49.5	49.5	48.5	49.0
31	---	---	---	49.0	48.0	48.5	50.5	49.0	50.0	---	---	---
MONTH	47.5	44.5	46.0	49.5	46.0	48.0	59.0	48.0	51.5	50.5	47.5	49.0

06191000 GARDNER RIVER NEAR MAMMOTH, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°59'33", long 110°41'26" (NAD 27), Yellowstone National Park, Hydrologic Unit 10070001, on left bank at Wyoming-Montana state line, 400 ft upstream from highway bridge, 0.5 mi downstream from Boiling River, 1.5 mi north of Mammoth, and at river mile 2.9.

DRAINAGE AREA.--202 mi^2.

PERIOD OF RECORD.--October 1938 to September 1972, April l984 to current year. Prior to October 1959, published as Gardiner River near Mammoth.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,623.97 ft (NGVD 29) (levels by National Park Service).

REMARKS.--Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	85	98	100	82	85	125	210	393	305	147	117
2	100	96	96	94	83	81	129	253	396	304	145	117
3	100	97	96	91	90	82	130	303	429	289	148	120
4	100	94	94	89	86	81	143	363	491	294	146	120
5	100	77	93	80	88	81	160	440	545	314	143	119
6	100	82	97	87	87	70	179	482	645	276	138	117
7	100	84	99	105	87	80	188	489	655	264	136	116
8	100	89	97	102	86	82	193	502	608	262	134	115
9	98	99	88	102	85	85	186	473	608	243	133	114
10	111	99	97	96	83	87	157	430	677	231	131	113
11	105	95	95	96	83	86	152	429	577	224	129	112
12	105	95	93	90	68	86	155	376	496	216	127	112
13	104	93	89	90	87	85	177	332	450	211	125	128
14	102	96	90	90	84	85	196	299	428	206	123	142
15	101	94	92	85	87	86	190	279	428	200	122	132
16	103	95	91	93	86	86	168	306	416	197	122	143
17	101	91	93	85	85	86	178	306	381	192	125	132
18	98	94	79	85	88	89	176	323	371	190	132	123
19	98	97	89	92	87	95	168	358	363	221	128	124
20	96	95	102	88	84	96	172	321	359	203	126	136
21	96	94	104	78	76	94	164	318	350	196	126	129
22	96	79	91	83	75	98	159	409	341	199	130	125
23	95	76	80	89	82	104	158	447	350	183	145	126
24	94	92	96	89	83	111	168	388	360	175	140	125
25	91	89	105	87	84	111	163	339	360	170	145	120
26	95	93	97	85	85	109	178	327	354	167	156	118
27	96	95	96	83	85	103	216	333	347	164	141	119
28	96	95	84	87	84	100	246	484	339	159	132	120
29	109	97	92	86	83	99	214	585	323	154	126	115
30	87	98	90	87	---	103	206	489	323	151	122	115
31	87	---	101	83	---	112	---	422	---	148	119	---
TOTAL	3,064	2,755	2,904	2,777	2,433	2,838	5,194	11,815	13,163	6,708	4,142	3,664
MEAN	98.8	91.8	93.7	89.6	83.9	91.5	173	381	439	216	134	122
MAX	111	99	105	105	90	112	246	585	677	314	156	143
MIN	87	76	79	78	68	70	125	210	323	148	119	112
AC-FT	6,080	5,460	5,760	5,510	4,830	5,630	10,300	23,440	26,110	13,310	8,220	7,270

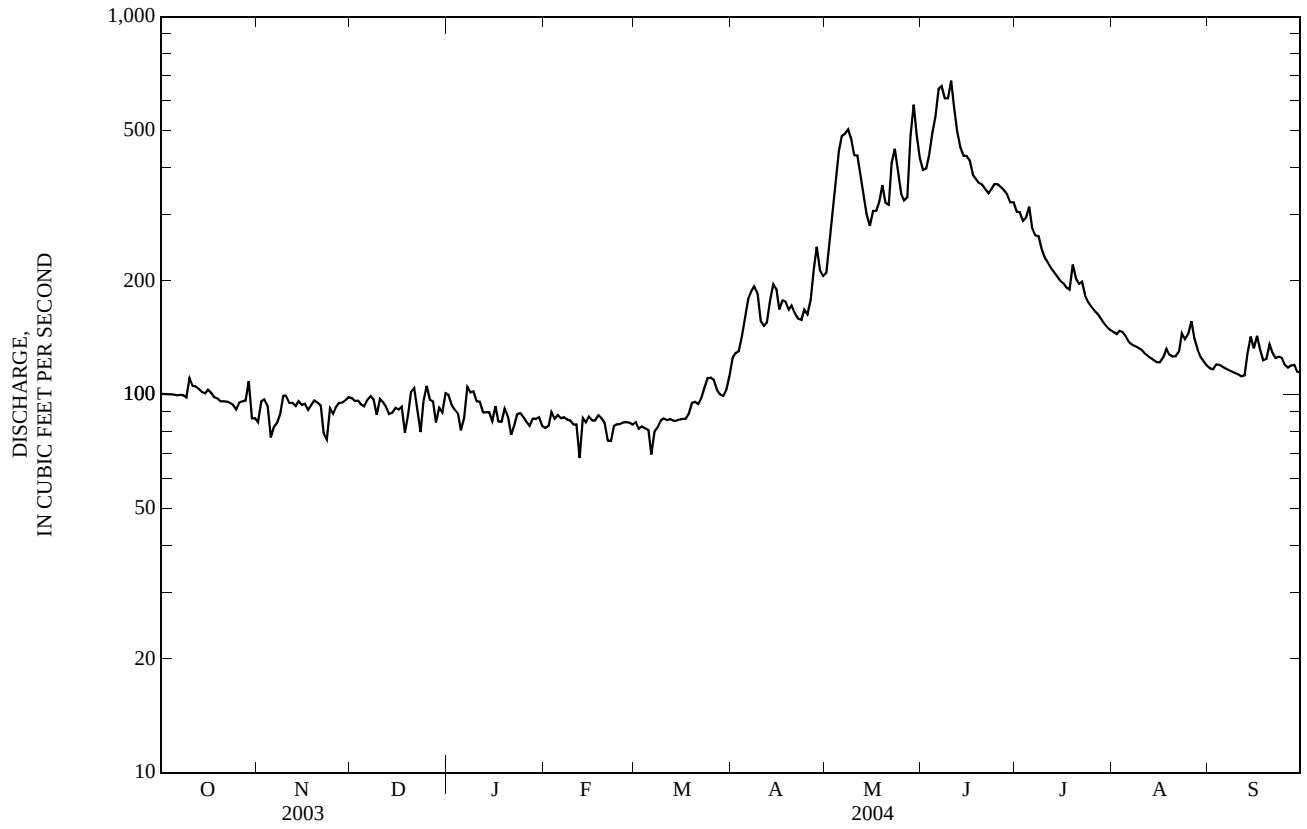
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)*

MEAN	127	112	102	96.9	92.9	93.8	142	507	707	300	161	136
MAX	175	151	135	134	128	128	304	1,067	1,354	662	236	190
(WY)	(1969)	(1998)	(1998)	(1998)	(1998)	(1998)	(1990)	(1997)	(1971)	(1943)	(1943)	(1968)
MIN	94.9	85.5	79.3	77.6	75.0	75.4	84.1	283	212	133	103	93.4
(WY)	(2002)	(1940)	(1941)	(1941)	(1940)	(1942)	(1945)	(1960)	(1987)	(1988)	(1988)	(1988)

06191000 GARDNER RIVER NEAR MAMMOTH, YELLOWSTONE NATIONAL PARK—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004*	
ANNUAL TOTAL	64,091		61,457			
ANNUAL MEAN	176		168		215	
HIGHEST ANNUAL MEAN					324	1997
LOWEST ANNUAL MEAN					138	1988
HIGHEST DAILY MEAN	1,520	Jun 1	677	Jun 10	1,830	May 29, 1956
LOWEST DAILY MEAN	55	Feb 24	68	Feb 12	53	Dec 15, 1988
ANNUAL SEVEN-DAY MINIMUM	76	Feb 19	80	Mar 2	61	Feb 1, 1989
MAXIMUM PEAK FLOW			711	Jun 7	b2,080	Jun 4, 1956
MAXIMUM PEAK STAGE			3.42	Jun 7	5.03	Jun 2, 1997
INSTANTANEOUS LOW FLOW			a44	Feb 12	c35	Mar 28, 1942
ANNUAL RUNOFF (AC-FT)	127,100		121,900		155,800	
10 PERCENT EXCEEDS	367		360		504	
50 PERCENT EXCEEDS	101		112		121	
90 PERCENT EXCEEDS	82		85		87	

*--During periods of record (October 1938 to September 1972, April 1984 to present).
a--Gage height, 1.82 ft, result of freezeup.
b--Gage height, 4.46 ft.
c--Gage height, 1.08 ft.



06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT

LOCATION.--Lat 45°06'43", long 110°47'37" (NAD 27), in NW¼SE¼NW¼ sec.30, T.8 S., R.8 E., Park County, Hydrologic Unit 10070002, on left bank 20 ft downstream from county road bridge at Corwin Springs, 1.3 mi upstream from Mol Heron Creek, 7 mi northwest of Gardiner, and at river mile 549.7.

DRAINAGE AREA.--2,619 mi^2.

PERIOD OF RECORD.--August 1889 to November 1893 (published as "at Horr"), September 1910 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1509: 1889-94, 1911, 1913, 1916-18, 1920-21, 1925, 1927. WSP 1559: Drainage area. WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,079.09 ft (NGVD 29). Aug. 12, 1889, to Nov. 4, 1893, nonrecording gages at site 2 mi upstream at different elevations. Sept. 2, 1910, to Apr. 19, 1935, nonrecording gages on bridge at present elevation.

REMARKS.--Records good. Natural storage in Yellowstone Lake. Diversions for irrigation of about 960 acres of which 40 acres lies downstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	857	854	783	722	744	1,430	2,660	5,290	6,100	2,820	1,970
2	1,150	937	812	768	751	723	1,570	3,200	5,540	5,870	2,760	1,950
3	1,130	962	838	723	759	737	1,510	4,180	6,110	5,650	2,790	1,980
4	1,130	950	829	e680	759	755	1,660	4,920	7,190	5,590	2,700	1,970
5	1,120	809	730	e660	759	751	1,830	6,270	8,450	6,090	2,630	1,920
6	1,110	824	817	e680	760	721	2,080	7,150	9,870	5,480	2,580	1,880
7	1,110	856	871	e740	762	676	2,200	7,240	10,500	5,190	2,520	1,850
8	1,110	878	822	789	760	766	2,420	7,200	9,580	5,250	2,470	1,820
9	1,100	903	773	787	762	774	2,330	6,690	9,640	4,880	2,400	1,790
10	1,170	901	726	773	739	808	1,960	5,790	11,100	4,660	2,360	1,760
11	1,220	914	791	770	751	788	1,850	5,980	9,780	4,520	2,280	1,730
12	1,170	916	792	767	712	794	1,830	5,040	8,620	4,360	2,240	1,720
13	1,150	860	805	745	711	808	2,140	4,320	7,830	4,190	2,200	1,780
14	1,110	908	806	750	732	793	2,550	3,880	7,320	4,100	2,160	2,060
15	1,090	910	790	742	736	801	2,510	3,690	7,150	3,990	2,110	2,130
16	1,090	899	735	748	745	796	2,220	3,710	6,920	3,900	2,080	2,060
17	1,080	909	776	742	757	797	2,150	3,880	6,470	3,780	2,080	2,230
18	1,070	871	723	731	780	824	2,140	3,990	6,240	3,690	2,170	2,090
19	1,070	902	700	740	804	875	2,000	5,010	6,130	4,340	2,110	1,950
20	1,060	921	724	753	784	965	1,960	4,450	6,060	4,020	2,080	2,170
21	1,040	870	791	741	751	903	1,900	4,530	6,000	3,880	2,050	2,180
22	1,020	810	780	724	728	935	1,850	5,260	6,010	3,760	2,050	2,040
23	1,010	793	705	734	736	1,020	1,780	5,760	6,200	3,770	2,170	2,020
24	1,000	914	682	756	748	1,130	1,900	5,150	6,490	3,530	2,240	2,130
25	952	780	768	773	757	1,270	1,890	4,600	6,610	3,390	2,150	2,190
26	961	765	784	751	769	1,240	1,950	4,460	6,540	3,310	2,830	2,080
27	967	778	762	734	770	1,140	2,450	4,520	6,420	3,250	2,480	2,030
28	974	754	717	754	777	1,030	3,300	5,960	6,350	3,150	2,300	2,000
29	1,080	798	736	770	758	967	2,750	6,860	6,240	3,040	2,180	1,950
30	1,150	853	749	780	---	983	2,530	6,160	6,550	2,960	2,090	1,930
31	917	---	753	761	---	1,140	---	5,520	---	2,900	2,020	---
TOTAL	33,471	26,002	23,941	23,149	21,839	27,454	62,640	158,030	219,200	132,590	72,100	59,360
MEAN	1,080	867	772	747	753	886	2,088	5,098	7,307	4,277	2,326	1,979
MAX	1,220	962	871	789	804	1,270	3,300	7,240	11,100	6,100	2,830	2,230
MIN	917	754	682	660	711	676	1,430	2,660	5,290	2,900	2,020	1,720
AC-FT	66,390	51,570	47,490	45,920	43,320	54,460	124,200	313,500	434,800	263,000	143,000	117,700

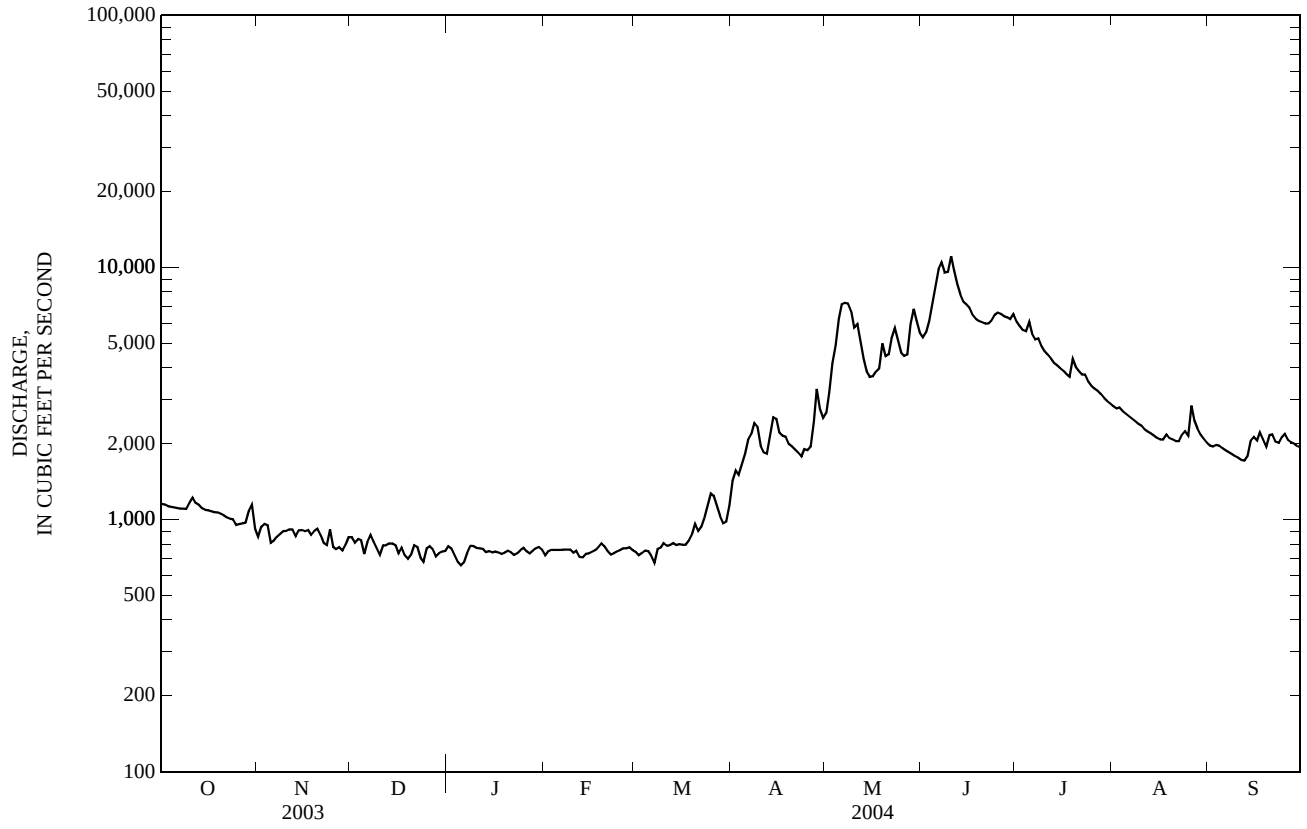
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2004, BY WATER YEAR (WY)*

MEAN	1,513	1,184	961	849	837	919	1,553	6,094	11,430	6,756	3,166	1,946
MAX	2,429	2,058	1,424	1,361	1,340	1,376	3,542	13,590	22,540	13,260	5,688	3,207
(WY)	(1973)	(1928)	(1984)	(1997)	(1997)	(1997)	(1990)	(1928)	(1997)	(1982)	(1982)	(1968)
MIN	781	702	551	448	411	412	576	2,575	4,245	2,025	1,319	938
(WY)	(1989)	(1989)	(1937)	(1937)	(1937)	(1937)	(1937)	(1975)	(1934)	(1919)	(1919)	(1988)

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1889 - 2004*	
ANNUAL TOTAL	1,012,864		859,776			
ANNUAL MEAN	2,775		2,349		3,109	
HIGHEST ANNUAL MEAN					5,158	1997
LOWEST ANNUAL MEAN					1,903	1934
HIGHEST DAILY MEAN	21,200	Jun 1	11,100	Jun 10	32,000	Jun 14, 1918
LOWEST DAILY MEAN	682	Dec 24	660	Jan 5	380	Feb 5, 1989
ANNUAL SEVEN-DAY MINIMUM	729	Dec 18	719	Jan 1	393	Feb 4, 1937
MAXIMUM PEAK FLOW			11,800	Jun 10	b32,200	Jun 10, 1996
MAXIMUM PEAK STAGE			6.56	Jun 10	11.50	Jun 14, 1918
INSTANTANEOUS LOW FLOW			a611	Mar 7	c343	Feb 2, 1989
ANNUAL RUNOFF (AC-FT)	2,009,000		1,705,000		2,252,000	
10 PERCENT EXCEEDS	7,140		6,000		8,480	
50 PERCENT EXCEEDS	1,120		1,350		1,400	
90 PERCENT EXCEEDS	774		745		760	

*--During periods of operation (August 1889 to November 1893, September 1910 to current year).
a--Gage height, 0.82 ft, result of freezeup.
b--Gage height, 10.92 ft.
c--Gage height, 0.12 ft, result of freezeup.
e--Estimated.



06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT

LOCATION.--Lat 45°35'50", long 110°33'55" (NAD 27), in NE¼NW¼NW¼ sec. 12, T.3 S., R.9 E., Park County, Hydrologic Unit 10070002, on right bank 50 ft downstream from bridge on Montana Secondary Highway 540, 2 mi downstream from Suce Creek, 4 mi south of Livingston, and at river mile 501.4.

DRAINAGE AREA.--3,551 mi^2.

PERIOD OF RECORD.--May 1897 to December 1905, August 1928 to September 1932, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1899. WSP 1509: 1902. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,542.49 ft (NGVD 29). May 2, 1897, to Dec. 31, 1905, nonrecording gage on highway bridge at different elevation. Aug. 23, 1928, to Sept. 30, 1932, and Mar. 14, 1938, to Feb. 3, 1951, nonrecording gage on highway bridge at present elevation.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions for irrigation of about 24,200 acres of which about 2,000 acres is downstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,410	1,190	1,240	e1,100	1,010	1,020	1,540	2,760	5,610	6,880	3,080	2,230
2	1,410	1,200	1,210	e1,050	e1,000	1,010	1,820	3,110	5,630	6,520	3,020	2,230
3	1,400	1,290	1,170	e1,000	e1,000	994	1,880	3,970	6,050	6,290	2,990	2,230
4	1,380	1,320	1,200	e950	1,030	1,010	1,830	4,930	7,030	6,140	2,940	2,220
5	1,370	1,230	1,150	e900	1,050	1,020	2,100	6,230	8,470	6,720	2,870	2,220
6	1,360	e1,150	1,070	e900	1,040	1,010	2,300	7,430	10,200	6,370	2,790	2,160
7	1,360	e1,150	1,240	e1,000	1,020	944	2,540	7,690	11,400	5,910	2,730	2,120
8	1,350	1,200	1,230	e1,100	1,050	975	2,710	7,730	10,600	5,880	2,680	2,080
9	1,340	1,290	1,160	e1,150	1,050	1,040	2,830	7,390	10,300	5,550	2,600	2,040
10	1,380	1,280	1,060	e1,150	1,030	1,060	2,590	6,470	12,200	5,260	2,530	2,000
11	1,470	1,280	1,100	e1,130	e1,000	1,070	2,260	6,320	11,800	5,110	2,470	1,950
12	1,510	1,280	1,130	1,110	e1,000	1,050	2,180	5,800	10,300	4,910	2,400	1,940
13	1,470	1,260	1,150	1,130	e950	1,070	2,270	5,020	9,160	4,750	2,350	1,980
14	1,450	1,240	1,170	1,110	e1,000	1,070	2,750	4,520	8,430	4,620	2,300	2,130
15	1,430	1,270	1,160	1,070	e1,020	1,060	2,970	4,200	8,070	4,480	2,250	2,420
16	1,410	1,260	1,060	1,080	1,030	1,060	2,760	4,020	7,790	4,370	2,230	2,370
17	1,410	1,260	1,090	1,040	1,050	1,060	2,510	4,220	7,380	4,240	2,230	2,470
18	1,380	1,270	1,070	1,020	1,100	1,070	2,540	4,130	6,980	4,110	2,310	2,460
19	1,370	1,230	1,040	1,060	1,110	1,110	2,420	4,850	6,810	4,400	2,310	2,340
20	1,360	1,280	1,120	1,060	1,080	1,200	2,230	4,790	6,780	4,590	2,270	2,330
21	1,340	1,280	1,110	1,060	1,050	1,210	2,190	4,700	6,630	4,310	2,250	2,560
22	1,330	1,180	1,150	e1,000	1,010	1,180	2,130	5,090	6,590	4,130	2,230	2,440
23	1,310	e1,100	1,040	e1,000	1,000	1,230	2,040	5,900	6,760	4,150	2,270	2,380
24	1,290	e1,200	991	1,100	1,020	1,340	2,020	5,680	7,140	3,920	2,460	2,420
25	1,280	e1,100	1,100	e1,050	1,030	1,500	2,150	5,080	7,380	3,710	2,390	2,540
26	1,230	e1,050	1,140	e1,050	1,050	1,590	2,080	4,840	7,360	3,580	2,790	2,500
27	1,260	e1,050	1,130	e1,000	1,070	1,520	2,310	4,810	7,210	3,490	2,870	2,410
28	1,280	1,070	e1,100	e1,050	1,070	1,390	3,150	5,520	7,070	3,390	2,650	2,390
29	1,340	1,190	e1,050	e1,050	1,050	1,290	3,360	7,050	6,990	3,280	2,500	2,350
30	1,520	1,190	e1,100	e1,050	---	1,240	2,840	6,760	7,110	3,170	2,380	2,310
31	1,380	---	e1,100	e1,050	---	1,310	---	6,010	---	3,140	2,290	---
TOTAL	42,580	36,340	34,831	32,570	29,970	35,703	71,300	167,020	241,230	147,370	78,430	68,220
MEAN	1,374	1,211	1,124	1,051	1,033	1,152	2,377	5,388	8,041	4,754	2,530	2,274
MAX	1,520	1,320	1,240	1,150	1,110	1,590	3,360	7,730	12,200	6,880	3,080	2,560
MIN	1,230	1,050	991	900	950	944	1,540	2,760	5,610	3,140	2,230	1,940
AC-FT	84,460	72,080	69,090	64,600	59,450	70,820	141,400	331,300	478,500	292,300	155,600	135,300

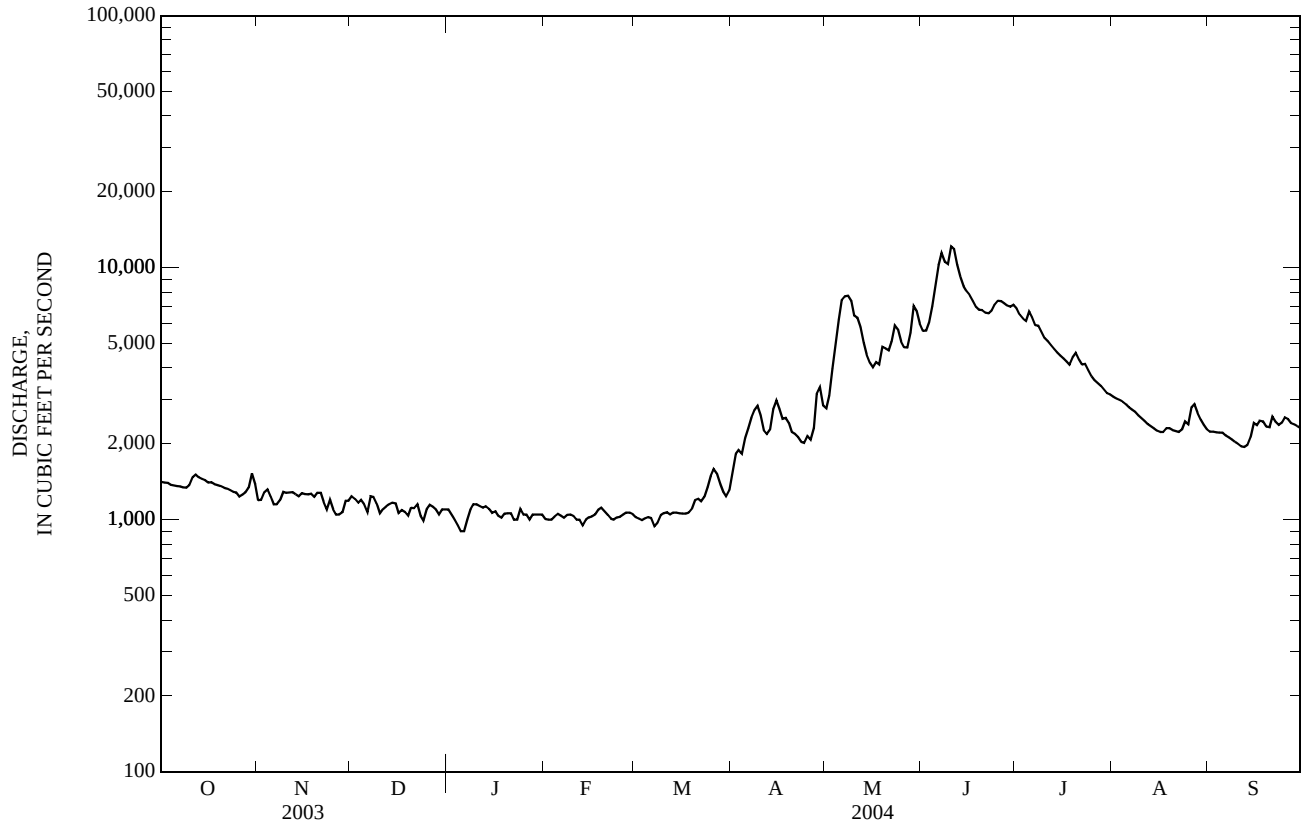
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1897 - 2004, BY WATER YEAR (WY)*

MEAN	2,012	1,677	1,383	1,220	1,216	1,296	1,969	6,988	13,330	7,656	3,620	2,406
MAX	3,115	2,599	1,984	1,757	1,800	1,901	3,852	13,070	27,140	14,990	6,000	3,806
(WY)	(1973)	(1984)	(1984)	(1984)	(1898)	(1898)	(1990)	(1897)	(1997)	(1975)	(1899)	(1968)
MIN	1,131	1,099	930	727	763	899	1,174	2,751	4,999	2,748	1,713	1,281
(WY)	(1989)	(1932)	(2002)	(1989)	(1989)	(1964)	(1961)	(1905)	(1987)	(1931)	(1988)	(2001)

06192500 YELLOWSTONE RIVER NEAR LIVINGSTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1897 - 2004*	
ANNUAL TOTAL	1,207,061		985,564			
ANNUAL MEAN	3,307		2,693		3,729	
HIGHEST ANNUAL MEAN					6,119	1997
LOWEST ANNUAL MEAN					2,395	2001
HIGHEST DAILY MEAN	24,800	Jun 1	12,200	Jun 10	36,000	Jun 6, 1997
LOWEST DAILY MEAN	991	Dec 24	900	Jan 5	540	Feb 4, 1989
ANNUAL SEVEN-DAY MINIMUM	1,070	Dec 18	986	Jan 1	571	Feb 1, 1989
MAXIMUM PEAK FLOW			13,300	Jun 10	38,000	Jun 6, 1997
MAXIMUM PEAK STAGE			7.16	Jun 10	10.72	Jun 6, 1997
ANNUAL RUNOFF (AC-FT)	2,394,000		1,955,000		2,702,000	
10 PERCENT EXCEEDS	8,270		6,480		9,750	
50 PERCENT EXCEEDS	1,400		1,560		1,880	
90 PERCENT EXCEEDS	1,140		1,040		1,130	

*--During periods operation (May 1897 to December 1905, August 1928 to September 1932, October 1937 to current year).
e--Estimated.



06195600 SHIELDS RIVER NEAR LIVINGSTON, MT

LOCATION.--Lat 45°44'18", long 110°28'45" (NAD 27), in NE¼SE¼NW¼ sec.22, T.1 S., R.10 E., Park County, Hydrologic Unit 10070003, on right bank 0.2 mi downstream from private road bridge, 6.5 mi northeast of Livingston, and at river mile 2.0.

DRAINAGE AREA.--852 mi^2.

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,420 ft (NGVD 29). Oct. 1, 1978, to Aug. 12, 1980, water-stage recorder at site 0.2 mi upstream at elevation 7.89 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 32,000 acres upstream from station. National Weather Service satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	e80	107	e60	e70	77	181	142	268	293	52	77
2	65	e85	102	e50	e64	75	195	139	229	303	52	77
3	64	e85	101	e45	e65	69	186	150	208	295	53	80
4	65	e75	e90	e40	e65	78	171	160	204	282	50	79
5	67	e70	e80	e45	e66	74	173	151	256	298	50	73
6	66	e75	e100	e55	e65	66	179	164	345	292	49	72
7	67	e80	108	e70	e70	60	197	146	366	275	46	76
8	68	e85	e90	e75	73	91	209	129	309	260	46	78
9	67	e100	e88	e80	69	119	246	112	277	243	45	74
10	68	110	e90	e85	e65	144	219	96	417	233	45	68
11	72	114	e90	e82	e62	134	189	85	1,220	220	43	68
12	78	111	e85	e80	e60	126	176	82	1,910	210	44	74
13	81	103	105	e85	e62	135	170	73	1,400	195	41	83
14	82	112	101	e85	e64	121	183	68	999	179	42	91
15	89	108	e90	e80	e66	116	198	62	832	158	35	91
16	91	107	e70	e80	69	114	196	62	724	146	35	87
17	93	108	e70	e78	71	118	183	66	608	138	39	83
18	90	106	e75	e75	83	125	181	60	523	123	46	79
19	85	110	e75	81	93	153	187	55	492	115	58	82
20	81	e100	e80	77	85	168	196	55	447	122	50	103
21	79	e85	e80	e65	75	153	201	52	386	118	55	114
22	77	e80	e75	e65	70	145	192	63	314	104	59	115
23	79	e85	e75	74	69	148	179	121	311	94	61	115
24	77	e95	e80	77	74	162	167	159	321	92	69	116
25	79	e90	e85	e55	83	181	163	150	355	82	75	114
26	80	e95	e82	e55	83	179	154	136	364	79	83	112
27	81	e95	e75	e50	86	171	151	141	354	75	85	108
28	83	e100	e60	e50	85	159	165	169	321	70	90	107
29	93	e105	e62	e65	80	147	179	244	296	65	91	107
30	99	110	e60	87	---	142	159	329	299	54	85	108
31	87	---	e70	73	---	154	---	310	---	53	83	---
TOTAL	2,418	2,864	2,601	2,124	2,092	3,904	5,525	3,931	15,355	5,266	1,757	2,711
MEAN	78.0	95.5	83.9	68.5	72.1	126	184	127	512	170	56.7	90.4
MAX	99	114	108	87	93	181	246	329	1,910	303	91	116
MIN	64	70	60	40	60	60	151	52	204	53	35	68
AC-FT	4,800	5,680	5,160	4,210	4,150	7,740	10,960	7,800	30,460	10,450	3,490	5,380

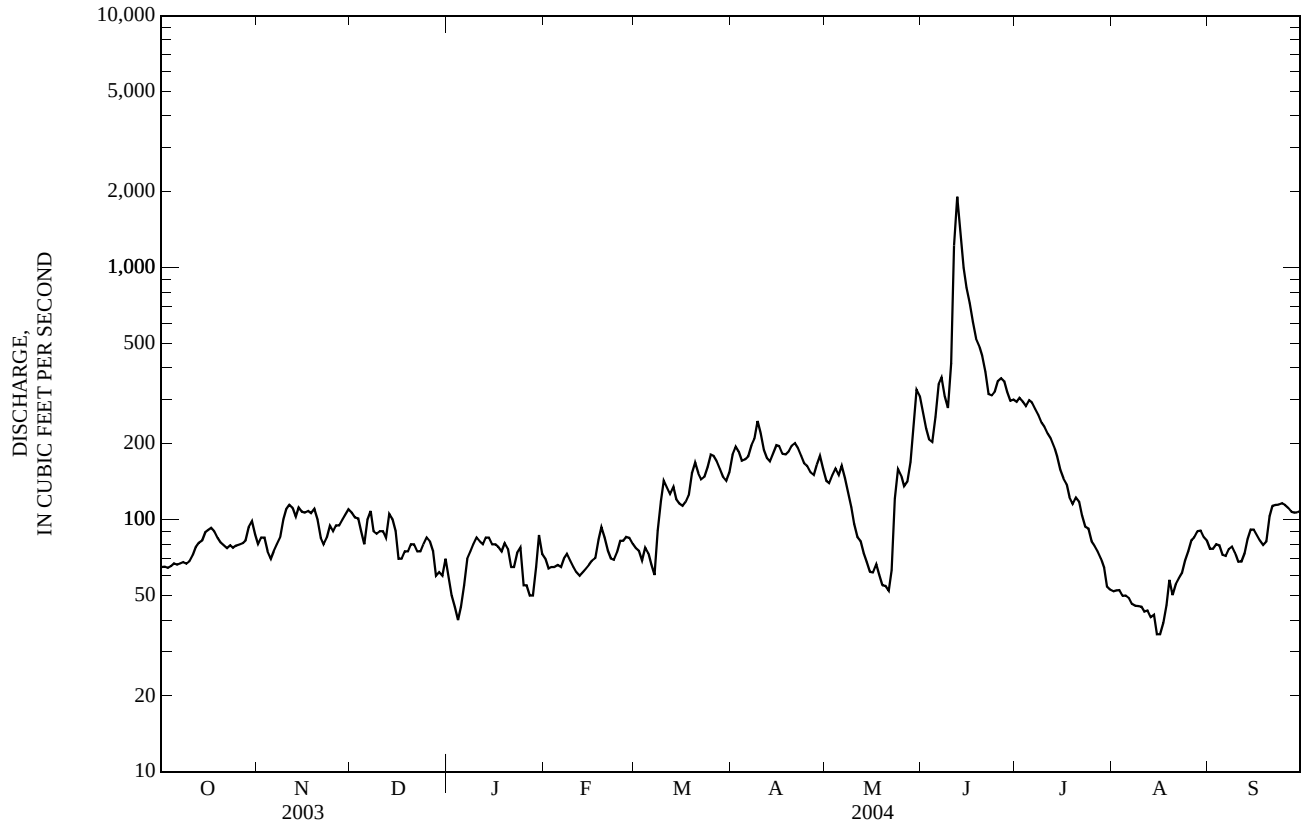
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2004, BY WATER YEAR (WY)

MEAN	146	131	107	101	122	179	369	790	752	308	128	129
MAX	275	195	145	225	363	461	627	1,962	2,260	1,135	677	388
(WY)	(1979)	(1984)	(1990)	(1984)	(1996)	(1997)	(1996)	(1997)	(1997)	(1993)	(1993)	(1993)
MIN	51.5	73.8	73.6	55.5	59.8	76.9	145	127	152	53.6	25.6	31.2
(WY)	(1989)	(1989)	(1988)	(1988)	(1988)	(2002)	(2000)	(2004)	(1985)	(1988)	(1988)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1979 - 2004	
ANNUAL TOTAL	85,489		50,548			
ANNUAL MEAN	234		138		272	
HIGHEST ANNUAL MEAN					610	1997
LOWEST ANNUAL MEAN					114	2000
HIGHEST DAILY MEAN	1,670	May 27	1,910	Jun 12	4,760	Jun 20, 1979
LOWEST DAILY MEAN	38	Aug 25	35	Aug 15	20	Aug 21, 1988
ANNUAL SEVEN-DAY MINIMUM	40	Sep 5	40	Aug 11	22	Aug 20, 1988
MAXIMUM PEAK FLOW			2,080	Jun 12	5,600	Jun 20, 1979
MAXIMUM PEAK STAGE			4.74	Jun 12	b6.80	Jun 20, 1979
INSTANTANEOUS LOW FLOW			a33	Aug 15	c17	Aug 20, 1988
ANNUAL RUNOFF (AC-FT)	169,600		100,300		197,100	
10 PERCENT EXCEEDS	659		257		670	
50 PERCENT EXCEEDS	89		87		135	
90 PERCENT EXCEEDS	48		60		70	

a--Gage height, 1.69 ft.
b--Site and datum then in use.
c--Gage height, 1.44 ft.
e--Estimated.

06195600 SHIELDS RIVER NEAR LIVINGSTON, MT—Continued



06200000 BOULDER RIVER AT BIG TIMBER, MT

LOCATION.--Lat 45°50'03", long 109°56'17" (NAD 27), in SE¼NE¼SE¼ sec.14, T.1 N., R.14 E., Sweet Grass County, Hydrologic Unit 10070002, on left bank 150 ft upstream from Old Boulder Bridge, 1 mi east of Big Timber, and at river mile 1.6.

DRAINAGE AREA.--523 mi^2.

PERIOD OF RECORD.--April 1947 to December 1953, March 1955 to current year. Monthly discharge only for April 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 4,056.39 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 13,300 acres, of which about 250 acres is downstream from station. Several observations of water temperature and specific conductance were made during the year. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	e120	152	e110	e80	95	135	199	445	1,640	195	82
2	75	e130	146	e90	e80	92	166	198	457	1,560	195	82
3	74	e130	144	e80	e80	90	162	271	514	1,440	218	86
4	72	e110	e120	e70	e75	94	155	406	855	1,390	214	83
5	72	e90	e90	e60	e85	93	173	609	1,540	1,650	191	79
6	73	e110	e130	e65	e80	92	205	847	2,350	1,470	172	77
7	74	e130	153	e90	e90	85	249	946	2,670	1,300	156	74
8	76	e150	149	e100	e90	106	261	980	2,110	1,410	138	72
9	83	e170	e120	e110	e85	116	296	943	1,840	1,190	132	67
10	100	181	e100	e110	e85	118	259	763	2,900	1,060	120	64
11	109	175	e95	e120	e80	113	214	685	2,750	1,030	107	63
12	112	166	e85	e120	e70	105	202	580	2,070	954	96	60
13	115	158	e120	e125	e75	105	201	461	1,710	816	90	60
14	112	161	150	126	e85	104	242	375	1,550	728	88	72
15	113	156	129	124	e95	100	284	307	1,470	708	82	75
16	116	152	e90	121	e95	99	283	265	1,400	645	74	76
17	118	151	e120	e115	103	100	263	278	1,230	544	76	75
18	125	151	e110	e105	108	102	260	264	1,090	517	80	77
19	132	150	e130	121	119	104	240	361	982	528	85	78
20	126	157	141	115	104	110	206	359	1,080	630	81	87
21	122	e100	131	e105	95	110	185	381	1,080	562	77	96
22	119	e90	e110	e110	89	106	169	432	1,150	484	76	90
23	117	e80	e100	e115	92	109	154	505	1,420	439	73	88
24	130	e100	e110	114	97	114	147	466	1,780	386	74	101
25	136	e100	124	e95	96	124	153	398	2,060	338	75	117
26	131	e110	e110	e85	94	133	139	372	2,020	309	93	111
27	140	e110	e95	e70	94	130	141	364	1,930	299	117	106
28	147	e130	e85	e70	101	123	215	454	1,750	274	111	107
29	195	170	e95	e100	102	118	278	702	1,790	247	100	102
30	e150	165	e90	e90	---	114	220	588	1,780	221	92	98
31	e130	---	e110	e85	---	117	---	496	---	202	87	---
TOTAL	3,470	4,053	3,634	3,116	2,624	3,321	6,257	15,255	47,773	24,971	3,565	2,505
MEAN	112	135	117	101	90.5	107	209	492	1,592	806	115	83.5
MAX	195	181	153	126	119	133	296	980	2,900	1,650	218	117
MIN	72	80	85	60	70	85	135	198	445	202	73	60
AC-FT	6,880	8,040	7,210	6,180	5,200	6,590	12,410	30,260	94,760	49,530	7,070	4,970

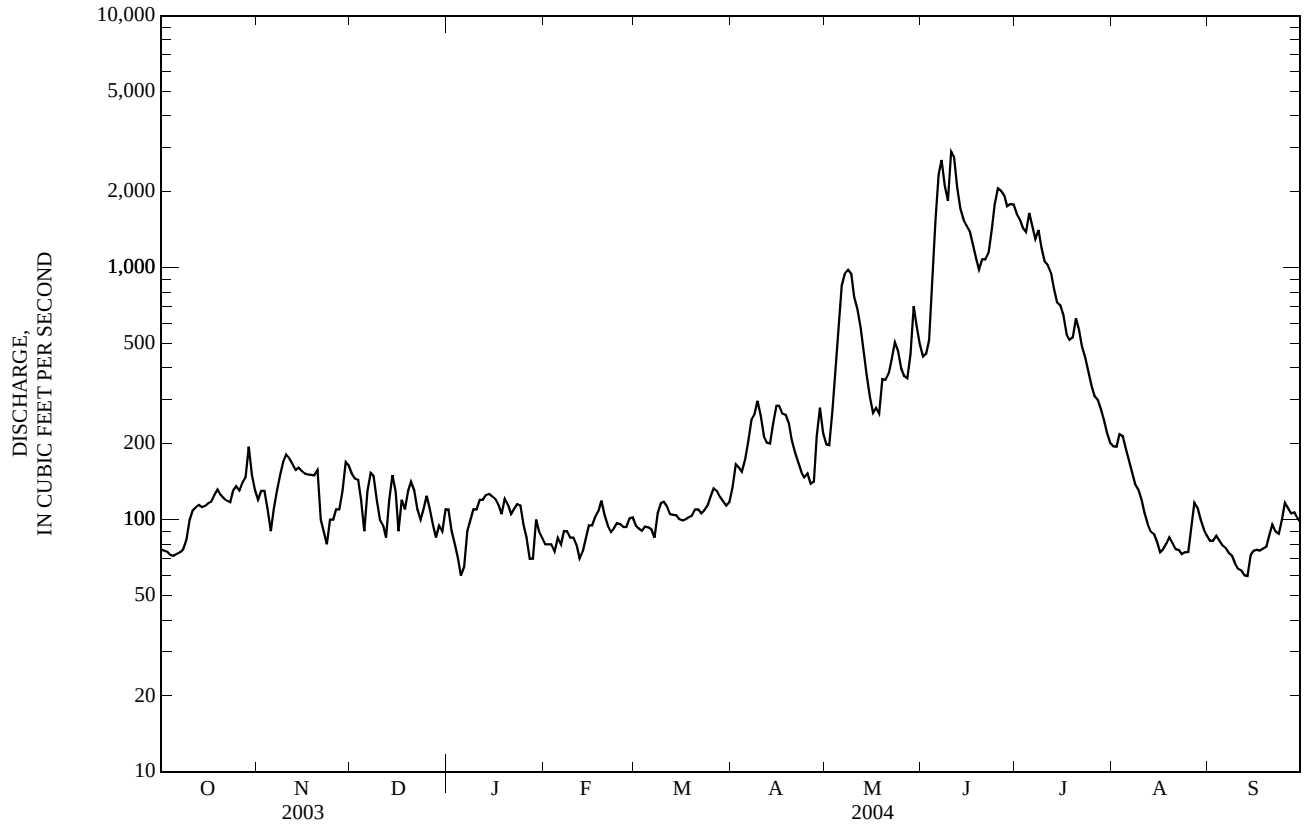
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2004, BY WATER YEAR (WY)*

MEAN	216	189	152	134	127	127	209	1,128	2,736	1,234	236	187
MAX	417	282	214	214	197	179	390	2,241	4,638	4,307	709	534
(WY)	(1973)	(1998)	(1976)	(1984)	(1985)	(1979)	(1962)	(1976)	(1997)	(1975)	(1968)	(1968)
MIN	74.9	108	71.8	54.7	55.2	92.9	66.7	429	894	193	21.9	27.7
(WY)	(2002)	(1988)	(1988)	(2001)	(2001)	(2002)	(1961)	(1953)	(1987)	(1988)	(1961)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1948 - 2004*	
ANNUAL TOTAL	156,765		120,544			
ANNUAL MEAN	429		329		559	
HIGHEST ANNUAL MEAN					905	1975
LOWEST ANNUAL MEAN					310	2001
HIGHEST DAILY MEAN	5,370	May 30	2,900	Jun 10	8,540	Jul 5, 1975
LOWEST DAILY MEAN	55	Feb 24	60	Jan 5	12	Aug 26, 1961
ANNUAL SEVEN-DAY MINIMUM	61	Sep 4	65	Sep 8	13	Aug 25, 1961
MAXIMUM PEAK FLOW			3,230	Jun 10	a9,940	Jun 5, 1997
MAXIMUM PEAK STAGE			5.25	Jun 10	9.00	Jun 5, 1997
INSTANTANEOUS LOW FLOW					10	Aug 26, 1961
ANNUAL RUNOFF (AC-FT)	310,900		239,100		404,900	
10 PERCENT EXCEEDS	1,410		996		1,710	
50 PERCENT EXCEEDS	119		120		180	
90 PERCENT EXCEEDS	74		78		100	

*--During periods of operation (April 1947 to December 1953, March 1955 to current year).
a--From rating curve extended above 6,000 ft^3/s.
e--Estimated.

06200000 BOULDER RIVER AT BIG TIMBER, MT—Continued



06204050 WEST ROSEBUD CREEK NEAR ROSCOE, MT

LOCATION.--Lat 45°14'35", long 109°43'50" (NAD 27), in NE$^1/_4$ sec.10, T.7 S., R.16 E., Stillwater County, Hydrologic Unit 10070005, on left bank at Mystic Lake powerplant, 2.0 mi downstream from Mystic Lake, 13.5 mi southwest of Roscoe, and at river mile 26.8.

DRAINAGE AREA.--52.1 mi^2.

PERIOD OF RECORD.--September 1965 to current year.

GAGE.--Water-stage recorder and rectangular weir. Elevation of gage is 6,535.60 ft (NGVD 29).

REMARKS.--Records good. Flow regulated by Mystic Lake (station number 06204000). Several observations of water temperature and specific conductance were made during the year. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--39 years, 121 ft^3/s, 31.50 in/yr, 87,660 acre-ft/yr, adjusted for change in contents in Mystic Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,630 ft^3/s, July 6, 1975, gage height, 4.71 ft; minimum daily, 2.5 ft^3/s, Apr. 3, 4, 6, 7, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 392 ft^3/s, July 9, gage height, 1.91 ft; minimum daily, 31 ft^3/s, Aug. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	85	79	74	64	72	58	60	68	192	203	111
2	78	85	78	74	57	72	58	60	68	223	202	103
3	79	84	77	75	42	72	58	60	68	224	200	101
4	80	85	79	74	58	72	58	61	71	224	198	99
5	79	84	78	73	57	72	58	61	71	229	195	99
6	80	84	77	72	57	72	58	62	72	247	192	99
7	79	83	78	72	57	72	59	63	72	293	189	99
8	78	84	78	72	57	72	59	63	71	357	186	99
9	79	85	77	72	60	64	59	62	70	339	183	99
10	83	84	78	72	69	57	58	62	83	321	155	99
11	82	83	78	72	72	57	58	62	88	336	31	99
12	81	85	77	73	72	57	58	61	77	315	41	99
13	82	84	78	76	72	57	58	60	73	291	48	99
14	82	83	78	74	71	57	58	59	71	300	60	100
15	82	83	78	77	71	57	58	60	71	298	72	99
16	81	83	77	75	71	57	58	59	70	345	84	99
17	82	84	76	77	71	57	58	59	70	323	136	99
18	83	83	79	76	72	57	58	60	70	308	202	99
19	80	88	78	75	72	57	58	60	68	306	196	99
20	83	80	78	76	73	58	58	60	68	281	190	101
21	81	80	78	77	73	57	59	61	68	236	182	99
22	82	80	78	75	73	58	60	61	68	274	178	116
23	83	80	78	75	72	58	60	61	69	261	176	124
24	82	78	78	76	72	58	60	60	71	233	174	124
25	83	78	78	76	72	58	60	60	73	222	175	124
26	80	80	79	76	72	58	59	60	72	217	175	124
27	83	80	79	75	72	58	59	60	73	214	176	124
28	84	78	78	74	72	58	60	62	72	213	178	124
29	86	77	78	75	72	58	60	67	73	210	176	124
30	84	79	78	76	---	58	60	68	107	208	147	124
31	84	---	88	76	---	58	---	68	---	206	132	---
TOTAL	2,530	2,469	2,426	2,312	1,945	1,905	1,760	1,902	2,186	8,246	4,832	3,208
MEAN	81.6	82.3	78.3	74.6	67.1	61.5	58.7	61.4	72.9	266	156	107
MAX	86	88	88	77	73	72	60	68	107	357	203	124
MIN	78	77	76	72	42	57	58	59	68	192	31	99
AC-FT	5,020	4,900	4,810	4,590	3,860	3,780	3,490	3,770	4,340	16,360	9,580	6,360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2004, BY WATER YEAR (WY)

MEAN	93.9	83.0	74.4	67.1	60.6	55.2	42.9	73.6	216	363	195	122
MAX	167	178	118	148	92.0	124	108	134	558	712	277	183
(WY)	(1977)	(1986)	(1980)	(1980)	(1979)	(1979)	(1979)	(1969)	(1974)	(1975)	(1997)	(1971)
MIN	33.4	31.2	28.4	25.7	28.9	21.7	3.57	16.2	72.9	158	103	38.5
(WY)	(1989)	(1975)	(1979)	(1979)	(1985)	(1987)	(1967)	(1978)	(2004)	(1985)	(1988)	(1988)

ADJUSTED FOR CHANGE IN CONTENTS IN MYSTIC LAKE

MEAN	45.3	44.1	30.6	28.5	24.3	24.9	40	107	305	328	177	127
CFSM	0.87	0.85	0.59	0.55	0.47	0.48	0.77	2.05	5.85	6.30	3.40	2.44
IN	1.00	0.95	0.68	0.63	0.50	0.55	0.86	2.37	6.54	7.25	3.91	2.72
AC-FT	2,780	2,630	1,880	1,750	1,400	1,530	2,380	6,590	18,160	20,140	10,880	7,560

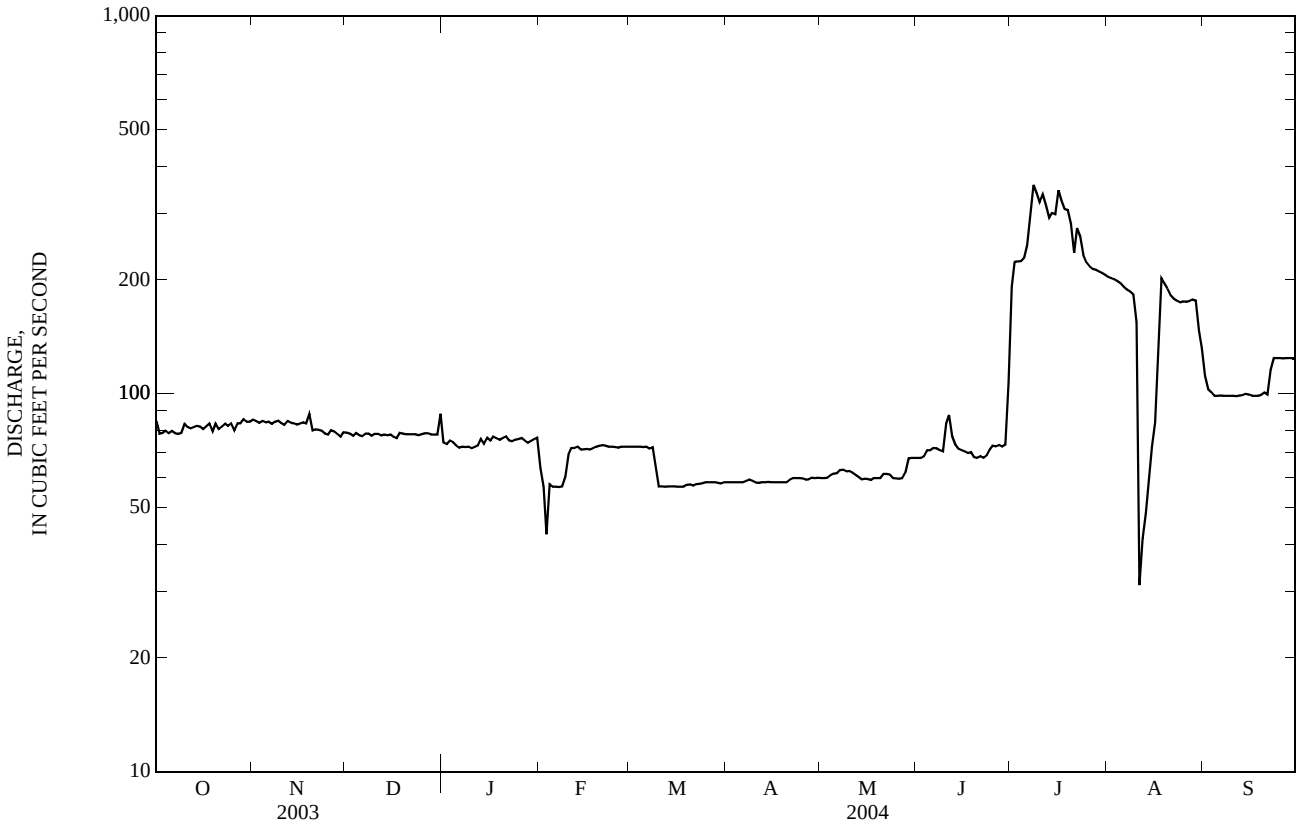
OBSERVED

CALENDAR YEAR 2003	TOTAL	41,350	MEAN	113	MAX	439	MIN	20	AC-FT	82,010
WATER YEAR 2004	TOTAL	35,720	MEAN	97.6	MAX	357	MIN	31	AC-FT	70,850

ADJUSTED

CALENDAR YEAR 2003	TOTAL	41,410	MEAN	113	CFSM	2.17	IN	29.09	AC-FT	80,830
WATER YEAR 2004	TOTAL	39,160	MEAN	107	CFSM	2.05	IN	26.15	AC-FT	72,680

06204050 WEST ROSEBUD CREEK NEAR ROSCOE, MT—Continued



06205000 STILLWATER RIVER NEAR ABSAROKEE, MT

LOCATION.--Lat 45°33'04", long 109°23'12" (NAD 27), in NE¼NE¼NW¼ sec.28, T.3 S., R.19 E., Stillwater County, Hydrologic Unit 10070005, on right bank 3 mi downstream from Rosebud Creek, 3.5 mi northeast of Absarokee, 9 mi southwest of Columbus, and at river mile 9.4.

DRAINAGE AREA.--975 mi^2.

PERIOD OF RECORD.--July 1910 to September 1914 (no winter records), March 1935 to September 1995, October 1995 to September 2000 (seasonal records only), October 2000 to current year.

REVISED RECORDS.--WSP 1309: 1911(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,873.8 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1914, nonrecording gage, and Mar. 26, 1935, to Sept. 30, 1942, nonrecording gage, at bridge 2 mi upstream at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow partly regulated by Mystic Lake (station number 06204000). Diversions for irrigation of about 24,300 acres, of which 400 acres lies downstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	338	344	337	283	219	283	324	464	539	2,400	866	515
2	335	389	330	e270	229	270	370	476	550	2,460	819	483
3	328	406	326	e200	235	269	373	547	655	2,420	809	500
4	314	394	316	e150	218	266	361	678	965	2,280	792	502
5	305	352	274	e140	241	269	377	919	1,610	2,840	755	482
6	311	372	350	e150	224	252	411	1,170	2,360	2,500	716	462
7	314	374	332	e210	228	254	452	1,310	2,840	2,340	681	452
8	313	374	326	e300	233	321	477	1,340	2,450	2,610	652	448
9	311	393	292	341	223	353	558	1,300	2,210	2,460	623	432
10	399	396	259	348	e210	366	497	1,150	3,760	2,200	600	418
11	409	391	283	327	e200	309	468	1,090	3,750	2,190	515	406
12	380	373	250	309	e180	303	448	996	2,600	2,140	407	392
13	375	366	301	309	e240	316	445	842	2,040	1,990	377	430
14	370	380	356	296	240	293	486	717	1,750	1,960	357	456
15	380	372	304	296	237	284	509	613	1,660	1,980	353	462
16	387	361	257	281	239	295	483	522	1,660	1,980	353	465
17	381	357	295	270	245	314	441	509	1,540	1,860	374	463
18	374	346	281	264	290	323	452	472	1,470	1,750	487	445
19	375	374	292	272	324	333	457	e570	1,400	1,850	523	472
20	365	370	330	261	289	326	432	e550	1,440	1,920	515	530
21	360	e320	302	246	285	302	409	e530	1,440	1,730	521	555
22	357	e290	283	248	289	295	395	601	1,450	1,660	525	530
23	360	e250	267	262	293	304	379	661	1,610	1,600	523	539
24	348	e260	295	263	298	316	367	622	2,060	1,410	543	539
25	346	286	291	248	296	339	372	542	2,580	1,270	563	537
26	345	287	295	e200	280	340	364	492	2,660	1,190	652	540
27	351	315	275	e190	280	316	380	471	2,570	1,140	712	539
28	359	306	230	e170	296	301	468	547	2,360	1,100	664	535
29	404	370	218	e240	284	293	532	814	2,280	1,040	621	530
30	443	372	242	317	---	289	484	725	2,410	985	579	526
31	369	---	242	266	---	299	---	611	---	921	529	---
TOTAL	11,106	10,540	9,031	7,927	7,345	9,393	12,971	22,851	58,669	58,176	18,006	14,585
MEAN	358	351	291	256	253	303	432	737	1,956	1,877	581	486
MAX	443	406	356	348	324	366	558	1,340	3,760	2,840	866	555
MIN	305	250	218	140	180	252	324	464	539	921	353	392
AC-FT	22,030	20,910	17,910	15,720	14,570	18,630	25,730	45,320	116,400	115,400	35,710	28,930

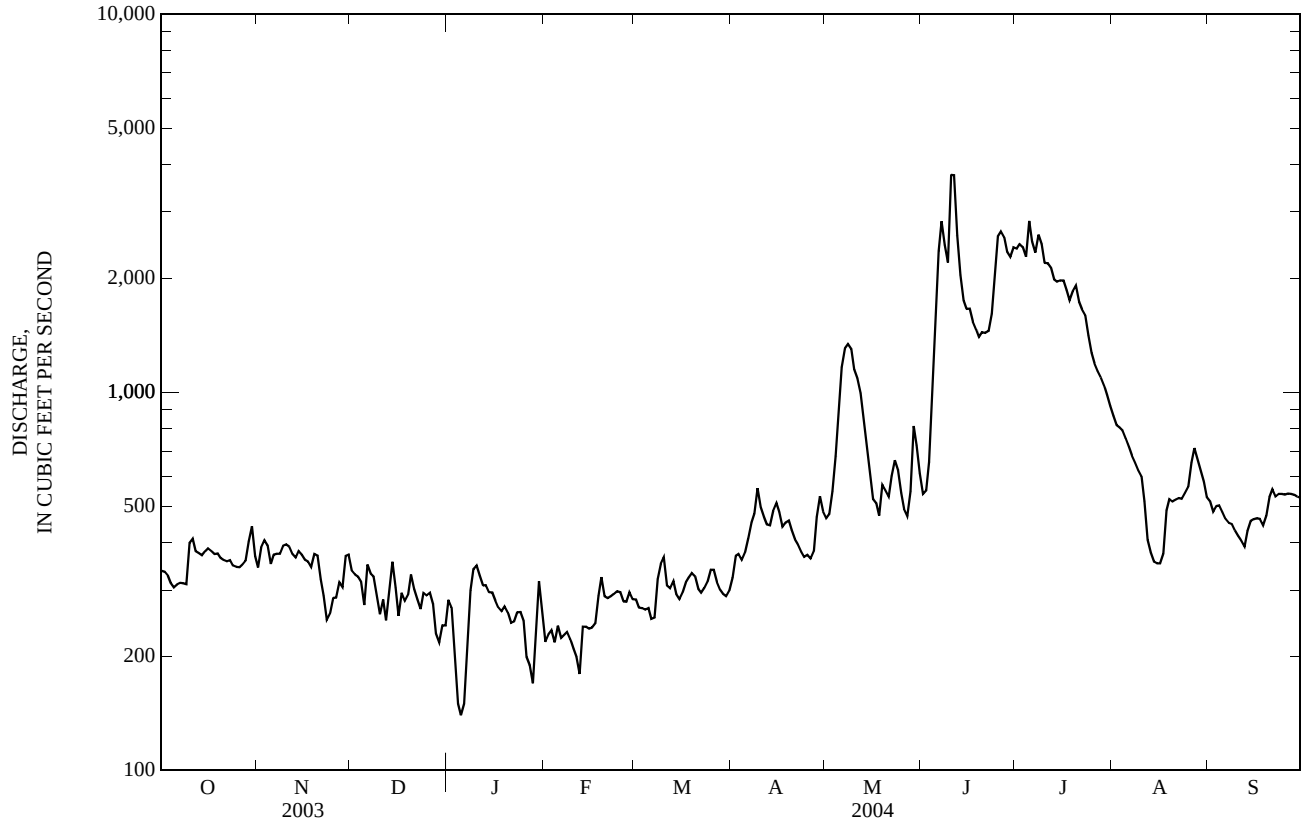
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2004, BY WATER YEAR (WY)*

MEAN	510	401	317	276	264	286	410	1,492	3,437	2,322	866	604
MAX	852	574	430	413	449	565	1,185	2,879	5,776	6,368	1,639	1,099
(WY)	(1942)	(1984)	(1962)	(1942)	(1972)	(1979)	(1943)	(1976)	(1957)	(1975)	(1997)	(1941)
MIN	270	227	184	116	103	162	144	661	1,565	626	280	275
(WY)	(1937)	(1936)	(1937)	(1937)	(1936)	(1936)	(1961)	(1960)	(1939)	(1936)	(1988)	(1939)

06205000 STILLWATER RIVER NEAR ABSAROKEE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004*	
ANNUAL TOTAL	290,414		240,600			
ANNUAL MEAN	796		657		932	
HIGHEST ANNUAL MEAN					1,468	1975
LOWEST ANNUAL MEAN					507	1936
HIGHEST DAILY MEAN	6,260	May 30	3,760	Jun 10	10,900	Jun 18, 1974
LOWEST DAILY MEAN	163	Feb 24	140	Jan 5	58	Apr 2, 1936
ANNUAL SEVEN-DAY MINIMUM	216	Jan 10	200	Jan 1	72	Mar 29, 1936
MAXIMUM PEAK FLOW			4,540	Jun 10	12,000	Jun 15, 1967
MAXIMUM PEAK STAGE			4.54	Jun 10	7.17	Jun 15, 1967
INSTANTANEOUS LOW FLOW					a58	Apr 2, 1936
ANNUAL RUNOFF (AC-FT)	576,000		477,200		674,900	
10 PERCENT EXCEEDS	2,220		1,740		2,510	
50 PERCENT EXCEEDS	372		380		444	
90 PERCENT EXCEEDS	248		253		230	

*--During period of operation (1911-12, 1936 to current year. Seasonal records from 1996-2000).
a--Observed.
e--Estimated.



06205450 CLARKS FORK YELLOWSTONE RIVER AT MONTANA-WYOMING STATE LINE, NEAR COOKE CITY, MT

LOCATION.--Lat 44°57'28", long 109°48'21", Park County, WY, Hydrologic Unit 10070006, Shoshone National Forest, at bridge on U.S. Highway 212, 300 ft upstream from Pilot Creek, 0.9 mi downstream from Rock Creek, 1.8 mi northwest of Crazy Creek Campground, and 7.5 mi southeast of Cooke City, MT.

PERIOD OF RECORD.--August 1975 to October 1977, November 1990 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
29...	1045	59	578	9.8	96	8.1	111	2.0	3.0	45	13.5	2.72	.64
JAN													
29...	0850	10	588	10.3	93	7.8	119	-2.0	0.5	58	18.6	2.82	.45
MAY													
12...	0910	286	592	11.3	104	8.5	42	0.0	1.5	20	6.13	1.13	.27
AUG													
18...	0845	52	611	8.3	97	--	70	10.5	12.0	34	10.7	1.75	.41

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT													
29...	.2	3.72	50	.75	<.2	5.7	7.2	65	.09	10.3	<.04	.15	<.008
JAN													
29...	.1	1.46	56	.35	<.2	5.4	5.8	69	.09	1.86	<.04	.09	E.004
MAY													
12...	.1	.85	19	.37	<.2	4.1	3.6	28	.04	21.7	<.04	E.04	<.008
AUG													
18...	.1	1.06	33	E.19	<.2	3.3	4.7	--	--	--	<.04	<.06	<.008

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)
OCT													
29...	.02	6	<.20	.5	16	<.06	7.2	<.04	<.8	.066	1.5	16	<.08
JAN													
29...	<.02	3	<.20	E.2	18	<.06	E6.5	E.02	<.8	.055	.7	E4	<.08
MAY													
12...	<.02	22	<.20	E.2	10	<.06	<7.0	.14	<.8	.034	2.6	18	<.08
AUG													
18...	<.02	5	<.20	E.2	14	<.06	E4.0	<.04	<.8	.031	.9	6	<.08

Date	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	Uranium natural water, fltrd, ug/L (22703)
OCT											
29...	<3	4.0	E.02	E.3	.45	<.4	<.2	60.1	E3	1.5	.13
JAN											
29...	<3	.8	<.02	E.2	.25	<.4	<.2	49.8	<5	.6	.13
MAY											
12...	<3	1.9	E.01	<.4	.28	<.4	<.2	24.4	<5	1.0	.07
AUG											
18...	<3	1.0	E.01	<.4	.14	<.4	<.2	38.1	<5	1.0	.07

E--Estimated.

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT

LOCATION.--Lat 45°00'37", long 109°03'53" (NAD 27), in NW¼SW¼NW¼ sec.32, T.9 S., R.22 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.2 mi upstream from county road bridge and Big Sand Coulee, 0.8 mi north of Wyoming-Montana State line, 9.5 mi southwest of Belfry, and at river mile 71.2.

DRAINAGE AREA.--1,154 mi^2.

PERIOD OF RECORD.--July 1921 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Clarks Fork at Chance prior to October 1956 and as Clarks Fork Yellowstone River at Chance October 1956 to September 1968.

REVISED RECORDS.--WSP 1309: 1922 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,986.24 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Nov. 15, 1934, nonrecording gage, and Nov. 15, 1934, to July 26, 1951, water-stage recorder at bridge 0.4 mi downstream from different elevation. July 27, 1951 to Sept. 30, 1953, water-stage recorder at present site at elevation 0.98 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 11,100 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	249	315	e210	e190	205	437	477	904	3,150	508	397
2	100	278	304	e200	e200	198	495	530	917	3,100	470	363
3	98	288	297	e190	e210	196	440	760	1,130	2,820	457	395
4	96	300	299	e170	e230	193	388	1,080	1,710	2,640	436	446
5	95	265	252	e160	231	193	454	1,630	2,540	2,750	433	388
6	95	253	299	e170	232	188	565	2,110	3,540	2,490	425	343
7	95	260	296	e210	222	184	633	2,410	4,720	2,270	379	311
8	94	260	286	269	226	200	690	2,530	4,740	2,230	342	286
9	94	281	275	250	223	214	674	2,340	4,330	2,080	310	262
10	111	319	e220	271	211	221	608	1,950	5,640	1,920	281	233
11	126	305	e220	261	e200	221	553	1,830	5,370	1,860	257	229
12	109	288	e220	259	e180	224	539	1,600	3,900	1,820	239	216
13	112	285	e260	250	e190	238	595	1,290	3,010	1,740	221	218
14	122	297	316	253	e200	241	669	1,040	2,480	1,620	205	275
15	123	302	288	253	208	229	643	889	2,290	1,600	190	360
16	122	296	236	247	212	224	592	785	2,220	1,550	176	313
17	120	290	256	245	217	219	512	749	1,930	1,480	174	387
18	125	282	270	236	246	225	491	715	1,690	1,380	192	399
19	133	290	256	233	230	240	438	852	1,560	1,380	198	398
20	129	327	307	236	214	285	386	847	1,560	1,370	220	500
21	126	315	305	229	204	280	344	839	1,600	1,320	238	608
22	125	e260	283	209	198	297	322	918	1,710	1,260	229	563
23	124	e220	252	225	205	346	297	1,010	2,020	1,330	230	519
24	120	e240	244	230	212	426	277	982	2,510	1,130	282	511
25	131	e250	291	223	217	458	281	872	2,990	950	269	539
26	140	e260	284	218	208	415	261	776	3,320	822	1,080	501
27	145	e270	274	e180	205	351	336	734	3,360	790	910	485
28	163	e280	e220	e170	213	306	538	895	3,120	757	724	470
29	194	320	e200	e180	215	278	597	1,180	2,990	672	622	442
30	382	347	e200	e190	---	276	517	1,150	3,150	619	538	424
31	278	---	e200	e200	---	341	---	1,000	---	561	468	---
TOTAL	4,123	8,477	8,225	6,827	6,149	8,112	14,572	36,770	82,951	51,461	11,703	11,781
MEAN	133	283	265	220	212	262	486	1,186	2,765	1,660	378	393
MAX	382	347	316	271	246	458	690	2,530	5,640	3,150	1,080	608
MIN	94	220	200	160	180	184	261	477	904	561	174	216
AC-FT	8,180	16,810	16,310	13,540	12,200	16,090	28,900	72,930	164,500	102,100	23,210	23,370

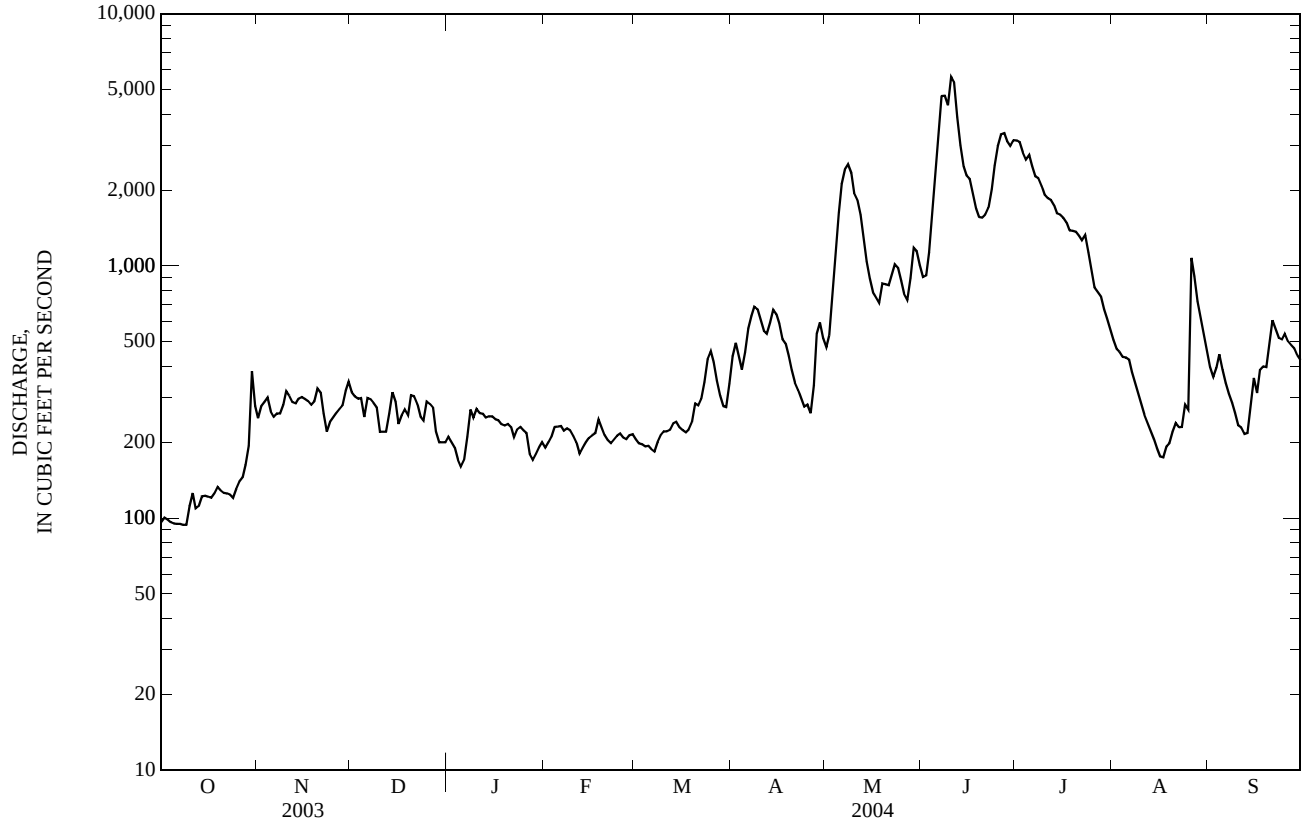
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY)

MEAN	276	294	262	231	222	222	427	2,037	4,092	2,182	609	313
MAX	725	648	379	359	329	364	1,167	5,704	7,225	5,744	1,453	834
(WY)	(1931)	(1928)	(1951)	(1997)	(1963)	(1972)	(1943)	(1928)	(1997)	(1975)	(1951)	(1941)
MIN	45.5	115	110	110	100	96.3	110	839	1,607	349	66.5	50.1
(WY)	(1989)	(1989)	(1922)	(1922)	(1922)	(1922)	(1961)	(1968)	(1987)	(1988)	(1988)	(1988)

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1921 - 2004	
ANNUAL TOTAL	326,249		251,151			
ANNUAL MEAN	894		686		932	
HIGHEST ANNUAL MEAN					1,485	1997
LOWEST ANNUAL MEAN					547	1977
HIGHEST DAILY MEAN	10,000	Jun 1	5,640	Jun 10	12,300	Jun 9, 1981
LOWEST DAILY MEAN	86	Sep 29	94	Oct 8	33	Apr 26, 1961
ANNUAL SEVEN-DAY MINIMUM	93	Sep 24	95	Oct 3	37	Oct 8, 1988
MAXIMUM PEAK FLOW			6,300	Jun 11	14,800	Jun 9, 1981
MAXIMUM PEAK STAGE			6.26	Jun 11	9.97	Jun 9, 1981
INSTANTANEOUS LOW FLOW			88	Oct 1	a32	Apr 26, 1961
ANNUAL RUNOFF (AC-FT)	647,100		498,200		675,300	
10 PERCENT EXCEEDS	2,690		1,880		2,870	
50 PERCENT EXCEEDS	274		296		300	
90 PERCENT EXCEEDS	120		180		170	

a--Result of discharge measurement.
e--Estimated.



06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT

LOCATION.--Lat 45°27'58", long 108°50'35" (NAD 27), in SE¼SE¼SE¼ sec.23, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 22.1.

DRAINAGE AREA.--2,022 mi^2.

PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to current year.

REVISED RECORDS.--WSP 1509: 1924, 1932(M). WSP 1729: Drainage area. WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft (NGVD 29). Prior to Aug. 31, 1953, nonrecording gage at same site and elevation.

REMARKS.--Records good except those for the estimated daily discharges, which are poor. Diversions for irrigation of about 41,500 acres, of which about 840 acres lies downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek basin. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year. **Discharge values given herein have the diversion of White Horse Canal subtracted.**

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	619	556	e310	e340	322	425	192	940	3,040	486	463
2	289	577	514	e290	e340	310	536	146	769	3,080	456	408
3	289	589	493	e270	e340	302	586	170	793	2,880	430	437
4	283	597	488	e250	e340	301	504	377	1,120	2,650	792	605
5	276	633	480	e240	e330	298	477	864	1,860	3,050	569	660
6	268	624	e420	e260	e340	297	547	1,440	2,710	2,680	539	572
7	263	613	e480	e310	e340	287	664	1,820	3,700	2,340	540	485
8	273	598	473	e350	e350	283	725	2,010	4,200	2,220	482	418
9	278	567	456	e340	e340	299	783	1,960	3,920	2,120	427	370
10	306	586	437	e340	e340	317	746	1,680	4,520	1,950	353	342
11	375	614	e380	e340	e310	320	651	1,490	6,360	1,800	311	339
12	404	589	e370	e340	e300	313	636	1,500	4,440	1,670	269	342
13	400	565	e420	e340	e320	320	612	1,300	3,420	1,540	225	362
14	417	557	454	e350	e330	328	659	1,080	2,790	1,430	191	377
15	458	561	472	e350	e400	329	736	831	2,500	1,310	156	456
16	462	558	e420	e350	e500	321	713	631	2,360	1,260	133	567
17	462	552	e370	e350	e600	315	642	560	2,230	1,200	127	556
18	456	539	e370	e340	e700	308	569	502	1,980	1,110	128	658
19	456	533	e380	e350	489	316	568	468	1,820	1,020	148	673
20	459	549	e390	e350	371	334	487	598	1,750	1,060	153	720
21	457	e540	e450	e350	346	382	374	569	1,770	1,040	148	861
22	436	e470	445	e350	320	369	308	939	1,720	1,040	183	909
23	438	e400	e410	e350	311	385	241	1,010	1,900	1,140	205	865
24	430	e520	e380	e360	318	440	162	1,030	2,390	1,050	220	813
25	435	539	e380	e330	325	526	100	923	2,760	914	243	806
26	450	551	e430	e300	324	552	76	796	3,120	805	420	791
27	445	553	e410	e280	320	495	49	677	3,220	702	1,180	764
28	482	563	e400	e280	323	425	43	656	3,110	680	951	769
29	539	538	e330	e300	338	385	246	931	2,900	662	814	738
30	619	569	e320	e330	---	350	298	1,200	2,840	594	699	707
31	727	---	e330	e350	---	355	---	1,080	---	550	553	---
TOTAL	12,598	16,863	13,108	10,000	10,645	10,884	14,163	29,430	79,912	48,587	12,531	17,833
MEAN	406	562	423	323	367	351	472	949	2,664	1,567	404	594
MAX	727	633	556	360	700	552	783	2,010	6,360	3,080	1,180	909
MIN	263	400	320	240	300	283	43	146	769	550	127	339
AC-FT	24,990	33,450	26,000	19,840	21,110	21,590	28,090	58,370	158,500	96,370	24,860	35,370

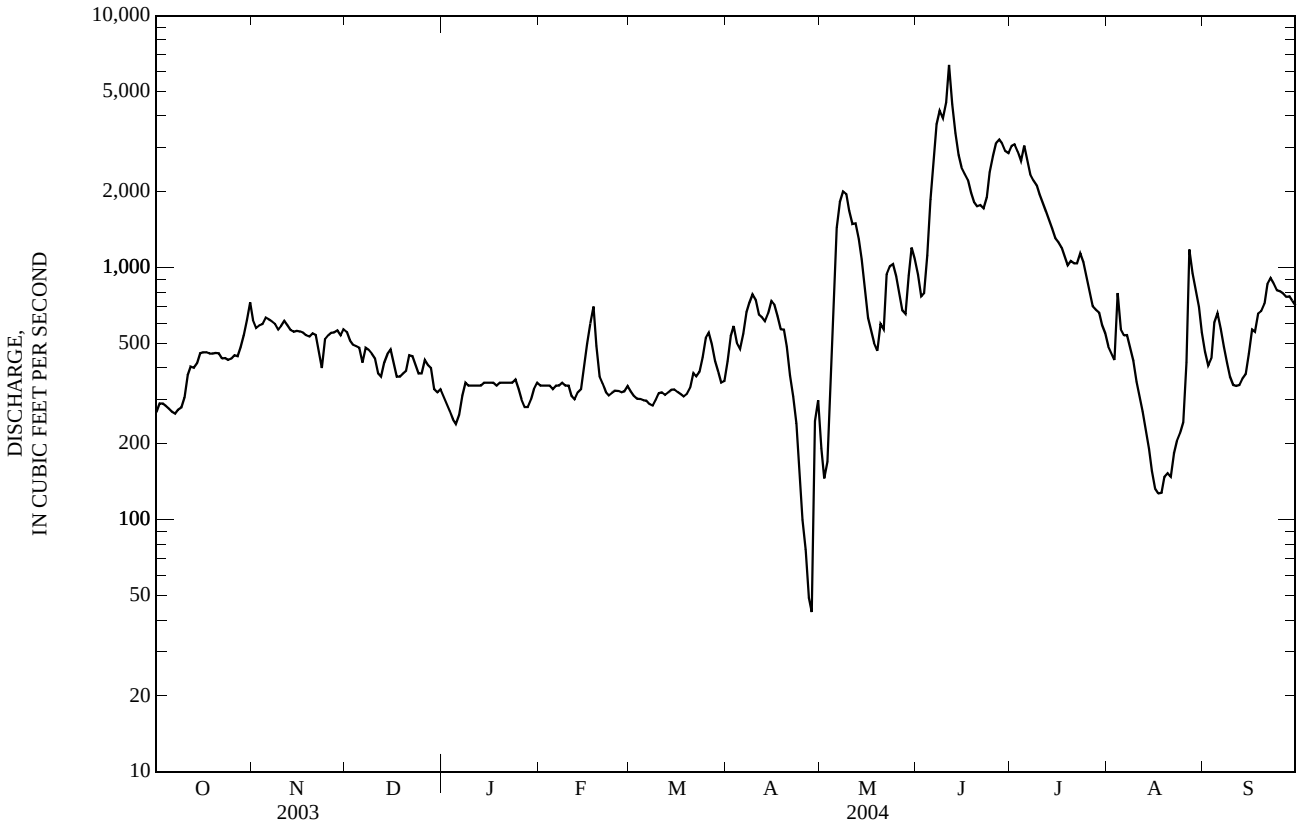
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY)*

MEAN	530	501	409	351	350	365	558	2,092	4,053	2,017	608	476
MAX	1,010	777	593	512	584	554	1,398	5,578	7,256	4,771	1,541	1,395
(WY)	(1942)	(1928)	(1996)	(1997)	(1963)	(1943)	(1943)	(1928)	(1996)	(1943)	(1951)	(1941)
MIN	298	310	217	200	180	220	123	757	1,768	290	49.5	156
(WY)	(1956)	(1936)	(1937)	(1922)	(1922)	(1924)	(1961)	(1968)	(1987)	(1988)	(1988)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1921 - 2004*	
ANNUAL TOTAL	352,592		279,426			
ANNUAL MEAN	966		763		1,027	
HIGHEST ANNUAL MEAN					1,623	1997
LOWEST ANNUAL MEAN					644	2001
HIGHEST DAILY MEAN	8,760	Jun 1	6,390	Jun 11	10,600	Jun 2, 1936
LOWEST DAILY MEAN	116	Aug 28	43	Apr 28	37	May 11, 1961
ANNUAL SEVEN-DAY MINIMUM	125	Aug 23	144	Apr 23	43	Apr 18, 1961
MAXIMUM PEAK FLOW			6,950	Jun 11	11,100	Jun 12, 1997
MAXIMUM PEAK STAGE			7.59	Jun 11	9.30	Jun 12, 1997
INSTANTANEOUS LOW FLOW					36	Apr 22, 1961
ANNUAL RUNOFF (AC-FT)	699,400		554,200		744,000	
10 PERCENT EXCEEDS	2,500		1,820		2,820	
50 PERCENT EXCEEDS	450		472		469	
90 PERCENT EXCEEDS	259		282		271	

*--During period of operation (water years 1921-69, 1987 to current year).
e--Estimated.

06208500 CLARKS FORK YELLOWSTONE RIVER AT EDGAR, MT—Continued



06209500 ROCK CREEK NEAR RED LODGE, MT

LOCATION.--Lat 45°05'11", long 109°19'46" (NAD 27), in NW¼NE¼SW¼ sec.36, T.8 S., R.19 E., Carbon County, Hydrologic Unit 10070006, on left bank 40 ft downstream from county bridge, 6.7 mi south of Red Lodge, and at river mile 49.1.

DRAINAGE AREA.--105 mi^2.

PERIOD OF RECORD.--April to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year. Monthly discharge only for May 1934, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area. WDR MT-00-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,400 ft (NGVD 29). Prior to October 1986, water-stage recorder at elevation 6,099.42 ft, levels by U.S. Army Corps of Engineers, at previous site 3.1 mi downstream. Streamflows are equivalent.

REMARKS.--Records fair except those for the estimated daily discharges, which are poor. Flow partly regulated by Glacier Lake. No diversions upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	e40	35	e30	e25	23	30	38	81	344	204	213
2	55	e40	34	e25	e20	25	31	39	91	361	206	217
3	54	e45	34	e25	e25	26	29	45	119	345	225	223
4	53	e40	35	e20	e25	23	31	57	161	346	219	216
5	52	e35	e30	e20	e25	28	33	77	221	347	206	203
6	52	e35	33	e20	e25	25	35	93	339	304	198	193
7	51	e40	33	e25	e30	e50	37	105	398	305	185	185
8	51	e45	33	e30	25	24	38	114	307	332	173	179
9	50	e50	e30	e40	23	25	39	113	317	290	165	173
10	57	e50	e30	e35	23	25	36	104	486	283	159	168
11	54	e50	e30	e30	e20	24	36	100	372	288	152	161
12	53	45	e30	27	e20	24	36	85	280	290	144	156
13	52	44	e30	25	e20	24	37	76	238	280	137	169
14	51	44	e35	25	23	24	39	71	218	284	133	169
15	50	42	e35	25	23	24	38	68	228	299	130	158
16	50	42	e35	25	23	24	37	67	213	291	129	156
17	52	41	e35	25	24	24	38	65	182	288	138	150
18	52	40	e35	25	24	25	37	69	164	275	157	146
19	51	40	e35	25	23	27	36	76	156	277	153	148
20	49	41	e30	24	23	25	36	74	166	274	153	157
21	49	e35	29	e25	e20	25	35	76	166	259	150	148
22	49	e30	e25	e20	e20	27	34	80	173	272	145	140
23	48	e30	e25	e20	e30	28	33	79	211	251	170	137
24	46	e35	e25	25	25	29	34	75	297	237	222	133
25	43	e35	29	25	23	29	33	72	345	233	235	129
26	47	e35	29	e20	23	28	33	70	324	236	248	125
27	46	e35	29	e20	23	27	36	72	326	234	243	122
28	46	e40	e25	e20	23	26	41	89	307	237	230	120
29	e45	e45	e25	24	23	26	39	102	327	228	218	116
30	e40	e40	e25	24	---	27	38	88	356	215	213	116
31	e40	---	e25	26	---	29	---	81	---	208	206	---
TOTAL	1,548	1,209	948	775	679	820	1,065	2,420	7,569	8,713	5,646	4,826
MEAN	49.9	40.3	30.6	25.0	23.4	26.5	35.5	78.1	252	281	182	161
MAX	60	50	35	40	30	50	41	114	486	361	248	223
MIN	40	30	25	20	20	23	29	38	81	208	129	116
AC-FT	3,070	2,400	1,880	1,540	1,350	1,630	2,110	4,800	15,010	17,280	11,200	9,570

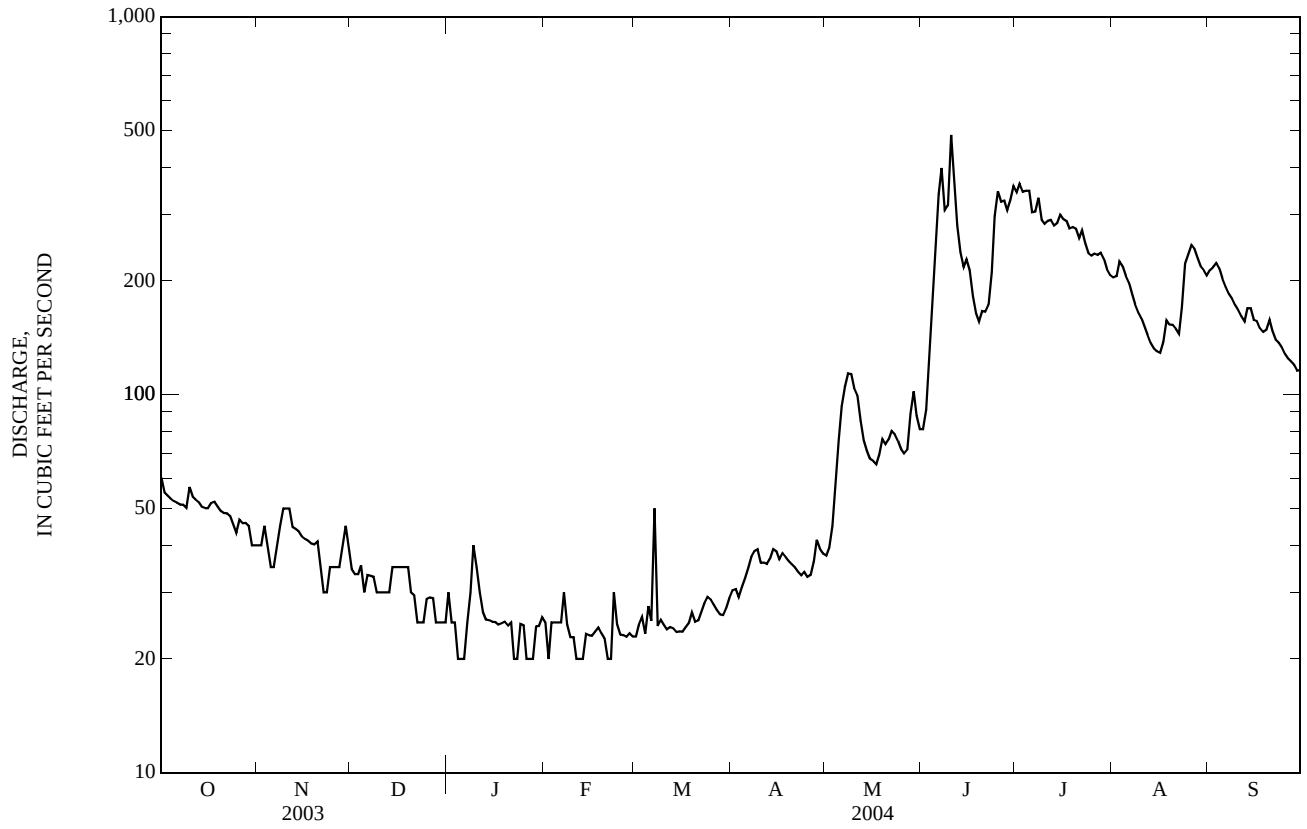
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2004, BY WATER YEAR (WY)*

MEAN	81.4	54.7	41.3	33.8	30.6	29.4	39.9	217	587	488	256	140
MAX	124	77.7	56.1	45.1	42.4	39.7	99.2	460	1,129	1,088	427	219
(WY)	(1968)	(1962)	(1962)	(1942)	(1953)	(1972)	(1943)	(1958)	(1957)	(1975)	(1951)	(1971)
MIN	49.9	36.9	26.6	20.6	19.6	19.6	24.4	78.1	252	220	153	88.6
(WY)	(2004)	(2003)	(1955)	(2002)	(2000)	(2002)	(1961)	(2004)	(2004)	(2001)	(2001)	(1960)

06209500 ROCK CREEK NEAR RED LODGE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1932 - 2004*	
ANNUAL TOTAL	48,173		36,218			
ANNUAL MEAN	132		99.0		170	
HIGHEST ANNUAL MEAN					251	1943
LOWEST ANNUAL MEAN					97.3	2001
HIGHEST DAILY MEAN	813	May 29	486	Jun 10	2,370	Jun 5, 1957
LOWEST DAILY MEAN	21	Feb 24	20	Jan 4	14	Nov 29, 1954
ANNUAL SEVEN-DAY MINIMUM	23	Feb 23	21	Jan 22	17	Jan 27, 2002
MAXIMUM PEAK FLOW			a532	Jun 10	c3,110	Jun 4, 1957
MAXIMUM PEAK STAGE			b7.76	Nov 6	b7.97	Dec 16, 2002
ANNUAL RUNOFF (AC-FT)	95,550		71,840		123,000	
10 PERCENT EXCEEDS	390		253		483	
50 PERCENT EXCEEDS	46		45		62	
90 PERCENT EXCEEDS	25		24		29	

*--During periods of operation (April 1932 to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year).
a--Gage height, 6.41 ft.
b--Backwater from ice.
c--Gage height, 4.78 ft, previous site and datum.
e--Estimated.



06211000 RED LODGE CREEK ABOVE COONEY RESERVOIR, NEAR BOYD, MT

LOCATION.--Lat 45°26'16", long 109°15'11" (NAD 27), in NE¼SE¼SE¼ sec.33, T.4 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on right bank 0.6 mi upstream from Cooney Reservoir, 9.5 mi west of Boyd, and at river mile 15.0.

DRAINAGE AREA.--143 mi^2.

PERIOD OF RECORD.--May 1937 to current year (no winter records most years).

REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1937(M), 1942(M), 1943(P), 1944(M), 1948(M), 1952(M), 1957(P), 1962(M), 1963(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,248.0 ft (NGVD 29).

REMARKS.--Seasonal records good. Some return flow from lands irrigated by water diverted from Rock Creek and East Rosebud Creek basins. Diversions for irrigation of about 5,100 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				25	21	8.9	73	36	37	68		
2				26	20	4.4	69	35	39	64		
3				26	19	4.9	74	37	46	61		
4				26	19	4.0	73	49	47	59		
5				24	13	5.8	204	37	47	58		
6				22	8.8	12	117	32	46	56		
7				21	6.6	14	97	29	46	52		
8				21	7.4	14	95	25	45	51		
9				34	4.8	19	92	27	44	48		
10				37	7.2	38	90	31	44	40		
11				31	10	106	88	32	43	41		
12				29	11	46	89	25	46	41		
13				27	14	35	89	22	49	45		
14				25	9.9	32	85	23	50	45		
15				24	9.0	35	74	17	50	59		
16				22	7.4	40	69	15	50	67		
17				21	8.6	45	68	14	49	e50		
18				21	10	52	61	15	48	e35		
19				23	13	51	58	22	46	e25		
20				22	8.8	52	57	27	52	22		
21				20	6.2	56	59	30	57	24		
22				19	7.0	54	62	31	58	26		
23				18	12	48	65	30	56	25		
24				17	15	49	62	17	56	31		
25				16	12	56	60	20	57	31		
26				15	12	63	55	32	54	28		
27				10	11	75	56	42	52	27		
28				12	9.9	71	53	42	53	29		
29				19	8.8	70	43	38	54	41		
30				22	11	70	40	42	53	40		
31				---	10	---	39	39	---	35		
TOTAL				675	343.4	1,231.0	2,316	913	1,474	1,324		
MEAN				22.5	11.1	41.0	74.7	29.5	49.1	42.7		
MAX				37	21	106	204	49	58	68		
MIN				10	4.8	4.0	39	14	37	22		
AC-FT				1,340	681	2,440	4,590	1,810	2,920	2,630		

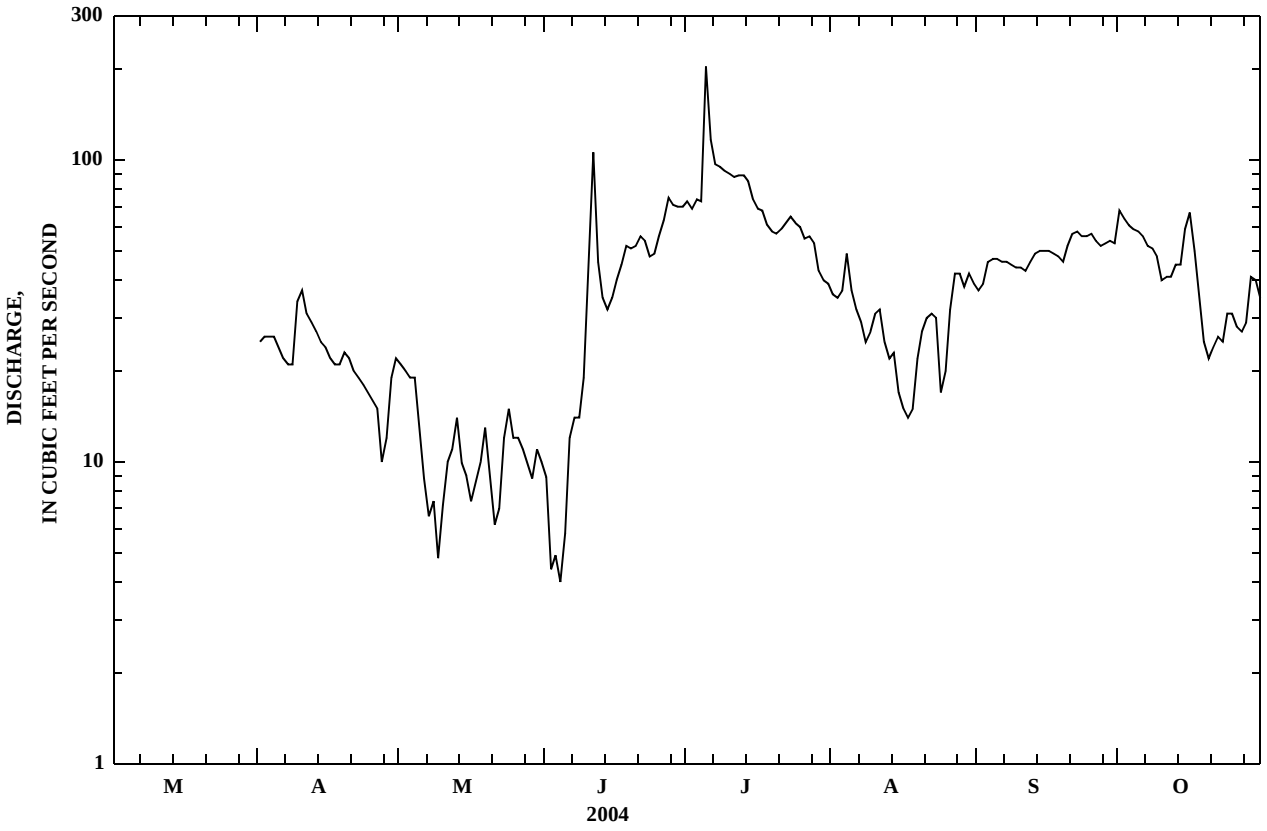
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1937 - 2004*

MEAN	15.4	27.4	36.5	75.3	154	188	89.4	38.0	46.3	46.3	33.3	19.3
MAX	18.8	35.0	62.9	234	616	575	297	90.2	106	119	69.5	33.6
(WY)	(1964)	(1962)	(1962)	(1973)	(1975)	(1967)	(1975)	(1993)	(1941)	(1942)	(1942)	(1958)
MIN	12.1	18.9	17.4	12.7	10.8	15.3	4.90	4.71	4.20	17.5	16.5	14.5
(WY)	(1963)	(1964)	(1964)	(1961)	(1985)	(1954)	(1949)	(1946)	(1949)	(1954)	(1955)	(1946)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1937 - 2004*	
ANNUAL MEAN			58.4	
HIGHEST ANNUAL MEAN			67.1	1963
LOWEST ANNUAL MEAN			49.8	1964
HIGHEST DAILY MEAN	204	Jul 5	2,000	Jun 15, 1967
LOWEST DAILY MEAN	4.0	Jun 4	0.00	Aug 1, 1949
MAXIMUM PEAK FLOW	294	Jul 5	b2,260	Jun 15, 1967
MAXIMUM PEAK STAGE	2.74	Jul 5	7.00	Jun 15, 1967
INSTANTANEOUS LOW FLOW	a2.5	Jun 4	0.00	Aug 1, 1949
ANNUAL RUNOFF (AC-FT)			42,340	
10 PERCENT EXCEEDS			170	
50 PERCENT EXCEEDS			30	
90 PERCENT EXCEEDS			15	

*--No winter records most years.
a--Gage height, 1.25 ft.
b--From rating curve extended above 1,700 ft^3/s on basis of contracted-opening measurement of peak flow.
e--Estimated.

06211000 RED LODGE CREEK ABOVE COONEY RESERVOIR, NEAR BOYD, MT—Continued



06211500 WILLOW CREEK NEAR BOYD, MT

LOCATION.--Lat 45°25'20", long 109°13'47" (NAD 27), in SW¼SW¼SW¼ sec.2, T.5 S., R.20 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.5 mi upstream from Cooney Reservoir, 8 mi west of Boyd, and at river mile 2.1.

DRAINAGE AREA.--53.3 mi^2.

PERIOD OF RECORD.--June 1937 to current year (no winter records except 1963-64).

REVISED RECORDS.--WSP 1729: Drainage area. WSP 2116: 1957, 1962. WDR MT-87-1: 1986.

GAGE.--Water-stage recorder. Elevation of gage is 4,260 ft (NGVD 29). Prior to Apr. 23, 1948, at site 0.5 mi downstream at different elevation.

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,800 acres upstream from station. Some return flow from lands irrigated by water diverted from Rock Creek basin. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were obtained during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				20	11	1.8	19	37	31	40		
2				20	10	1.8	20	36	31	37		
3				19	9.4	1.8	23	34	34	36		
4				19	10	1.9	25	48	41	33		
5				18	9.9	1.8	95	38	37	31		
6				16	9.4	1.5	58	37	33	30		
7				15	8.1	1.4	47	35	33	28		
8				14	e6.5	1.4	45	34	33	28		
9				19	e6.0	1.5	44	37	31	27		
10				20	e6.0	2.0	40	40	29	27		
11				18	e5.5	3.3	41	39	32	28		
12				16	e5.5	5.1	41	30	31	28		
13				14	e5.0	4.0	47	25	32	29		
14				13	e5.0	4.1	47	22	35	29		
15				12	e4.5	3.5	38	21	35	37		
16				11	e4.0	3.9	38	20	34	47		
17				11	e4.0	4.4	38	22	32	39		
18				10	e3.5	7.5	39	24	29	35		
19				11	e3.5	7.4	42	26	27	32		
20				11	e3.5	7.2	42	24	30	31		
21				11	e3.0	6.3	37	23	34	32		
22				10	e3.0	5.1	38	23	31	31		
23				10	e3.0	4.1	45	26	30	31		
24				9.0	e2.5	3.7	43	24	31	33		
25				8.9	e2.5	6.7	41	28	30	33		
26				8.2	2.4	16	38	36	29	30		
27				8.2	2.2	17	42	44	28	30		
28				8.7	2.2	17	41	39	28	30		
29				12	2.0	15	39	36	30	33		
30				12	2.0	14	40	35	29	34		
31				---	2.2	---	39	31	---	31		
TOTAL				405.0	157.3	172.2	1,272	974	950	1,000		
MEAN				13.5	5.07	5.74	41.0	31.4	31.7	32.3		
MAX				20	11	17	95	48	41	47		
MIN				8.2	2.0	1.4	19	20	27	27		
AC-FT				803	312	342	2,520	1,930	1,880	1,980		

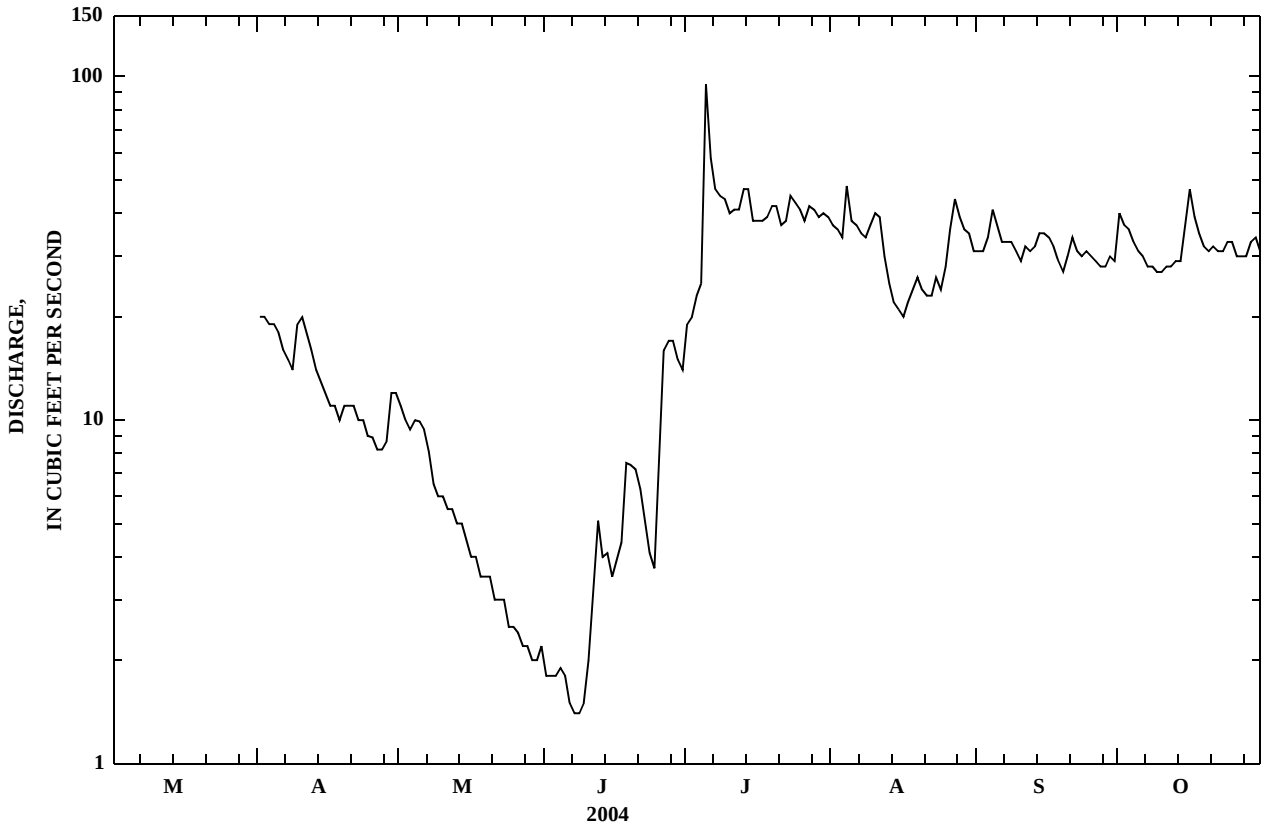
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1964, AND SEASONS 1938 - 1962, 1965 - 2004*

MEAN	8.00	12.1	15.3	33.4	47.2	54.9	55.6	40.0	37.1	30.3	22.0	17.0
MAX	8.27	17.2	22.5	88.2	215	170	123	75.1	64.3	50.0	31.6	26.6
(WY)	(1963)	(1962)	(1962)	(1973)	(1975)	(1967)	(1978)	(1972)	(1965)	(1972)	(1974)	(1958)
MIN	7.73	5.76	5.89	6.29	3.08	2.05	3.20	11.8	6.02	12.7	14.7	10.6
(WY)	(1964)	(1964)	(1964)	(1961)	(1969)	(1961)	(1960)	(1961)	(1960)	(1940)	(1963)	(1963)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1938 - 2004*	
HIGHEST DAILY MEAN	95	Jul 5	1,150	Jun 15, 1967
LOWEST DAILY MEAN	1.4	Jun 7	0.00	May 29, 1969
MAXIMUM PEAK FLOW	153	Jul 5	b1,720	Jun 15, 1967
MAXIMUM PEAK STAGE	3.70	Jul 5	c7.24	May 29, 1942
INSTANTANEOUS LOW FLOW	a1.3	Jun 8	0.00	May 29, 1969

*--Seasonal records except 1963 and 1964 water years.
a--Gage height, 1.33 ft.
b--Gage height, 7.08 ft, from rating curve extended above 400 ft^3/s on basis of slope-area measurement of peak flow.
c--Backwater from Cooney Reservoir, site and datum then in use.
e--Estimated.

06211500 WILLOW CREEK NEAR BOYD, MT—Continued



06214500 YELLOWSTONE RIVER AT BILLINGS, MT

LOCATION.--Lat 45°48'00", long 108°28'00" (NAD 27), in $SE\frac{1}{4}SE\frac{1}{4}SE\frac{1}{4}$ sec.27, T.1 N., R.26 E., Yellowstone County, Hydrologic Unit 10070007, on right bank 0.3 mi downstream from bridge on U.S. Highway 87, 1 mi northeast of Billings, 10 mi upstream from Pryor Creek, and at river mile 360.3.

DRAINAGE AREA.--11,805 mi^2.

PERIOD OF RECORD.--May 1904 to December 1905 (gage heights only January to March, December 1905), August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as "near Billings" 1904-5.

REVISED RECORDS.--WDR MT 1968: 1967 (M). WSP 1729: Drainage area. WDR-MT-2003-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,080 ft (NGVD 29). May 1904 to December 1905, nonrecording gage at bridge 0.3 ft upstream at different elevation. Aug. 24, 1928, to June 30, 1932, nonrecording gage at bridge 0.3 mi upstream at elevation 2.0 ft higher. July 1, 1932, to Oct. 12, 1937, water-stage recorder at old diversion dam 3.3 mi upstream at different elevation. Oct. 13, 1937, to Jan. 9, 1963 and Dec. 2, 1967 to Sept. 12, 1990, water-stage recorder 0.3 mi upstream at elevation 3,081.36 ft. Jan. 10, 1963 to Dec. 2, 1967, water-stage recorder 2.1 mi upstream at elevation 3,069.9 ft.

REMARKS.--Records good except those for estimated daily discharges and discharges below 2,000 ft^3/s, which are poor. Diversions for irrigation of about 350,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,380	3,250	2,590	1,610	2,380	1,990	2,170	3,410	8,040	14,600	3,910	2,510
2	2,380	2,910	2,530	2,000	1,850	1,870	2,500	2,870	7,160	14,100	3,690	2,340
3	2,370	3,050	2,520	1,700	1,700	1,820	2,980	2,820	6,940	13,600	3,450	2,460
4	2,370	3,170	2,500	e1,700	1,680	1,780	3,200	3,710	7,590	12,700	3,760	2,770
5	2,360	2,820	2,410	e1,600	1,900	1,750	3,130	5,520	10,000	13,800	3,730	2,960
6	2,310	2,630	2,400	e1,500	2,000	1,780	3,230	7,830	13,900	14,500	3,400	2,850
7	2,300	2,550	2,490	e1,500	1,990	1,680	3,710	9,850	18,100	12,900	3,250	2,640
8	2,310	2,530	2,480	e1,700	1,990	1,710	4,210	10,700	19,500	12,300	2,970	2,510
9	2,330	2,540	2,470	1,640	1,910	1,840	4,640	10,800	18,000	12,100	2,790	2,420
10	2,450	2,650	2,390	2,130	1,900	2,060	5,040	10,200	19,400	11,000	2,540	2,270
11	2,530	2,880	2,270	2,470	1,780	2,090	4,600	9,100	25,700	10,100	2,260	2,230
12	2,570	2,790	2,130	2,540	1,530	2,060	4,030	8,950	22,800	9,700	2,020	2,170
13	2,600	2,680	2,200	2,430	e1,500	2,040	3,680	8,250	19,600	9,000	1,800	2,280
14	2,660	2,660	2,430	2,380	1,650	2,010	3,640	7,010	16,800	8,420	1,690	2,450
15	2,890	2,630	2,500	2,390	1,820	1,990	4,010	5,960	14,900	7,910	1,590	2,510
16	2,870	2,620	2,330	2,370	1,910	1,940	4,490	5,140	14,100	7,670	1,510	3,000
17	2,800	2,630	2,290	2,320	2,010	1,950	4,300	4,710	13,400	7,310	1,450	3,220
18	2,750	2,600	2,130	2,250	2,120	1,980	3,840	4,670	12,500	6,890	1,530	3,130
19	2,710	2,580	2,160	e2,200	2,470	2,010	3,730	4,560	11,800	6,570	1,700	3,410
20	2,690	2,610	2,240	2,220	2,510	2,050	3,570	5,260	11,400	6,800	1,970	3,600
21	2,670	2,610	2,330	2,150	2,310	2,140	3,270	5,550	11,400	7,340	1,940	3,790
22	2,660	2,540	2,340	2,100	2,210	2,200	2,900	5,950	10,900	6,780	2,000	4,330
23	2,640	e2,300	2,240	2,030	2,090	2,150	2,690	6,930	11,000	6,590	2,080	4,280
24	2,620	e2,000	2,140	2,130	2,050	2,190	2,430	8,000	12,100	6,470	2,100	4,030
25	2,610	e2,120	2,160	2,000	2,050	2,360	2,220	7,730	13,900	5,930	2,260	3,970
26	2,630	2,190	2,260	1,560	2,120	2,580	2,100	6,790	15,200	5,400	2,610	4,070
27	2,620	2,420	2,350	e1,500	2,060	2,740	2,060	6,230	15,400	4,960	3,540	4,070
28	2,620	2,420	1,910	e1,500	2,040	2,610	1,990	6,080	14,900	4,920	4,560	3,900
29	2,930	2,530	2,000	e1,700	2,190	2,460	2,850	7,070	14,000	4,630	3,960	3,850
30	3,230	2,610	2,190	e2,000	---	2,310	4,230	9,410	13,700	4,390	3,430	3,770
31	3,570	---	1,530	e2,600	---	2,200	---	9,140	---	4,120	2,930	---
TOTAL	81,430	78,520	70,910	61,920	57,720	64,340	101,440	210,200	424,130	273,500	82,420	93,790
MEAN	2,627	2,617	2,287	1,997	1,990	2,075	3,381	6,781	14,140	8,823	2,659	3,126
MAX	3,570	3,250	2,590	2,600	2,510	2,740	5,040	10,800	25,700	14,600	4,560	4,330
MIN	2,300	2,000	1,530	1,500	1,500	1,680	1,990	2,820	6,940	4,120	1,450	2,170
AC-FT	161,500	155,700	140,600	122,800	114,500	127,600	201,200	416,900	841,300	542,500	163,500	186,000

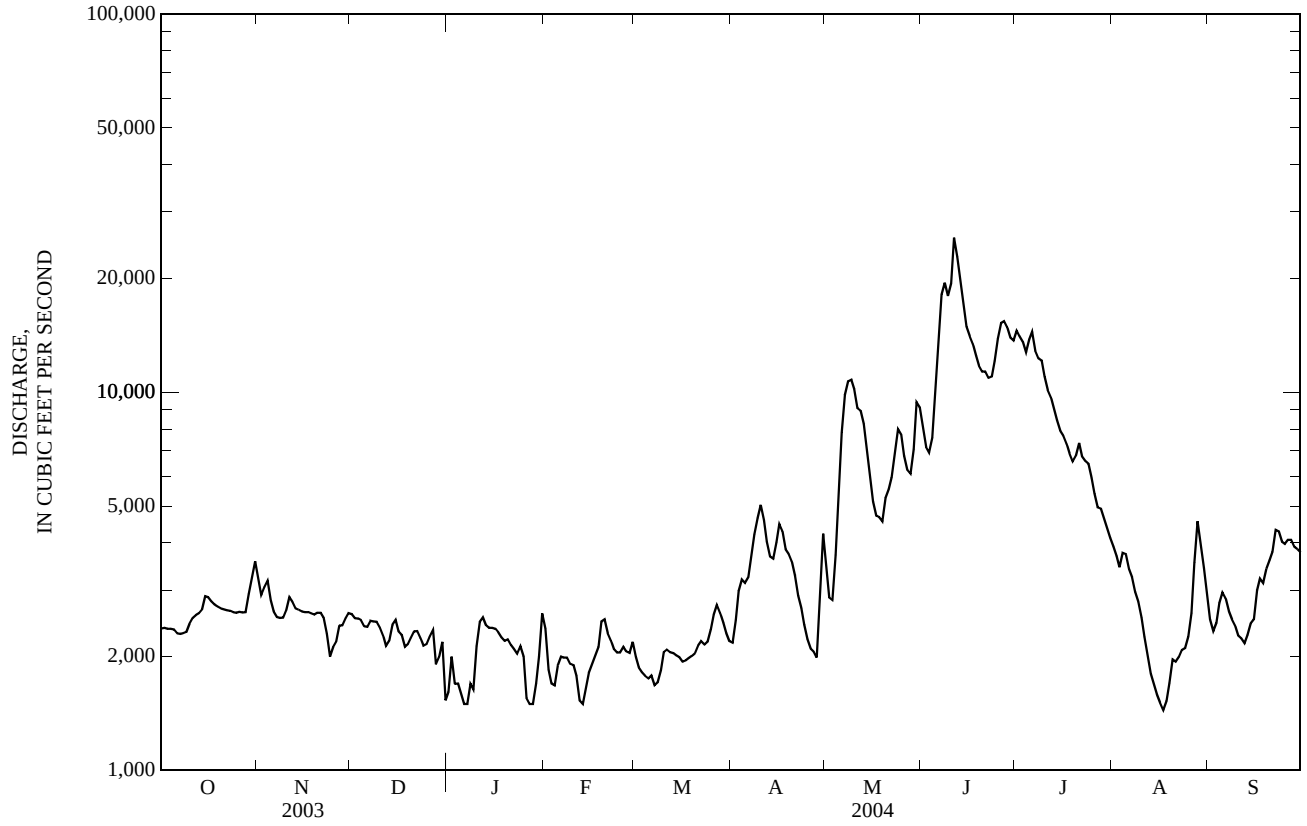
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)

MEAN	3,988	3,537	2,785	2,469	2,641	3,009	4,115	12,630	25,160	13,460	5,110	4,019
MAX	6,803	5,163	4,451	3,834	4,382	5,478	8,799	24,070	53,910	37,180	9,776	7,301
(WY)	(1942)	(1984)	(1976)	(1984)	(1997)	(1979)	(1943)	(1997)	(1997)	(1975)	(1997)	(1968)
MIN	2,128	2,283	1,579	1,363	1,559	1,767	1,438	5,635	9,849	3,410	1,462	1,527
(WY)	(2002)	(1932)	(1933)	(1940)	(1932)	(2002)	(1961)	(1953)	(1934)	(1934)	(2001)	(2001)

06214500 YELLOWSTONE RIVER AT BILLINGS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004	
ANNUAL TOTAL	2,034,040		1,600,320			
ANNUAL MEAN	5,573		4,372		6,917	
HIGHEST ANNUAL MEAN					12,100	1997
LOWEST ANNUAL MEAN					3,763	2001
HIGHEST DAILY MEAN	46,500	Jun 2	25,700	Jun 11	80,100	Jun 12, 1997
LOWEST DAILY MEAN	1,500	Feb 24	1,450	Aug 17	450	Dec 12, 1932
ANNUAL SEVEN-DAY MINIMUM	1,930	Jan 18	1,610	Aug 13	794	Dec 10, 1932
MAXIMUM PEAK FLOW			27,800	Jun 11	82,000	Jun 12, 1997
MAXIMUM PEAK STAGE			9.14	Jun 11	15.00	Jun 12, 1997
INSTANTANEOUS LOW FLOW					430	Dec 12, 1932
ANNUAL RUNOFF (AC-FT)	4,035,000		3,174,000		5,011,000	
10 PERCENT EXCEEDS	12,700		10,700		17,500	
50 PERCENT EXCEEDS	2,600		2,610		3,690	
90 PERCENT EXCEEDS	2,140		1,890		2,150	

e--Estimated.



06216000 PRYOR CREEK AT PRYOR, MT

LOCATION.--Lat 45°26'06", long 108°32'01" (NAD 27), in NE¼NW¼NE¼ sec.5, T.5 S., R.26 E., Big Horn County, Hydrologic Unit 10070008, on left bank 60 ft upstream from county bridge, 0.5 mi north of Pryor, 1.4 mi downstream from Lost Creek, and at river mile 82.7.

DRAINAGE AREA.--117 mi^2.

PERIOD OF RECORD.--June 1921 to September 1924 (no winter records), November 1966 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area. WDR MT-87-1: 1982-83 (M), 1986 (M).

GAGE.--Water-stage recorder. Elevation of gage is 4,007.35 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Oct. 14, 1966, nonrecording gage at approximately same site at different elevation.

REMARKS.--Records good. Diversions for irrigation of about 1,100 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	17	17	16	15	18	16	16	11	8.2	6.9	13
2	14	17	17	15	15	17	17	15	8.8	7.3	7.4	12
3	14	16	17	15	15	17	17	15	7.4	7.8	7.4	14
4	14	16	17	15	15	17	17	15	7.4	6.8	9.2	17
5	15	16	17	15	15	17	17	15	7.5	7.6	10	11
6	14	16	17	15	15	18	17	15	7.5	7.2	12	9.6
7	14	16	17	15	15	18	17	15	7.2	6.9	12	9.0
8	14	16	17	15	15	19	16	15	7.0	7.4	11	9.1
9	14	16	17	15	16	19	16	15	7.4	8.3	11	10
10	17	17	17	16	16	19	16	15	10	7.2	10	10
11	16	17	17	16	15	18	16	15	15	6.2	7.6	10
12	15	17	17	15	15	18	16	16	13	6.0	10	10
13	15	17	17	15	16	18	15	15	11	5.8	11	9.7
14	15	17	17	16	16	17	15	15	9.7	5.8	11	9.2
15	16	17	18	16	16	17	15	15	11	5.5	13	8.3
16	16	17	17	16	16	18	15	15	11	5.3	15	8.3
17	15	17	17	15	16	17	15	15	12	5.1	14	8.6
18	16	16	17	15	17	17	15	13	13	5.6	17	8.8
19	16	16	17	15	19	17	15	11	15	6.5	19	9.2
20	16	17	17	16	17	17	15	9.7	14	5.5	18	11
21	16	17	17	16	17	17	15	10	14	6.0	16	12
22	15	16	17	15	17	17	16	15	14	5.6	16	12
23	16	16	17	16	17	16	16	15	14	7.4	16	12
24	15	17	17	16	17	16	16	14	14	7.6	15	12
25	16	17	17	15	17	16	16	13	11	7.3	15	13
26	16	17	17	15	17	16	16	12	11	7.1	16	12
27	16	17	17	15	18	17	16	9.0	9.5	7.2	15	12
28	16	17	17	15	19	16	15	11	9.5	7.9	15	13
29	20	18	16	15	20	16	16	11	9.6	7.1	14	13
30	18	17	16	16	---	16	16	12	9.0	6.8	14	13
31	18	---	16	16	---	16	---	12	---	6.9	14	---
TOTAL	483	500	525	477	474	532	476	424.7	321.5	208.9	398.5	331.8
MEAN	15.6	16.7	16.9	15.4	16.3	17.2	15.9	13.7	10.7	6.74	12.9	11.1
MAX	20	18	18	16	20	19	17	16	15	8.3	19	17
MIN	14	16	16	15	15	16	15	9.0	7.0	5.1	6.9	8.3
AC-FT	958	992	1,040	946	940	1,060	944	842	638	414	790	658

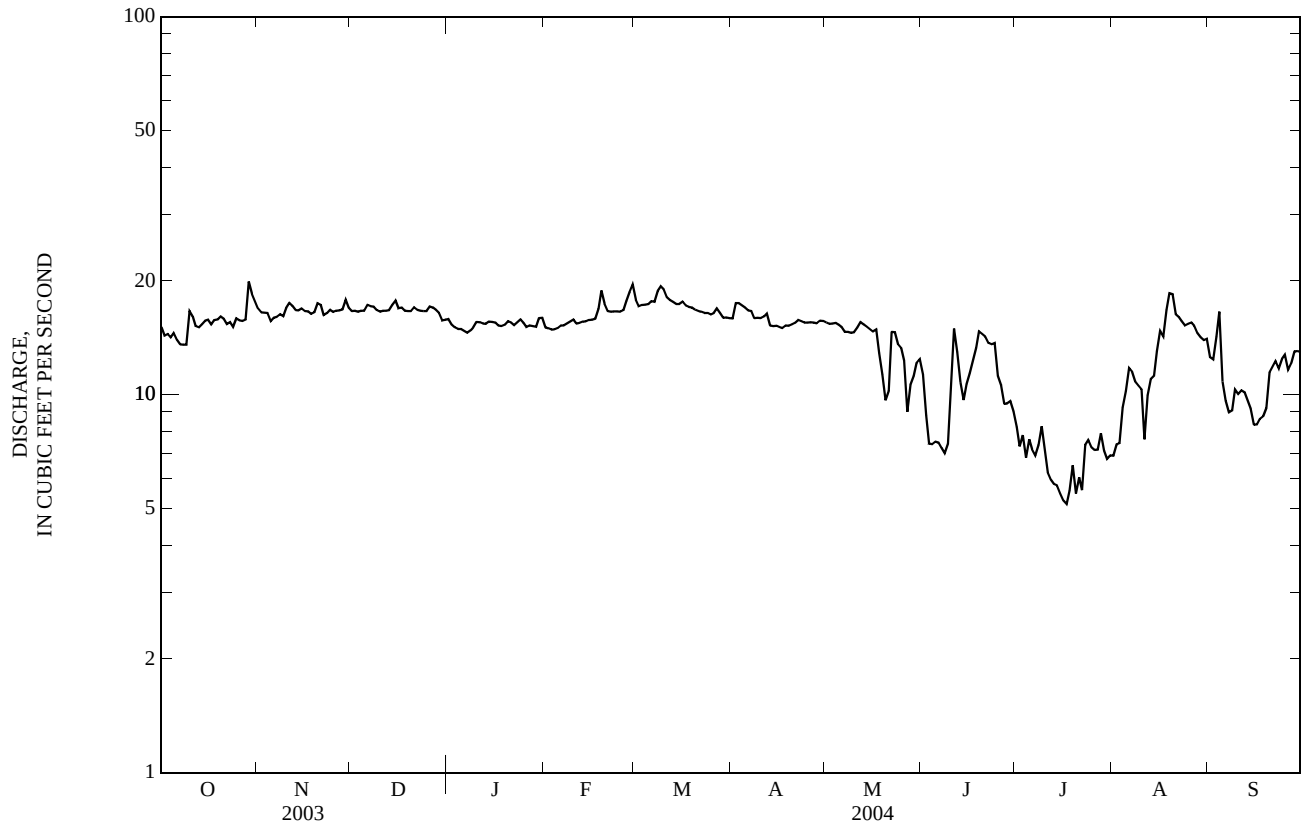
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2004, BY WATER YEAR (WY)

MEAN	31.2	30.9	30.1	28.8	29.7	31.6	31.7	53.4	40.1	23.0	20.9	26.5
MAX	62.9	62.0	69.7	54.3	55.7	70.9	58.8	251	158	69.3	49.5	61.0
(WY)	(1976)	(1976)	(1976)	(1976)	(1976)	(1979)	(1976)	(1978)	(1975)	(1975)	(1975)	(1978)
MIN	15.0	15.4	14.0	15.4	16.3	17.2	12.6	13.7	10.7	6.56	6.15	8.52
(WY)	(2003)	(2003)	(2003)	(2004)	(2004)	(2004)	(2003)	(2004)	(2004)	(2003)	(2003)	(2003)

06216000 PRYOR CREEK AT PRYOR, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1968 - 2004	
ANNUAL TOTAL	5,130.7		5,152.4			
ANNUAL MEAN	14.1		14.1		31.5	
HIGHEST ANNUAL MEAN					66.3	1975
LOWEST ANNUAL MEAN					13.7	2003
HIGHEST DAILY MEAN	37	Mar 13	20	Oct 29	1,700	May 19, 1978
LOWEST DAILY MEAN	4.9	Aug 1	5.1	Jul 17	3.2	Aug 1, 1988
ANNUAL SEVEN-DAY MINIMUM	5.1	Jul 29	5.6	Jul 12	5.1	Jul 29, 2003
MAXIMUM PEAK FLOW			a24	Feb 14	c2,280	May 19, 1978
MAXIMUM PEAK STAGE			3.62	Sep 4	d8.88	May 19, 1978
INSTANTANEOUS LOW FLOW			b4.3	Jul 16	1.8	Jul 31, 1988
ANNUAL RUNOFF (AC-FT)	10,180		10,220		22,820	
10 PERCENT EXCEEDS	18		17		48	
50 PERCENT EXCEEDS	16		15		27	
90 PERCENT EXCEEDS	6.5		7.6		15	

a--Gage height, 3.46 ft.
b--Gage height, 2.94 ft.
c--From rating curve extended above 410 ft^3/s on basis of contracted-opening measurement.
d--From floodmark.



06279500 BIGHORN RIVER AT KANE, WY

LOCATION.--Lat 44°45'31", long 108°10'51", in NW¼ NE¼ SW¼ sec.9, T.55 N., R.94 W., Big Horn County, Hydrologic Unit 10080010, on right bank 180 ft upstream from Bighorn Canyon National Recreation Area boundary, 0.5 mi upstream from normal high-water line of Bighorn Lake at elevation 3,660 ft, 1.3 mi upstream from Five Springs Creek, and 5.9 mi south of Kane.

DRAINAGE AREA.--15,762 mi^2. Area at sites used prior to May 17, 1956, 15,846 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M). WSP 1509: 1929. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft above NGVD of 1929, from topographic map. August 29, 1928, to April 25, 1932, nonrecording gage, and April 25, 1932 to May 16, 1956, water-stage recorder at site 12.5 mi downstream at different datum. U.S. Army Corps of Engineers data collection platform with satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation by Boysen Reservoir since October 1951. Diversions for irrigation of about 376,000 acres upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1923, 14.8 ft, September 30, 1923, site and datum in use April 1932 to May 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	696	699	e850	e500	712	e700	647	858	1,020	855	848	678
2	696	699	e800	e650	702	e700	627	797	896	1,780	793	669
3	603	789	e750	e600	626	e750	638	751	822	1,550	743	701
4	572	e750	e750	e500	612	e750	636	705	811	1,260	699	780
5	573	e700	e700	e450	654	e800	646	642	1,020	1,160	700	894
6	574	e710	e680	e390	658	e800	619	693	1,420	1,310	723	956
7	572	e710	e750	e450	675	e850	557	955	1,620	1,510	666	955
8	552	e720	e790	454	662	e900	597	1,240	1,640	1,300	644	883
9	534	e720	e700	553	674	e930	596	1,480	1,450	1,080	633	848
10	539	e740	e700	683	687	e1,000	843	1,430	1,420	1,000	583	798
11	554	e760	e650	739	e660	e840	1,140	1,190	1,460	946	531	765
12	583	759	e600	733	e650	834	874	1,300	1,370	e850	520	786
13	592	720	e600	711	643	826	778	1,330	1,260	e800	493	812
14	670	725	e650	709	577	804	684	1,110	1,170	e750	500	837
15	673	720	e700	715	590	802	666	955	1,030	757	486	891
16	658	718	e700	727	651	800	684	843	927	e770	502	1,020
17	658	723	e650	719	707	805	704	795	913	e850	525	961
18	665	721	e650	692	750	788	705	797	936	e950	533	926
19	663	717	e600	666	792	781	697	749	928	834	590	942
20	658	745	e650	670	e790	777	730	859	923	796	642	972
21	648	e750	e650	700	e750	768	667	1,050	978	752	677	1,130
22	641	e600	e630	710	e700	732	628	1,140	1,010	729	659	1,430
23	651	e500	e620	687	e600	734	589	1,170	936	771	725	1,190
24	651	e350	e600	681	e700	733	596	1,100	852	1,260	764	1,130
25	647	e400	e620	e660	e800	719	583	1,010	879	1,870	742	1,060
26	639	e500	e620	e650	e900	710	595	922	917	1,380	704	1,040
27	663	e600	e620	e640	e800	702	590	852	953	1,170	698	989
28	676	e650	e600	e620	e800	702	564	799	929	1,060	711	1,030
29	682	e700	e580	596	e750	685	632	747	897	965	729	1,040
30	692	e800	e560	636	---	670	812	897	902	989	730	1,050
31	698	---	e550	690	---	657	---	1,070	---	969	719	---
TOTAL	19,573	20,395	20,570	19,581	20,272	24,049	20,324	30,236	32,289	33,023	20,212	28,163
MEAN	631	680	664	632	699	776	677	975	1,076	1,065	652	939
MAX	698	800	850	739	900	1,000	1,140	1,480	1,640	1,870	848	1,430
MIN	534	350	550	390	577	657	557	642	811	729	486	669
AC-FT	38,820	40,450	40,800	38,840	40,210	47,700	40,310	59,970	64,050	65,500	40,090	55,860

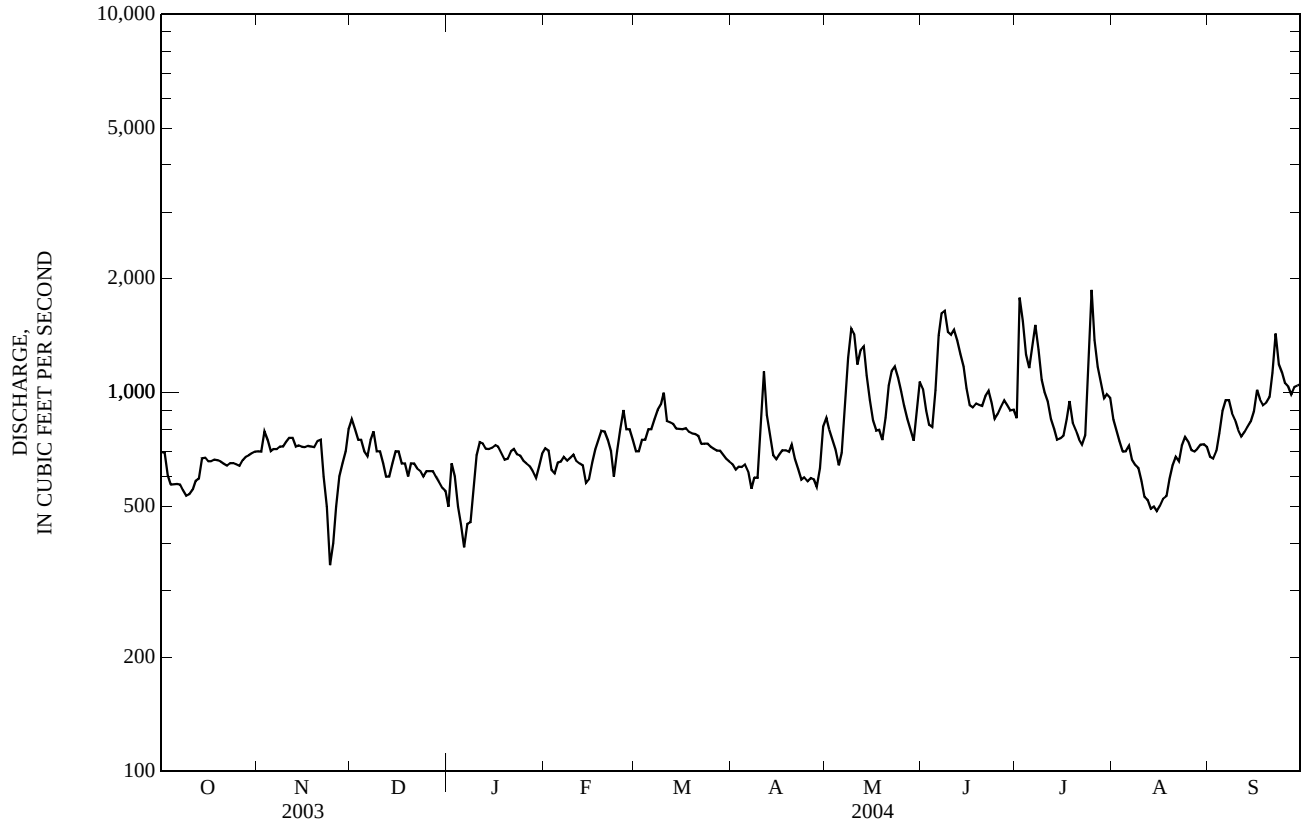
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2004, BY WATER YEAR (WY)

MEAN	1,773	1,647	1,437	1,349	1,514	1,799	1,778	3,121	5,687	3,085	1,422	1,507
MAX	3,994	2,871	2,506	2,871	3,164	3,171	3,454	7,505	14,680	11,650	6,388	3,673
(WY)	(1983)	(1984)	(1983)	(1972)	(1983)	(1972)	(1943)	(1947)	(1944)	(1967)	(1930)	(1973)
MIN	524	680	627	580	550	740	677	744	1,032	501	305	386
(WY)	(1936)	(2004)	(1961)	(1937)	(1933)	(1989)	(2004)	(2002)	(1934)	(1961)	(1940)	(1935)

06279500 BIGHORN RIVER AT KANE, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1930 - 2004*	
ANNUAL TOTAL	326,467		288,687			
ANNUAL MEAN	894		789		2,176	
HIGHEST ANNUAL MEAN					3,524	1947
LOWEST ANNUAL MEAN					781	2002
HIGHEST DAILY MEAN	5,080	May 31	1,870	Jul 25	24,800	Jun 15, 1935
LOWEST DAILY MEAN	350	Nov 24	e350	Nov 24	179	Jul 22, 1934
ANNUAL SEVEN-DAY MINIMUM	434	Aug 12	485	Jan 3	184	Jul 18, 1934
MAXIMUM PEAK FLOW			2,150	Jul 2	a25,200	Jun 16, 1935
MAXIMUM PEAK STAGE			2.70	Jul 2	a11.10	Jun 16, 1935
ANNUAL RUNOFF (AC-FT)	647,500		572,600		1,577,000	
10 PERCENT EXCEEDS	1,560		1,070		3,900	
50 PERCENT EXCEEDS	700		720		1,600	
90 PERCENT EXCEEDS	556		587		740	

*--August 1928 to September 1929 not included in computations, monthly only for selected months.
a--Site and datum then in use.
e--Estimated.



06279500 BIGHORN RIVER AT KANE, WY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--1947-1977, 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT												
28...	1430	680	660	10.9	107	8.3	1,140	12.0	8.0	<.04	.34	<.008
JAN												
28...	1425	583	663	11.4	90	8.0	1,180	-8.0	.0	.08	.56	<.008
MAY												
11...	1450	1,110	664	8.7	101	8.2	635	20.5	15.5	<.04	.56	.021
12...	1510	1,270	--	--	--	--	--	--	--	--	--	--
AUG												
17...	1350	518	672	8.9	115	8.0	1,040	28.0	21.5	<.04	<.06	<.008

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	E coli, modif. m-TEC, water, col/ 100 mL (90902)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT					
28...	<.02	E16k	30	81	149
JAN					
28...	<.02	44	62	81	128
MAY					
11...	E.01	290	--	474	1,420
12...	--	--	250	--	--
AUG					
17...	<.02	71	90	47	66

E--Estimated.
k--Counts outside acceptable range (non-ideal colony count).

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'19", long 108°26'04", in NW¼ NE¼ NE¼ sec.17, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on left bank 20 ft downstream from bridge on County Road 9 and 1.5 mi west of Lovell.

DRAINAGE AREA.--2,350 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,850 ft above NGVD of 1929, from topographic map. Prior to October 1, 1976, at site 500 ft downstream, at datum 2.00 ft higher. October 1, 1976 to September 30, 1980, at site 500 ft downstream, at datum 1.00 ft higher. October 1, 1981 to November 13, 1986, at site 500 ft downstream at same datum. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by Buffalo Bill Reservoir. Natural flow of stream affected by storage reservoirs, power development, diversions upstream from station for irrigation of about 143,000 acres, of which about 8,000 acres are downstream from station, and return flow from irrigated areas.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	492	505	431	328	e300	e290	294	173	409	412	e300	510
2	487	497	426	331	e290	e290	307	205	325	417	e280	477
3	510	495	423	e320	e300	e280	306	224	252	387	e280	575
4	507	501	426	e310	e300	e290	264	238	228	407	e260	716
5	503	494	430	e300	e310	e290	258	244	207	472	e340	689
6	514	473	428	e280	e310	e290	251	229	207	403	e360	670
7	485	487	429	e300	e310	e290	277	248	194	358	e380	643
8	581	470	405	e300	e310	e300	149	238	194	318	e400	548
9	656	469	398	e320	e300	e300	101	263	230	308	e440	487
10	689	466	395	e310	e300	e310	212	318	338	278	e420	417
11	725	470	403	e310	e290	e310	193	322	589	298	e380	419
12	740	464	405	e300	e280	e290	156	349	559	307	399	443
13	754	454	388	e300	e290	e280	238	453	588	224	414	514
14	745	456	366	e300	e290	e280	103	487	581	e280	414	527
15	697	449	364	e290	e290	e280	327	521	553	e260	444	547
16	800	446	377	e290	e290	281	329	478	541	e300	455	507
17	760	445	387	e290	e290	285	282	420	520	e280	405	476
18	932	443	373	e290	e300	288	326	384	530	e280	420	447
19	696	442	354	e290	e320	293	304	414	537	e300	408	468
20	616	454	346	e290	e300	285	287	451	527	e340	411	600
21	606	444	351	e290	e290	278	254	467	554	e320	436	652
22	615	433	317	e290	e290	280	212	459	472	e300	510	648
23	621	448	320	e290	e290	285	232	529	446	e420	699	591
24	608	475	322	e300	e280	286	206	551	417	e400	521	541
25	597	480	353	e310	e290	287	191	566	382	e440	486	514
26	520	489	308	e300	e300	287	190	532	434	e500	539	486
27	540	492	306	e280	e300	293	153	497	419	e400	726	471
28	539	478	312	e280	e290	289	166	490	436	e340	667	488
29	541	397	314	e290	e290	293	227	439	373	e320	665	445
30	539	442	300	e300	---	293	218	480	349	e320	661	467
31	511	---	318	e320	---	292	---	456	---	e300	605	---
TOTAL	19,126	13,958	11,475	9,299	8,590	8,965	7,013	12,125	12,391	10,689	14,125	15,983
MEAN	617	465	370	300	296	289	234	391	413	345	456	533
MAX	932	505	431	331	320	310	329	566	589	500	726	716
MIN	485	397	300	280	280	278	101	173	194	224	260	417
AC-FT	37,940	27,690	22,760	18,440	17,040	17,780	13,910	24,050	24,580	21,200	28,020	31,700

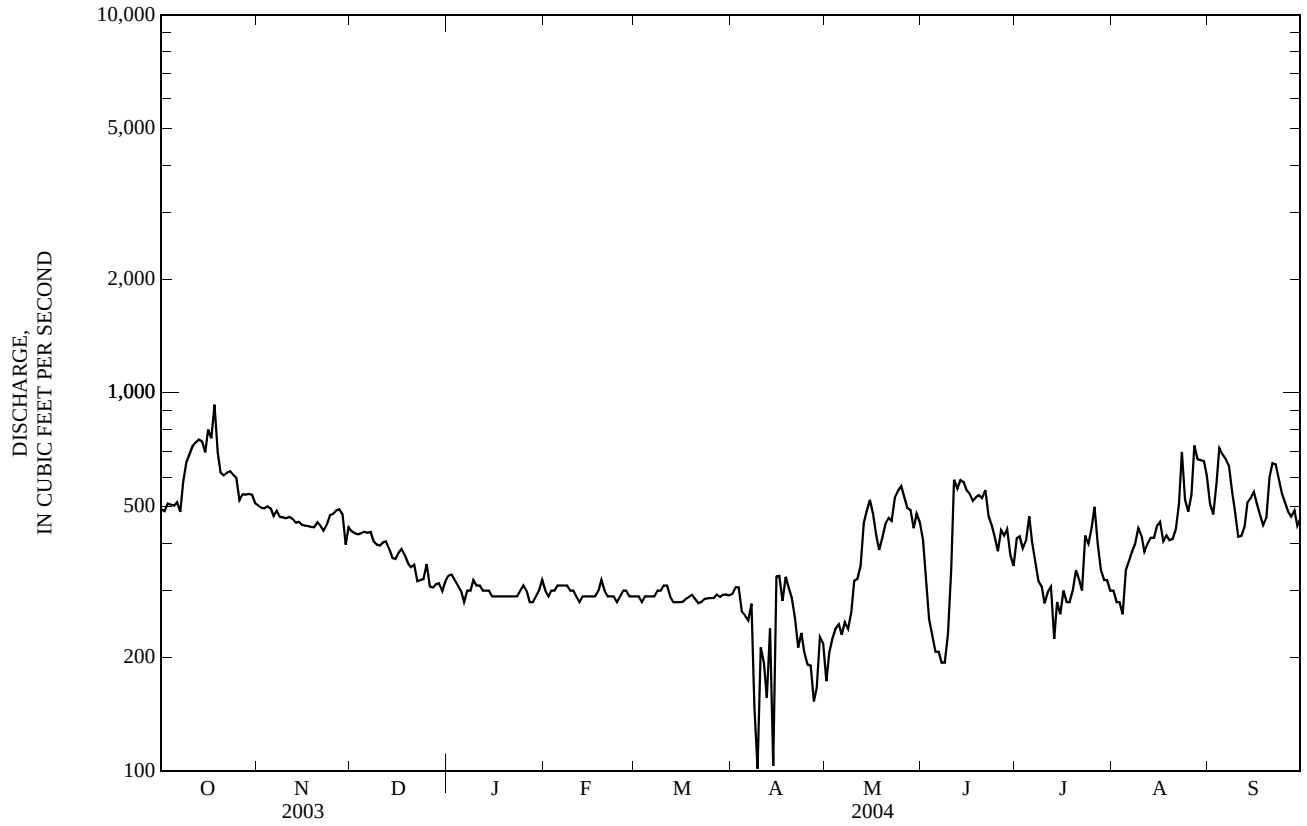
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2004, BY WATER YEAR (WY)

MEAN	751	699	631	565	586	656	774	854	1,822	1,678	719	762
MAX	1,251	1,146	1,168	1,065	1,139	1,951	3,353	2,925	4,935	4,686	1,305	1,354
(WY)	(1972)	(1969)	(1969)	(1973)	(1973)	(1997)	(1997)	(1996)	(1981)	(1982)	(1982)	(1991)
MIN	369	297	306	226	228	243	234	193	203	149	207	245
(WY)	(1989)	(1986)	(1995)	(1991)	(1989)	(1995)	(2004)	(1977)	(1977)	(1977)	(1977)	(1977)

06285100 SHOSHONE RIVER NEAR LOVELL, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1967 - 2004	
ANNUAL TOTAL	201,702		143,739			
ANNUAL MEAN	553		393		875	
HIGHEST ANNUAL MEAN					1,659	1997
LOWEST ANNUAL MEAN					356	2002
HIGHEST DAILY MEAN	6,380	Jun 20	932	Oct 18	15,200	Jun 10, 1981
LOWEST DAILY MEAN	51 e	Apr 14	101	Apr 9	27	May 31, 1977
ANNUAL SEVEN-DAY MINIMUM	85	Apr 10	165	Apr 8	48	May 30, 1977
MAXIMUM PEAK FLOW			a1,240	Oct 18	c16,400	Jun 10, 1981
MAXIMUM PEAK STAGE			b8.17	Jan 8	11.27	Jun 13, 2001
ANNUAL RUNOFF (AC-FT)	400,100		285,100		634,100	
10 PERCENT EXCEEDS	738		569		1,400	
50 PERCENT EXCEEDS	408		365		646	
90 PERCENT EXCEEDS	270		260		310	

a--Gage height, 5.88 ft.
b--Backwater from ice.
c--Gage height, 9.16 ft, site then in use, at present datum.
e--Estimated.



06285100 SHOSHONE RIVER NEAR LOVELL, WY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-97, October 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to September 1983.
WATER TEMPERATURES: October 1966 to September 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)
OCT										
28...	1630	519	652	12.4	126	8.5	973	11.5	9.0	<.04
JAN										
28...	1620	217	657	12.2	97	8.2	1,190	8.0	0.0	.06
MAY										
11...	1700	362	661	9.6	107	8.2	721	12.0	13.5	.05
12...	1440	385	--	--	--	--	--	--	--	--
AUG										
17...	1600	440	675	10.3	127	8.4	738	23.0	19.5	<.04

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	E coli, modif. m-TEC, water, col/ 100 mL (90902)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)
OCT					
28...	1.58	.012	<.02	21	E30k
JAN					
28...	1.52	E.007	<.02	E13k	E14k
MAY					
11...	1.42	.032	.05	600	--
12...	--	--	--	--	600
AUG					
17...	1.51	.010	.02	390	330

E--Estimated.
k--Counts outside acceptable range (non-ideal colony count).

06286400 BIGHORN LAKE NEAR ST. XAVIER, MT

LOCATION.--Lat 45°18'27", long 107°57'26" (NAD 27), in SW¼SE¼ sec.18, T.6 S., R.30 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southwest of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi^2.

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file at the U. S. Geological Survey office in Helena, Montana.

GAGE.--Water-stage recorder in powerhouse control room. Elevation of gage is 3,296.5 ft (NGVD 29) (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,312,000 acre-ft, between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest, 3,593.00 ft. Normal maximum operating level, 1,097,000 acre-ft, between elevation, 3,640.00 ft and 3,657.00 ft. Minimum operating level, 483,400 acre-ft, elevation, 3,547.00 ft. Dead storage, 16,010 acre-ft, below elevation 3,296.50 ft. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 519,400 acre-ft, Mar. 11, 2003, elevation 3,572.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 799,100 acre-ft, Nov. 13, elevation, 3,611.84 ft; minimum, 634,300 acre-ft, May 8, elevation, 3,581.76 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	3,607.20	769,900	--
October 31	3,611.40	796,200	+26,300
November 30	3,610.52	790,500	-5,700
December 31	3,605.13	757,600	-32,900
Calendar Year 2003	--	--	+122,000
January 31	3,594.58	699,300	-58,300
February 29	3,591.51	683,300	-16,000
March 31	3,588.22	666,500	-16,800
April 30	3,582.94	640,100	-26,400
May 31	3,584.12	646,000	+5,900
June 30	3,586.80	659,300	+13,300
July 31	3,587.29	661,800	+2,500
August 31	3,586.40	657,300	-4,500
September 30	3,593.63	694,300	+37,000
Water Year 2004	--	--	-75,600

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT

LOCATION.--Lat 45°19'00", long 107°55'05" (NAD 27), in NW¼NW¼NE¼ sec.16, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080015, on right bank 800 ft downstream from Yellowtail dam, 1,500 ft downstream from Lime Kiln Creek, 14 mi southwest of St. Xavier, and at river mile 83.9.

DRAINAGE AREA.--19,667 mi^2. Area at site used prior to Apr. 16, 1963, 19,626 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 3,158.38 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Apr. 16, 1963, and June 13, 1964, to Mar. 31, 1965, water-stage recorder at site 1.2 mi upstream at different elevation. Apr. 1, 1965, to July 31, 1966, water-stage recorder at site 1,300 ft downstream at present elevation.

REMARKS.--Records fair. **Figures of discharge given herein are sum of river flow and flow of Bighorn Canal.** Some regulation by 14 reservoirs in Wyoming with combined capacity of 1,400,000 acre-ft and complete regulation by Bighorn Lake (see preceding page) since Nov. 3, 1965. Diversions for irrigation of about 375,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,640	1,490	1,430	1,500	1,470	1,530	1,630	1,630	1,500	1,820	1,790	1,410
2	1,630	1,490	1,460	1,500	1,480	1,530	1,630	1,630	1,540	1,660	1,790	1,400
3	1,620	1,490	1,550	1,500	1,470	1,540	1,650	1,640	1,570	1,660	1,790	1,380
4	1,600	1,490	1,580	1,500	1,470	1,540	1,620	1,680	1,620	1,660	1,760	1,360
5	1,590	1,470	1,600	1,500	1,470	1,540	1,610	1,720	1,640	1,650	1,760	1,280
6	1,570	1,470	1,620	1,500	1,480	1,550	1,600	1,740	1,640	1,670	1,740	1,270
7	1,520	1,470	1,640	1,500	1,470	1,550	1,600	1,740	1,640	1,670	1,710	1,390
8	1,400	1,460	1,660	1,540	1,470	1,550	1,600	1,750	1,630	1,670	1,710	1,470
9	1,350	1,460	1,680	1,570	1,470	1,560	1,580	1,740	1,750	1,660	1,690	1,470
10	1,300	1,460	1,640	1,600	1,470	1,560	1,570	1,730	1,980	1,670	1,680	1,460
11	1,280	1,460	1,500	1,630	1,470	1,560	1,570	1,760	1,920	1,670	1,670	1,450
12	1,270	1,460	1,500	1,660	1,470	1,560	1,560	1,780	1,900	1,710	1,650	1,440
13	1,270	1,460	1,500	1,690	1,480	1,560	1,550	1,770	1,900	1,760	1,640	1,430
14	1,250	1,460	1,500	1,730	1,480	1,570	1,540	1,780	1,880	1,760	1,630	1,430
15	1,240	1,460	1,500	1,770	1,480	1,570	1,520	1,760	1,900	1,750	1,620	1,520
16	1,230	1,460	1,500	1,800	1,490	1,580	1,520	1,780	1,880	1,780	1,610	1,560
17	1,220	1,460	1,500	1,840	1,490	1,580	1,510	1,760	1,840	1,800	1,580	1,550
18	1,250	1,460	1,500	1,870	1,490	1,580	1,490	1,770	1,860	1,800	1,580	1,540
19	1,860	1,450	1,510	1,910	1,490	1,590	1,490	1,770	1,850	1,790	1,560	1,520
20	1,710	1,450	1,500	1,940	1,500	1,590	1,550	1,770	1,850	1,800	1,520	1,490
21	1,520	1,450	1,500	1,980	1,500	1,590	1,560	1,760	1,860	1,790	1,520	1,420
22	1,360	1,450	1,500	2,020	1,510	1,590	1,660	1,760	1,870	1,790	1,510	1,390
23	1,440	1,450	1,490	2,060	1,500	1,600	1,650	1,750	1,850	1,790	1,490	1,370
24	1,480	1,440	1,500	2,100	1,510	1,600	1,690	1,750	1,780	1,790	1,470	1,360
25	1,510	1,440	1,500	2,140	1,510	1,600	1,690	1,730	1,830	1,790	1,480	1,360
26	1,500	1,440	1,500	1,960	1,510	1,610	1,690	1,620	1,850	1,790	1,450	1,350
27	1,500	1,440	1,500	1,500	1,520	1,610	1,700	1,510	1,860	1,800	1,410	1,340
28	1,500	1,440	1,500	1,500	1,520	1,610	1,750	1,500	1,860	1,800	1,400	1,330
29	1,500	1,430	1,500	1,490	1,530	1,620	1,790	1,500	1,860	1,800	1,360	1,320
30	1,500	1,430	1,500	1,480	---	1,620	1,780	1,500	1,860	1,790	1,330	1,320
31	1,490	---	1,500	1,480	---	1,630	---	1,500	---	1,790	1,320	---
TOTAL	45,100	43,740	47,360	52,760	43,170	48,870	48,350	52,580	53,770	54,130	49,220	42,380
MEAN	1,455	1,458	1,528	1,702	1,489	1,576	1,612	1,696	1,792	1,746	1,588	1,413
MAX	1,860	1,490	1,680	2,140	1,530	1,630	1,790	1,780	1,980	1,820	1,790	1,560
MIN	1,220	1,430	1,430	1,480	1,470	1,530	1,490	1,500	1,500	1,650	1,320	1,270
AC-FT	89,460	86,760	93,940	104,600	85,630	96,930	95,900	104,300	106,700	107,400	97,630	84,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2004, BY WATER YEAR (WY)

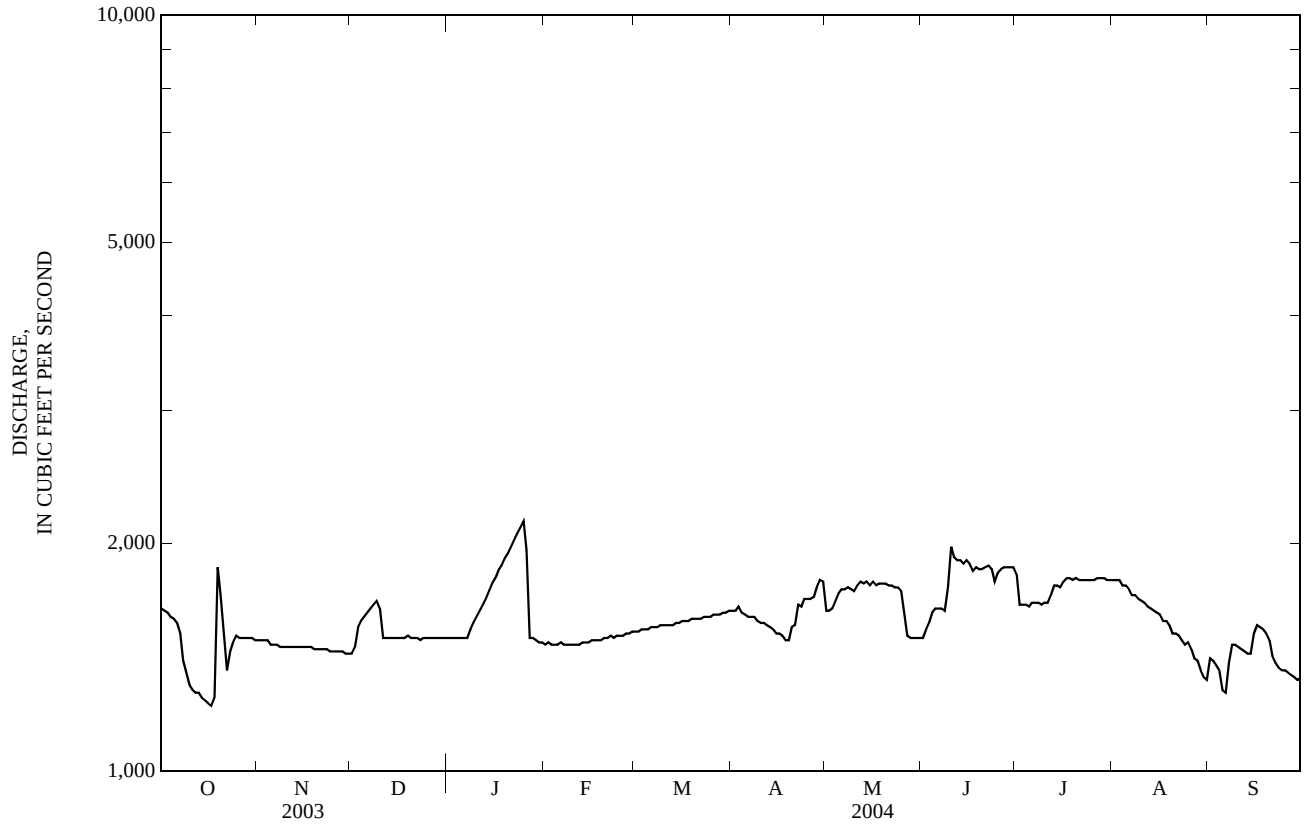
MEAN	2,911	2,867	2,686	2,560	2,624	2,869	2,854	3,767	6,904	5,412	2,847	2,690
MAX	5,142	5,151	4,999	5,267	4,384	4,809	6,675	8,744	17,900	18,890	6,784	4,544
(WY)	(1972)	(1983)	(1968)	(1968)	(1976)	(1976)	(1972)	(1947)	(1935)	(1967)	(1997)	(1973)
MIN	1,224	856	1,095	1,090	888	327	678	900	1,078	1,144	1,260	1,074
(WY)	(1978)	(1966)	(1935)	(1935)	(1936)	(1966)	(1966)	(1966)	(1966)	(1960)	(1966)	(1966)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004	
ANNUAL TOTAL	568,680		581,430			
ANNUAL MEAN	1,558		1,589		3,417	
HIGHEST ANNUAL MEAN					5,059	1947
LOWEST ANNUAL MEAN					1,565	1966
HIGHEST DAILY MEAN	2,120	Jul 22	2,140	Jan 25	37,400	Jun 16, 1935
LOWEST DAILY MEAN	1,220	Oct 17	1,220	Oct 17	112	Apr 2, 1967
ANNUAL SEVEN-DAY MINIMUM	1,250	Oct 12	1,250	Oct 12	195	Mar 25, 1970
MAXIMUM PEAK FLOW			a2,270	Jan 26	37,400	Jun 16, 1935
MAXIMUM PEAK STAGE			b60.63	Oct 18		
INSTANTANEOUS LOW FLOW					49	Mar 29, 1966
ANNUAL RUNOFF (AC-FT)	1,128,000		1,153,000		2,476,000	
10 PERCENT EXCEEDS	1,940		1,800		5,710	
50 PERCENT EXCEEDS	1,500		1,560		2,790	
90 PERCENT EXCEEDS	1,280		1,430		1,500	

06287000 BIGHORN RIVER NEAR ST. XAVIER, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1935 - 1961*		WATER YEARS 1967 - 2004**	
ANNUAL MEAN	3,426		3,435	
HIGHEST ANNUAL MEAN	5,059	1947	4,839	1999
LOWEST ANNUAL MEAN	1,706	1961	1,649	2002
HIGHEST DAILY MEAN	37,400	Jun 16 1935	24,800	Jul 6, 1967
LOWEST DAILY MEAN	300	Dec 20 1951	112	Apr 2, 1967
ANNUAL SEVEN-DAY MINIMUM	656	Dec 25 1934	518	Mar 25, 1970
MAXIMUM PEAK FLOW	37,400	Jun 19 1935	25,300	Jul 5, 1967
INSTANTANEOUS LOW FLOW	228	Dec 9 1937	c112	Apr 2, 1967
ANNUAL RUNOFF (AC-FT)	2,482,000		2,489,000	
10 PERCENT EXCEEDS	6,640		5,480	
50 PERCENT EXCEEDS	2,450		3,100	
90 PERCENT EXCEEDS	1,370		1,740	

*--Prior to construction of Yellowtail Dam.
**--After completion of Yellowtail Dam.
a--Gage height, 60.10 ft.
b--Backwater from algae.
c--Result of discharge measurement.



06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT

LOCATION.--Lat 45°00'25", long 107°36'52" (NAD 27), in SW¼NW¼ sec.36, T.9 S., R.33 E., Bighorn County, Hydrologic Unit 10080016, on right bank 20 ft downstream from county bridge, 0.5 mi north of Wyoming-Montana State line, 1 mi downstream from West Fork, 13 mi southwest of Wyola, and at river mile 115.2.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--March 1939 to current year. Prior to October 1940, published as Little Horn River at State Line, near Wyola.

REVISED RECORDS.--WSP 1729: Drainage area. WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,350 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of 163 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	67	62	54	60	57	62	73	130	113	69	53
2	75	67	61	51	60	55	64	74	129	108	69	53
3	74	70	61	39	60	56	61	82	134	106	69	57
4	74	71	61	28	62	56	62	99	148	105	72	57
5	74	57	58	30	63	55	67	128	153	115	69	55
6	73	57	63	31	61	56	69	148	167	108	68	53
7	73	61	61	45	61	57	73	165	167	101	66	53
8	73	65	61	67	61	58	73	185	155	98	64	52
9	73	74	59	73	60	58	70	181	152	96	64	52
10	74	73	55	71	58	59	65	164	152	93	64	52
11	73	73	60	67	57	57	67	169	157	91	64	52
12	74	71	49	63	60	56	64	154	160	89	61	51
13	74	70	63	61	60	58	65	136	149	87	61	58
14	72	70	62	60	59	56	68	126	140	85	60	56
15	75	69	61	61	58	57	69	121	135	86	60	54
16	74	69	57	60	57	57	66	121	136	85	59	52
17	73	69	59	60	57	56	68	118	133	82	59	52
18	72	68	54	60	59	57	70	130	131	80	59	50
19	72	67	57	61	59	59	67	150	129	79	59	50
20	72	69	57	60	56	59	66	152	124	78	59	60
21	72	65	56	59	55	58	67	154	123	77	59	57
22	71	39	56	59	55	59	65	155	119	79	59	55
23	72	41	56	60	56	60	65	150	118	81	59	55
24	70	61	56	60	56	62	66	145	131	77	58	57
25	68	64	56	56	56	62	64	133	121	75	58	54
26	72	63	57	49	56	62	65	129	118	73	65	52
27	72	67	56	54	56	63	71	129	116	72	63	53
28	73	66	54	64	58	61	82	141	113	81	59	57
29	78	65	48	64	57	59	76	156	112	74	57	53
30	67	63	47	63	---	59	74	140	111	72	55	52
31	64	---	51	60	---	60	---	136	---	70	54	---
TOTAL	2,248	1,951	1,774	1,750	1,693	1,804	2,031	4,244	4,063	2,716	1,921	1,617
MEAN	72.5	65.0	57.2	56.5	58.4	58.2	67.7	137	135	87.6	62.0	53.9
MAX	78	74	63	73	63	63	82	185	167	115	72	60
MIN	64	39	47	28	55	55	61	73	111	70	54	50
AC-FT	4,460	3,870	3,520	3,470	3,360	3,580	4,030	8,420	8,060	5,390	3,810	3,210

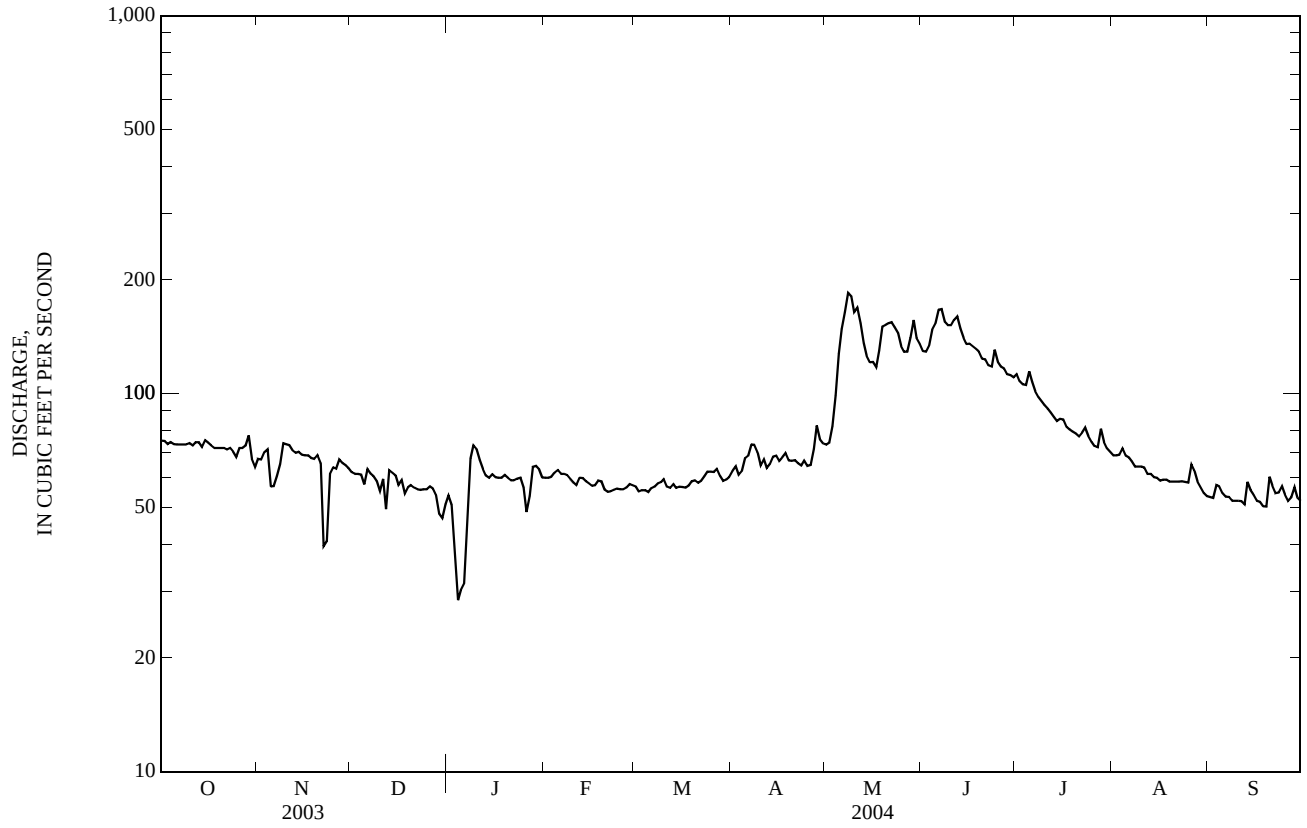
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	86.1	75.2	67.5	62.6	61.3	61.5	84.6	321	510	216	122	97.0
MAX	120	104	91.2	84.9	88.0	86.4	172	533	1,125	689	228	151
(WY)	(1976)	(1942)	(1976)	(1946)	(1946)	(1946)	(1946)	(1977)	(1975)	(1975)	(1975)	(1975)
MIN	57.6	52.3	46.8	43.6	40.2	46.8	50.7	127	135	87.6	62.0	53.9
(WY)	(2003)	(2003)	(2002)	(1963)	(2003)	(2003)	(1961)	(1953)	(2004)	(2004)	(2004)	(2004)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	44,899		27,812			
ANNUAL MEAN	123		76.0		147	
HIGHEST ANNUAL MEAN					253	1975
LOWEST ANNUAL MEAN					76.0	2004
HIGHEST DAILY MEAN	1,180	May 31	185	May 8	2,340	Jun 4, 1944
LOWEST DAILY MEAN	20	Feb 24	28	Jan 4	18	Feb 2, 1989
ANNUAL SEVEN-DAY MINIMUM	30	Feb 22	40	Jan 1	27	Dec 18, 1983
MAXIMUM PEAK FLOW			215	May 8	a2,730	Jun 3, 1944
MAXIMUM PEAK STAGE			2.36	May 8	b5.93	Jun 9, 1944
INSTANTANEOUS LOW FLOW					18	Feb 2, 1989
ANNUAL RUNOFF (AC-FT)	89,060		55,170		106,700	
10 PERCENT EXCEEDS	255		130		330	
50 PERCENT EXCEEDS	74		64		82	
90 PERCENT EXCEEDS	45		54		56	

a--Gage height, 4.97 ft, from rating curve extended above 1,400 ft^3/s.
b--Result of log jam.

06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT—Continued



06289600 WEST PASS CREEK NEAR PARKMAN, WY

LOCATION.--Lat 44°59'16", long 107°28'56", in NE¼ NE¼ SE¼ sec.21, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on right bank, anchored to concrete headwall of culvert on county road and 7.6 mi northwest of Parkman.

DRAINAGE AREA.--15.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year (no winter records water years 1985-87).

GAGE.--Water-stage recorder. Elevation of gage is 4,540 ft above NGVD of 1929, from topographic map. Prior to April 2, 1985, at site 100 ft north (on abandoned channel) at datum 4.28 ft lower. April 2, 1985 to March 27, 1986, at site 300 ft upstream at datum 0.95 ft higher. April 2, 1985 to September 30, 1998, at same site at datum 1.00 ft lower. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	6.3	5.5	e5.5	e6.0	4.7	5.7	5.7	7.0	5.6	4.5	3.8
2	5.9	6.3	5.4	e5.4	e5.5	4.3	5.9	5.8	7.0	5.4	4.5	3.9
3	5.6	5.9	5.4	e5.2	e5.5	4.5	5.9	5.9	7.0	5.4	4.6	4.0
4	5.7	e5.8	e5.2	e4.8	e6.0	4.5	5.9	6.3	7.0	5.5	4.6	3.8
5	5.5	e5.7	e5.2	e4.8	e6.0	4.5	5.9	6.3	6.6	7.9	4.5	3.8
6	5.5	e5.7	e5.5	e5.5	e6.0	4.4	6.0	6.4	6.6	5.8	4.5	3.8
7	5.5	e5.8	e5.7	e6.5	e5.4	5.0	6.0	6.5	6.7	5.5	4.5	3.8
8	5.5	e5.8	5.7	e7.0	e5.0	7.4	6.1	6.9	6.5	5.4	4.4	3.9
9	5.5	e5.9	e5.5	e7.5	e5.0	7.1	6.1	7.5	6.5	5.4	4.6	3.8
10	5.6	e5.9	e5.2	e7.5	e5.0	5.9	6.1	8.2	6.6	5.5	4.6	3.9
11	5.7	5.9	e5.1	e7.5	e6.5	5.1	6.1	8.9	7.9	5.4	4.6	3.8
12	5.9	5.9	e5.0	e6.5	5.5	5.3	5.9	9.4	6.8	5.3	4.5	3.8
13	5.9	5.9	e5.1	5.9	5.5	5.8	5.9	9.5	6.7	5.4	4.5	4.2
14	5.9	6.0	e5.2	5.4	4.5	5.0	5.9	9.5	6.6	5.3	4.3	4.1
15	5.8	6.0	e5.2	5.4	4.2	5.3	6.0	9.3	6.4	5.6	4.0	4.0
16	5.7	5.9	e5.1	5.3	4.2	5.3	6.2	9.0	6.3	5.5	4.0	4.0
17	5.7	5.9	5.4	5.2	4.2	5.8	6.5	8.6	6.1	5.4	4.2	3.9
18	5.7	5.9	e5.3	e5.1	5.3	6.2	6.7	8.4	6.1	5.1	4.1	3.9
19	5.8	5.8	e5.4	5.1	5.8	6.6	6.3	7.7	5.8	5.1	4.1	3.9
20	5.8	e5.9	5.5	5.1	4.6	5.5	6.2	7.6	6.3	5.1	4.1	4.8
21	5.9	e5.9	5.5	e5.0	4.4	5.3	6.4	7.5	6.2	5.0	4.0	4.2
22	6.0	5.9	5.3	e5.0	4.4	5.3	6.5	7.5	6.1	5.1	4.0	4.1
23	6.0	5.9	5.3	5.0	4.3	5.3	6.5	8.0	6.0	5.2	3.9	4.1
24	5.9	5.9	5.3	5.1	4.5	5.6	6.3	8.0	6.2	5.1	3.9	4.1
25	5.9	5.9	5.3	4.3	4.5	5.4	6.3	7.7	6.1	5.1	4.0	4.1
26	5.9	5.7	e5.2	e4.1	4.4	5.4	6.3	7.6	6.0	5.1	3.8	4.0
27	5.9	5.6	e4.5	e5.0	4.5	5.6	6.2	7.7	5.8	5.0	3.7	4.1
28	6.0	4.7	e2.5	e5.5	4.8	5.2	6.4	7.4	5.5	5.1	3.9	4.1
29	7.4	5.6	e3.7	e6.5	4.3	5.3	6.3	7.3	5.5	4.4	3.9	4.1
30	6.5	5.5	e6.5	e7.0	---	5.5	6.0	7.2	5.5	3.9	3.9	4.2
31	6.3	---	e6.0	e6.5	---	5.6	---	7.0	---	4.4	3.9	---
TOTAL	181.7	174.8	161.7	175.2	145.8	167.7	184.5	236.3	191.4	164.0	130.6	120.0
MEAN	5.86	5.83	5.22	5.65	5.03	5.41	6.15	7.62	6.38	5.29	4.21	4.00
MAX	7.4	6.3	6.5	7.5	6.5	7.4	6.7	9.5	7.9	7.9	4.6	4.8
MIN	5.5	4.7	2.5	4.1	4.2	4.3	5.7	5.7	5.5	3.9	3.7	3.8
AC-FT	360	347	321	348	289	333	366	469	380	325	259	238

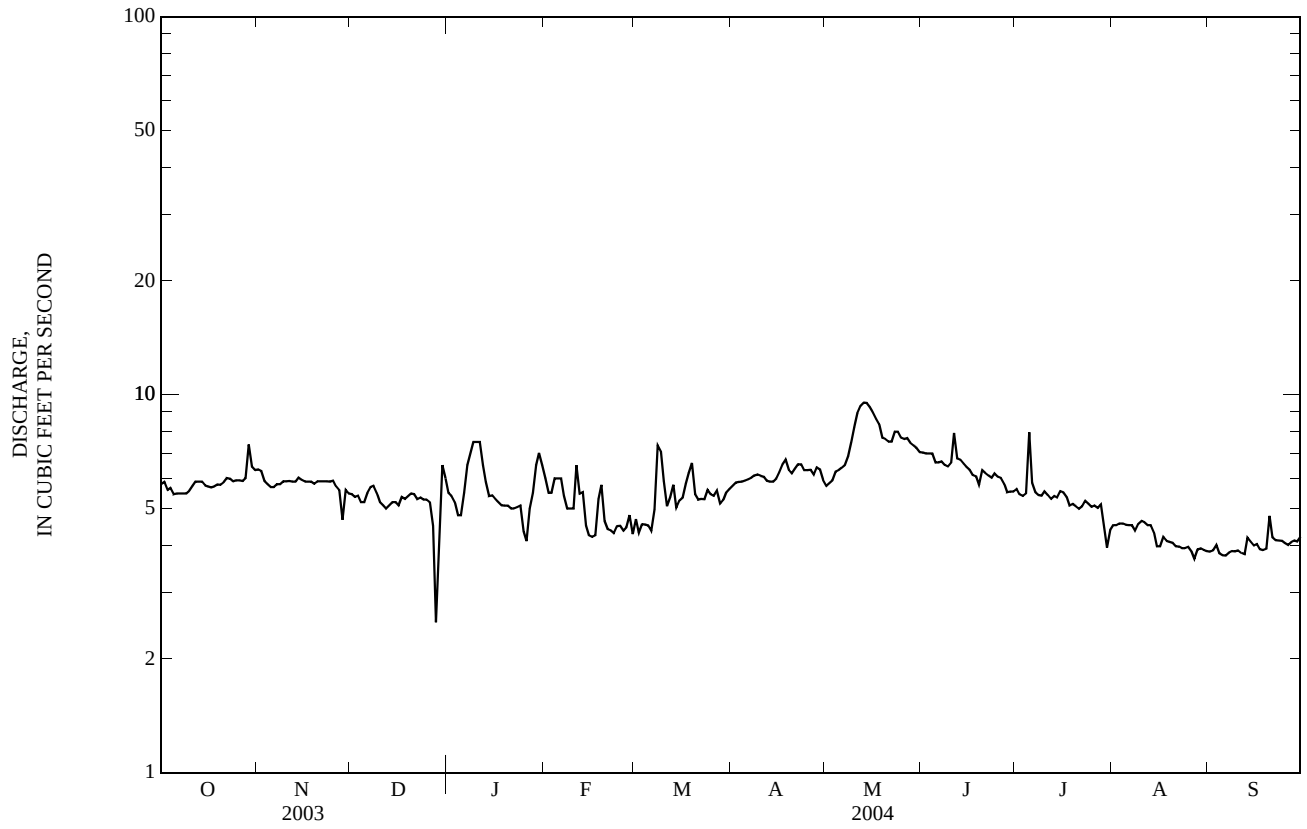
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)*

MEAN	7.53	7.18	6.37	6.21	6.02	7.29	12.8	31.6	23.6	12.4	8.46	7.50
MAX	9.95	9.30	9.02	8.10	7.98	10.5	25.2	79.9	60.6	26.9	14.9	11.6
(WY)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1994)	(1995)	(1995)	(1995)	(1995)	(1995)
MIN	4.61	4.42	4.64	4.25	4.02	5.41	6.15	7.62	6.38	5.21	4.21	4.00
(WY)	(2002)	(2002)	(2003)	(1988)	(1989)	(2004)	(2004)	(2004)	(2004)	(1985)	(2004)	(2004)

06289600 WEST PASS CREEK NEAR PARKMAN, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004*	
ANNUAL TOTAL	3,995.6		2,033.7			
ANNUAL MEAN	10.9		5.56		11.9	
HIGHEST ANNUAL MEAN					21.2	1995
LOWEST ANNUAL MEAN					5.56	2004
HIGHEST DAILY MEAN	57	May 30	9.5	May 13,14	291	May 9, 1995
LOWEST DAILY MEAN	e2.5	Dec 28	e2.5	Dec 28	c0.00	Dec 25, 1998
ANNUAL SEVEN-DAY MINIMUM	4.3	Feb 21	3.8	Sep 4	0.81	Feb 3, 1989
MAXIMUM PEAK FLOW			a11	Mar 8	340	May 9, 1995
MAXIMUM PEAK STAGE			b2.50	Jan 8	d4.76	Apr 28, 1984
ANNUAL RUNOFF (AC-FT)	7,930		4,030		8,590	
10 PERCENT EXCEEDS	26		7.0		23	
50 PERCENT EXCEEDS	6.3		5.5		7.7	
90 PERCENT EXCEEDS	4.7		4.1		5.2	

a--Gage height, 1.68 ft.
b--Backwater from ice.
c--Result of channel blockage or diversion upstream.
d--Backwater from ice, site and datum then in use.
e--Estimated.



06289820 EAST PASS CREEK NEAR DAYTON, WY

LOCATION.--Lat 44°59'26", long 107°25'20", in NE¼ SE¼ NE¼ sec.24, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on right bank 0.4 mi downstream from bridge on Sheridan County Road 144, 5.0 mi northwest of Parkman, and 11.2 mi northwest of Dayton.
DRAINAGE AREA.--21.7 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,405 ft above NGVD of 1929, from topographic map. October 1982 to August 1995, at site 270 ft upstream at different datum. August 1995 to April 1996, at site 0.3 mi downstream at different datum. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several small reservoirs upstream from station, combined capacity, 415 acre-ft, for irrigation. Diversions for irrigation of about 2,900 acres upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	6.1	5.3	e5.3	e7.0	6.3	8.1	6.2	6.2	5.4	3.8	3.5
2	5.9	6.1	5.3	e5.3	e6.5	5.9	8.0	6.0	5.9	4.5	3.5	3.6
3	5.8	6.0	5.2	e5.2	e6.5	6.1	8.0	5.8	5.7	3.0	3.5	4.4
4	5.7	5.8	e5.2	e4.9	e6.9	6.0	8.1	6.0	5.7	6.0	3.5	4.5
5	5.6	e5.6	e5.1	e5.0	7.1	6.1	8.1	7.1	5.5	7.3	3.3	4.3
6	5.7	e5.6	5.7	e6.0	7.0	e6.3	8.1	8.5	5.4	4.0	3.1	4.3
7	5.4	e5.7	5.6	e7.0	6.3	e6.4	8.4	9.2	5.4	4.0	3.2	4.2
8	5.1	e5.7	5.6	e8.0	5.9	8.0	8.3	10	5.4	4.0	3.2	4.5
9	4.9	5.8	5.3	8.1	e5.8	8.6	8.4	10	5.4	3.6	3.2	4.4
10	5.0	5.8	e5.2	8.3	e5.8	8.9	8.1	13	5.5	3.9	3.3	4.4
11	4.9	e5.8	e5.0	7.9	e8.0	7.8	8.0	12	e6.4	6.2	3.2	4.4
12	4.7	5.8	e5.0	7.7	e7.0	7.6	7.8	12	e6.2	6.1	3.2	4.4
13	4.6	5.7	e5.2	7.6	e6.9	8.2	7.7	11	e6.0	6.0	3.2	5.0
14	4.2	5.8	e5.2	7.3	e6.4	7.5	7.6	9.6	e6.0	6.1	3.1	4.9
15	4.1	5.8	e5.2	7.1	e6.1	7.7	7.6	8.3	e5.9	6.0	3.0	5.0
16	4.1	5.7	e5.0	7.0	5.8	7.6	7.4	8.0	6.0	5.9	3.1	4.8
17	5.2	5.8	e5.3	6.4	5.7	8.0	7.1	7.6	6.1	4.8	3.0	4.6
18	5.8	5.6	5.3	e6.3	6.7	8.6	7.7	7.4	6.2	4.7	3.1	4.5
19	5.9	5.6	5.2	6.3	8.1	9.3	7.6	7.3	6.2	4.7	3.2	4.6
20	5.9	e5.8	5.2	6.3	7.1	8.5	7.4	7.4	6.4	4.6	3.1	6.0
21	6.1	e6.0	5.1	e6.2	6.6	8.0	7.4	7.7	6.2	4.5	3.1	5.5
22	6.1	e5.6	5.1	e6.2	6.4	7.8	7.4	7.8	6.0	4.4	3.1	5.2
23	6.0	e6.0	5.2	6.3	6.3	8.1	7.1	8.0	6.0	5.0	3.1	5.2
24	6.1	e6.4	e5.2	6.3	6.2	8.4	6.9	8.1	6.2	5.0	3.2	5.1
25	6.1	6.1	e5.2	e6.0	6.3	8.4	7.0	7.6	5.9	4.6	3.5	5.0
26	6.1	6.0	e5.2	e5.6	6.3	8.4	6.5	7.3	5.8	4.3	3.6	5.0
27	6.1	5.7	e5.2	e6.0	6.3	8.9	5.7	7.0	5.8	4.2	3.5	5.2
28	6.1	5.5	e5.2	e6.0	6.9	8.4	6.5	6.9	5.8	4.7	3.4	5.2
29	7.6	5.8	e5.2	e8.0	6.8	8.3	6.8	6.7	5.6	4.2	3.3	5.1
30	6.6	5.5	e5.3	e9.0	---	8.0	6.3	6.7	5.0	4.1	3.5	5.2
31	6.1	---	e5.3	e8.0	---	8.1	---	6.5	---	4.0	3.4	---
TOTAL	173.3	174.2	162.3	206.6	190.7	240.2	225.1	252.7	175.8	149.8	101.5	142.0
MEAN	5.59	5.81	5.24	6.66	6.58	7.75	7.50	8.15	5.86	4.83	3.27	4.73
MAX	7.6	6.4	5.7	9.0	8.1	9.3	8.4	13	6.4	7.3	3.8	6.0
MIN	4.1	5.5	5.0	4.9	5.7	5.9	5.7	5.8	5.0	3.0	3.0	3.5
AC-FT	344	346	322	410	378	476	446	501	349	297	201	282

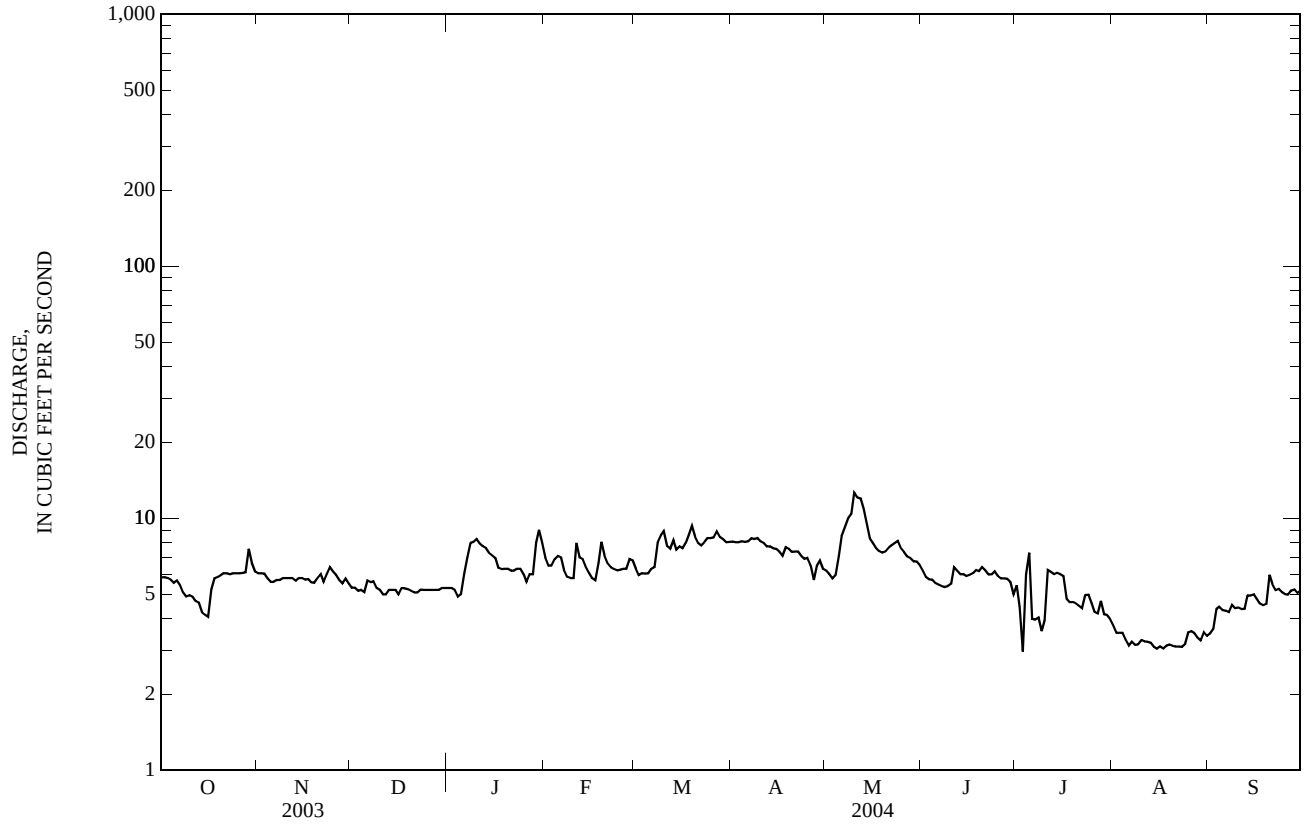
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)

MEAN	8.49	8.63	8.19	8.38	8.31	9.70	15.9	41.3	33.4	12.3	6.91	7.03
MAX	13.9	11.4	10.5	10.5	10.6	14.2	32.4	90.8	82.8	32.9	14.8	14.8
(WY)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1994)	(1995)	(1995)	(1992)	(1993)	(1995)
MIN	5.41	5.81	5.24	6.35	6.06	7.29	7.50	8.15	5.86	4.83	2.73	3.92
(WY)	(2003)	(2004)	(2004)	(2003)	(2003)	(1990)	(2004)	(2004)	(2004)	(2004)	(1988)	(2002)

06289820 EAST PASS CREEK NEAR DAYTON, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004	
ANNUAL TOTAL	4,496.4		2,194.2			
ANNUAL MEAN	12.3		6.00		14.1	
HIGHEST ANNUAL MEAN					23.6	1984
LOWEST ANNUAL MEAN					6.00	2004
HIGHEST DAILY MEAN	99	May 30	13	May 10	304	May 9, 1995
LOWEST DAILY MEAN	3.0	Aug 4, 11-14	3.0	Jul 3, Aug 15,17	c0.84	Nov 14, 2002
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 9	3.1	Aug 14	1.9	Sep 10, 2002
MAXIMUM PEAK FLOW			a13	May 10	d511	May 9, 1995
MAXIMUM PEAK STAGE			b7.15	Dec 28	f9.00	Feb 6, 1996
ANNUAL RUNOFF (AC-FT)	8,920		4,350		10,190	
10 PERCENT EXCEEDS	30		8.1		27	
50 PERCENT EXCEEDS	6.1		5.9		9.0	
90 PERCENT EXCEEDS	5.0		4.0		5.5	

a--Gage height, 5.64 ft.
b--Backwater from ice.
c--Result of pumping upstream.
d--Gage height, 4.47 ft, site and datum then in use, from rating curve extended above 221 ft^3/s.
e--Estimated.
f--Ice jam, site and datum then in use.



06290000 PASS CREEK NEAR WYOLA, MT

LOCATION.--Lat 45°03'23", long 107°21'19" (NAD 27), in NE¼NE¼SE¼ sec.13, T.9 S., R.35 E., Big Horn County, Hydrologic Unit 10080016, on right bank 125 ft downstream from bridge on U.S. Highway 87, 2.0 mi downstream from Twin Creek, 5.5 mi south of Wyola, and at river mile 10.2.

DRAINAGE AREA.--111 mi^2. Drainage area at site used prior to Sept. 30, 1956, 119 mi^2.

PERIOD OF RECORD.--June 1935 to September 1956 (no winter records prior to 1939), October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,920 ft (NGVD 29). Dec. 21, 1950, to Sept. 30, 1956, water-stage recorder, and June 4, 1935, to Dec. 20, 1950, nonrecording gage at site 0.3 mi upstream at different elevation. Flow is equivalent.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	11	e13	e9.0	e11	e9.0	18	12	9.2	7.0	1.9	e1.0
2	e12	9.5	e13	e4.0	e11	e8.0	19	11	6.4	6.9	1.8	e0.80
3	e12	12	e12	e3.0	e10	e8.0	19	10	3.4	5.4	1.7	e0.80
4	e12	9.3	e12	e2.0	e10	e8.0	19	7.4	3.1	6.1	1.8	e0.80
5	e11	4.1	e12	e1.0	e10	e8.0	18	7.4	2.6	7.2	1.8	e1.0
6	e11	3.8	e12	e2.0	e10	e8.0	18	8.3	1.3	9.2	e1.5	e1.5
7	e11	3.9	e13	e3.0	e10	e8.0	18	8.4	1.3	8.7	e1.0	e1.5
8	e11	3.8	e12	e4.0	e10	e9.0	18	8.1	0.94	7.4	e0.80	e1.5
9	e12	3.5	e12	e10	e10	e10	18	9.7	1.1	7.3	e1.0	e1.6
10	e13	3.7	e11	e11	e10	e10	15	11	0.97	7.8	e0.90	e1.5
11	e13	3.5	e11	e11	e10	e10	16	12	8.5	6.4	e0.80	e1.5
12	e13	3.3	e11	e11	e10	e10	14	8.8	14	7.2	e0.90	e1.5
13	e13	2.9	e11	e10	e9.0	e9.0	15	12	11	5.9	e1.0	e1.0
14	e13	3.2	e11	e10	e9.0	e9.0	14	13	10	5.3	e1.0	e0.80
15	e13	3.0	e11	e10	e9.0	e9.0	13	12	9.3	4.4	e1.0	e0.90
16	e13	2.9	e11	e10	e9.0	e10	13	11	7.9	4.5	e0.90	e1.0
17	e13	2.9	e11	e10	e9.0	21	13	12	6.9	5.0	e0.80	e1.5
18	e13	2.3	e11	e10	e9.0	43	13	8.9	6.3	3.6	e0.70	e1.5
19	e13	1.7	e11	e10	e9.0	52	13	8.4	8.8	2.4	e0.80	e1.5
20	e13	2.0	e10	e10	e9.0	51	13	8.4	9.2	1.5	e1.0	e1.0
21	e13	2.3	e10	e9.0	e9.0	32	12	9.6	10	1.7	e1.0	e1.0
22	e13	e1.6	e10	e9.0	e9.0	27	12	8.5	9.4	1.3	e1.0	e1.0
23	e13	e1.3	e10	e9.0	e9.0	25	12	12	9.8	1.3	e0.90	e1.0
24	e13	e1.5	e10	e9.0	e9.0	24	11	13	6.6	2.8	e0.90	e1.0
25	e13	e1.7	e10	e7.0	e9.0	24	11	12	6.7	2.4	e0.80	e1.5
26	e13	e2.0	e10	e3.0	e9.0	23	9.5	11	5.6	2.5	e0.80	e1.5
27	e13	e5.0	e10	e8.0	e9.0	23	7.5	10	6.1	2.4	e0.90	e1.5
28	e13	e10	e10	e12	e9.0	22	6.9	9.6	5.8	3.5	e1.0	e1.0
29	e14	e12	e9.0	e11	e9.0	21	14	9.5	5.8	4.1	e1.0	e1.5
30	16	e13	e9.0	e11	---	20	14	9.8	5.7	3.4	e1.0	e1.5
31	13	---	e9.0	e11	---	19	---	10	---	2.8	e1.0	---
TOTAL	394	142.7	338.0	250.0	275.0	570.0	426.9	314.8	193.71	147.4	33.40	36.70
MEAN	12.7	4.76	10.9	8.06	9.48	18.4	14.2	10.2	6.46	4.75	1.08	1.22
MAX	16	13	13	12	11	52	19	13	14	9.2	1.9	1.6
MIN	11	1.3	9.0	1.0	9.0	8.0	6.9	7.4	0.94	1.3	0.70	0.80
AC-FT	781	283	670	496	545	1,130	847	624	384	292	66	73

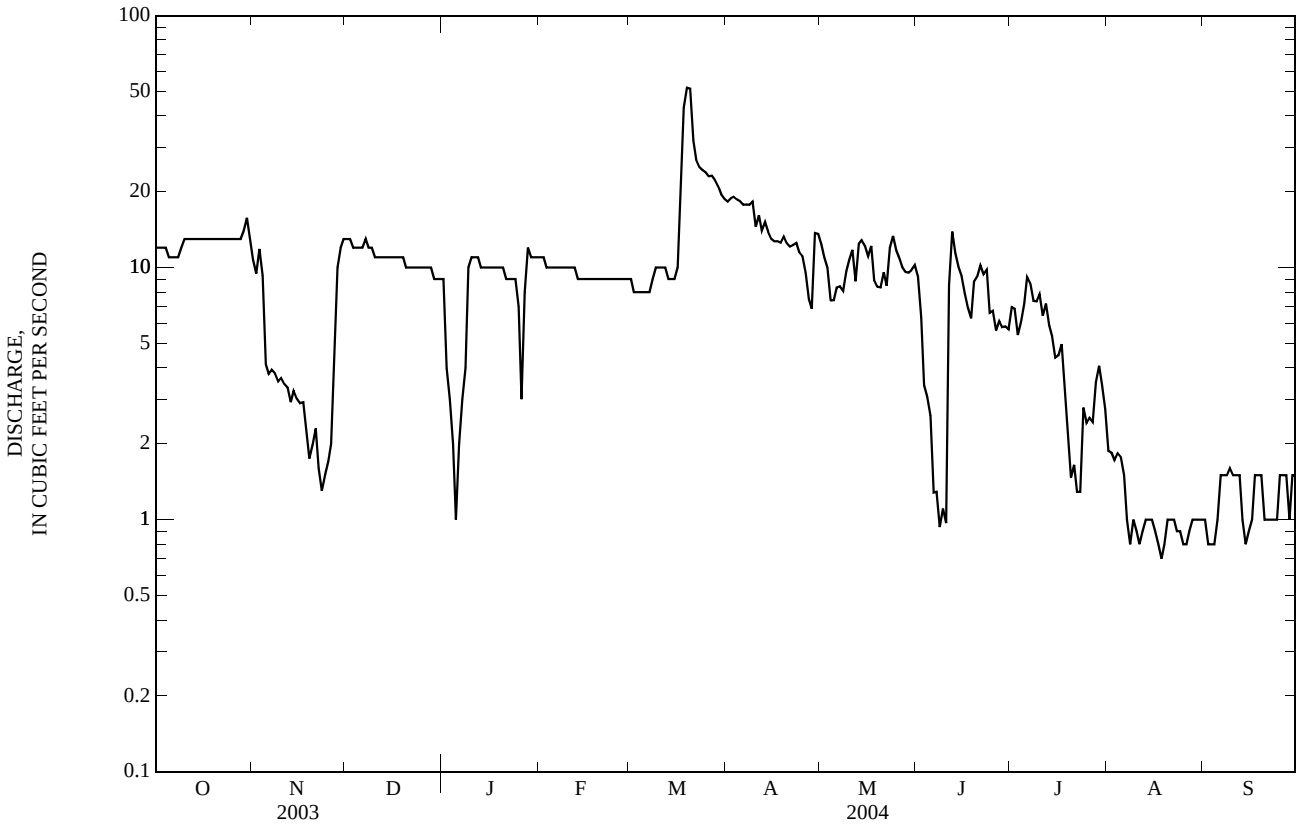
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)*

MEAN	17.3	18.0	16.5	17.6	24.7	38.4	50.5	99.1	86.0	28.7	12.7	13.1
MAX	27.8	27.9	33.6	32.3	57.8	115	106	324	375	92.6	38.5	29.1
(WY)	(1945)	(1946)	(1943)	(1984)	(1948)	(1947)	(1994)	(1984)	(1944)	(1944)	(1944)	(1944)
MIN	5.73	4.76	5.73	6.55	9.48	8.81	14.2	10.2	6.46	4.75	1.08	1.22
(WY)	(1955)	(2004)	(2002)	(2001)	(2004)	(2002)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004*	
ANNUAL TOTAL	11,643.6		3,122.61			
ANNUAL MEAN	31.9		8.53		35.2	
HIGHEST ANNUAL MEAN					76.8	1944
LOWEST ANNUAL MEAN					8.53	2004
HIGHEST DAILY MEAN	218	May 11	52	Mar 19	1,120	Jun 20, 1947
LOWEST DAILY MEAN	1.3	Nov 23	0.70	Aug 18	0.00	Sep 1, 2002
ANNUAL SEVEN-DAY MINIMUM	1.7	Nov 19	0.89	Aug 13	0.00	Sep 1, 2002
MAXIMUM PEAK FLOW			a59	Mar 19	b1,150	Jun 4, 1944
MAXIMUM PEAK STAGE			Unknown		6.96	May 9, 1995
INSTANTANEOUS LOW FLOW					0.00	Aug 3, 1935
ANNUAL RUNOFF (AC-FT)	23,100		6,190		25,520	
10 PERCENT EXCEEDS	98		13		76	
50 PERCENT EXCEEDS	12		9.0		20	
90 PERCENT EXCEEDS	3.9		1.0		8.0	

*--During period of operation (1939-56, 1983 to current year).
a--Gage height, 2.28 ft.
b--Gage height, 4.83 ft, from rating extended above 400 ft^3/s.
e--Estimated.

06290000 PASS CREEK NEAR WYOLA, MT—Continued



06290500 LITTLE BIGHORN RIVER BELOW PASS CREEK, NEAR WYOLA, MT

LOCATION.--Lat 45°10'38", long 107°23'36" (NAD 27), in W½SW¼ sec.35, T.7 S., R.35 E., Big Horn County, Hydrologic Unit 10080016, on right bank 3.5 mi north of Wyola, 6 mi downstream from Pass Creek, and at river mile 92.3.

DRAINAGE AREA.--428 mi^2.

PERIOD OF RECORD.--March 1939 to December 1958, August 1959 to September 1975, October 1976 to September 2004, discontinued. Prior to October 1940, published as Little Horn River below Pass Creek, near Wyola.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,600 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 8,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	e85	e105	e70	e70	e90	97	89	152	142	56	51
2	89	e85	e105	e70	e70	e90	100	86	136	153	57	47
3	89	e85	e100	e65	e70	e90	101	85	124	147	58	57
4	89	e85	e100	e50	e72	92	100	84	129	140	63	67
5	89	e80	e110	e65	e72	92	102	94	141	202	59	61
6	88	e70	e110	e70	e72	93	104	124	150	207	57	59
7	87	e70	e110	e75	e72	90	107	151	165	169	53	57
8	87	e75	e105	e80	e72	110	108	174	157	140	53	57
9	88	e80	e100	e80	e70	140	111	191	169	126	56	56
10	88	e90	e100	e75	e70	149	106	182	171	122	54	53
11	92	e100	e100	e70	e65	128	104	198	233	118	54	50
12	93	e100	e100	e70	e70	122	103	216	244	108	53	47
13	94	105	e100	e70	e65	124	103	202	222	110	53	56
14	95	108	e100	e70	e65	118	104	182	202	102	54	62
15	94	104	e100	e70	e65	113	105	162	188	100	53	64
16	95	104	e95	e70	e70	111	104	148	185	105	52	66
17	94	105	e95	e70	e75	114	91	152	187	95	50	71
18	95	103	e95	e70	e80	123	92	147	184	89	49	73
19	94	103	e95	e70	e80	128	95	166	184	86	47	71
20	94	e100	e95	e70	e85	129	89	178	179	83	46	84
21	94	e90	e90	e70	e80	112	86	183	175	80	46	103
22	92	e70	e90	e70	e80	103	89	201	159	79	47	91
23	90	e70	e90	e70	e80	101	86	203	144	80	49	89
24	91	e80	e90	e70	e80	101	78	189	155	82	51	89
25	93	e90	e90	e65	e85	102	79	185	156	68	51	88
26	95	e100	e90	e60	e85	103	79	164	147	59	55	84
27	96	e110	e85	e65	e90	105	74	153	146	61	59	84
28	96	e110	e80	e70	e90	102	72	152	140	73	60	89
29	e95	e105	e80	e70	e90	99	89	163	139	72	57	92
30	e90	e105	e80	e70	---	97	92	168	134	67	56	89
31	e85	---	e75	e70	---	97	---	161	---	61	55	---
TOTAL	2,839	2,767	2,960	2,150	2,190	3,368	2,850	4,933	4,997	3,326	1,663	2,107
MEAN	91.6	92.2	95.5	69.4	75.5	109	95.0	159	167	107	53.6	70.2
MAX	96	110	110	80	90	149	111	216	244	207	63	103
MIN	85	70	75	50	65	90	72	84	124	59	46	47
AC-FT	5,630	5,490	5,870	4,260	4,340	6,680	5,650	9,780	9,910	6,600	3,300	4,180

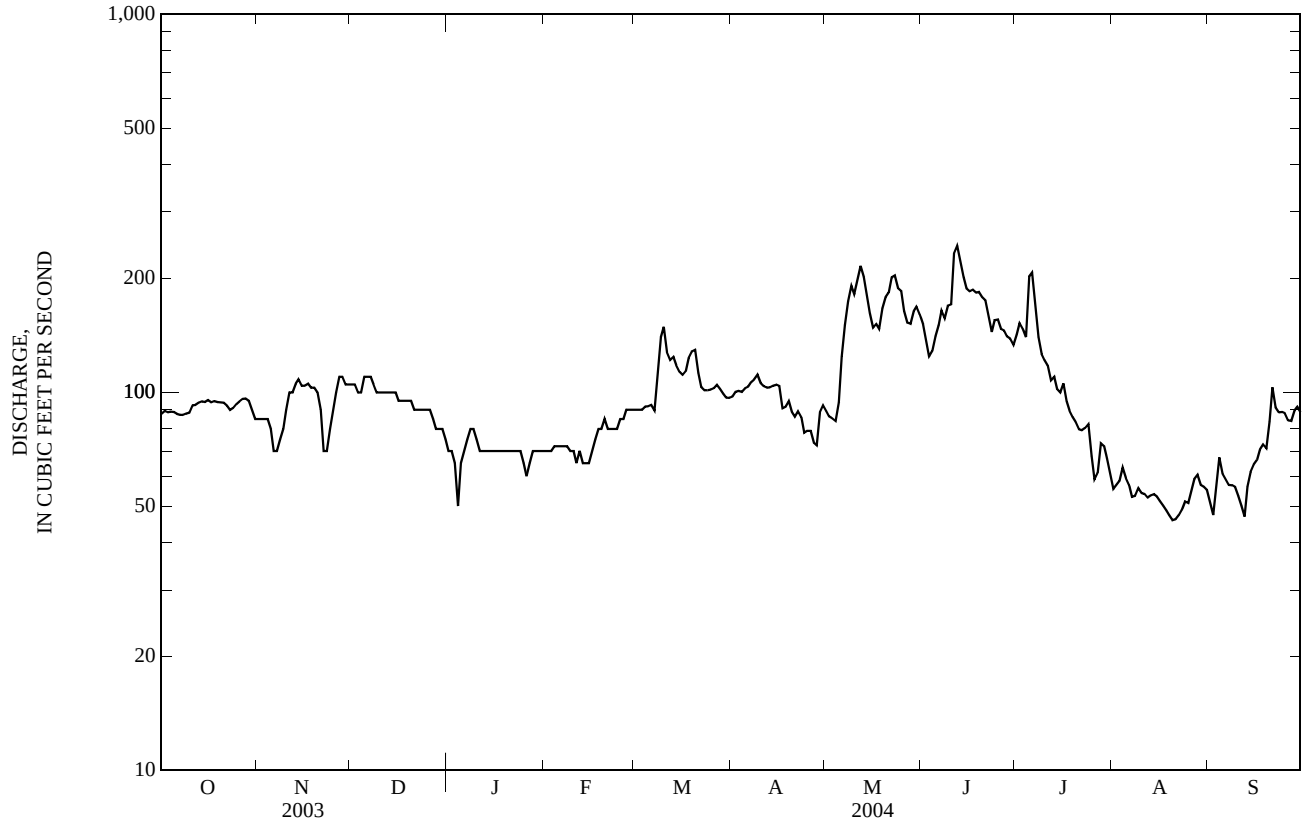
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)*

MEAN	121	118	106	104	114	139	181	459	629	230	111	108
MAX	163	153	162	165	232	281	327	1,318	1,395	758	237	186
(WY)	(1942)	(1971)	(1965)	(1975)	(1972)	(1972)	(1970)	(1978)	(1975)	(1975)	(1975)	(1968)
MIN	73.6	77.3	58.7	55.4	57.7	62.3	63.1	146	167	57.4	23.8	39.7
(WY)	(2002)	(1986)	(2002)	(1950)	(2002)	(2002)	(1961)	(1953)	(2004)	(1960)	(1961)	(2002)

06290500 LITTLE BIGHORN RIVER BELOW PASS CREEK, NEAR WYOLA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004*	
ANNUAL TOTAL	56,285		36,150			
ANNUAL MEAN	154		98.8		202	
HIGHEST ANNUAL MEAN					381	1978
LOWEST ANNUAL MEAN					88.7	2002
HIGHEST DAILY MEAN	1,090	May 30	244	Jun 12	6,090	May 19, 1978
LOWEST DAILY MEAN	35	Feb 25	46	Aug 20	13	Aug 4, 1961
ANNUAL SEVEN-DAY MINIMUM	47	Feb 22	48	Aug 17	14	Aug 3, 1961
MAXIMUM PEAK FLOW			a276	Jun 11	d8,010	May 19, 1978
MAXIMUM PEAK STAGE			b3.09	Feb 13	10.02	May 19, 1978
INSTANTANEOUS LOW FLOW			c44	Aug 20	f12	Aug 5, 1961
ANNUAL RUNOFF (AC-FT)	111,600		71,700		145,600	
10 PERCENT EXCEEDS	333		160		422	
50 PERCENT EXCEEDS	94		90		124	
90 PERCENT EXCEEDS	60		57		78	

*--During periods of operation (March 1939 to December 1958, August 1959 to September 1975, and October 1976 to September 2004).
a--Gage height, 2.52 ft.
b--Backwater from ice.
c--Gage height, 1.40 ft.
d--From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
e--Estimated.
f--Gage height, 0.89 ft.



06291500 LODGE GRASS CREEK ABOVE WILLOW CREEK DIVERSION, NEAR WYOLA, MT

LOCATION.--Lat 45°07'39", long 107°36'01" (NAD 27), in SE¼NE¼NE¼ sec.24, T.8 S., R.33 E., Big Horn County, Hydrologic Unit 10080016, on left bank 0.2 mi upstream from Willow Creek diversion canal, 1.1 mi downstream from Spring Creek, 10 mi west of Wyola, 17 mi southwest of Lodge Grass, and at river mile 43.0.

DRAINAGE AREA.--80.7 mi^2.

PERIOD OF RECORD.--March 1939 to September 1974, October 1982 to current year.

REVISED RECORDS.--WSP 1559: 1944-47. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,170 ft (NGVD 29). March 1939 to September 1974 recording gage 0.1 mi upstream at different elevation. Flows are equivalent.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 400 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	17	15	e20	18	13	16	36	50	11	5.7
2	13	14	19	14	e20	18	13	16	37	47	11	5.6
3	14	15	20	14	e20	17	14	16	42	45	15	8.5
4	14	17	20	e13	e20	16	14	18	51	44	15	8.9
5	13	16	18	e12	e20	15	14	30	58	52	12	7.7
6	12	15	20	e10	18	16	14	44	66	39	12	7.4
7	12	14	21	e11	16	11	14	46	74	34	11	7.0
8	12	15	21	e12	15	28	14	52	72	33	10	6.7
9	12	16	19	e15	15	23	15	55	67	33	10	6.0
10	12	18	16	e18	15	20	15	52	68	32	9.9	5.9
11	14	19	18	e18	14	14	15	51	74	31	9.8	5.9
12	14	19	21	e18	e13	14	14	47	69	30	9.6	5.9
13	13	18	16	e19	e14	15	15	42	62	29	8.9	8.8
14	13	18	20	e18	e15	13	14	37	60	28	9.2	10
15	13	18	21	e20	e15	13	15	34	58	27	8.6	9.6
16	13	18	20	21	15	12	15	33	55	28	7.8	8.2
17	13	18	21	21	16	12	15	31	55	25	7.8	7.8
18	13	19	19	21	19	14	16	32	54	25	8.1	6.8
19	13	18	19	21	28	14	16	35	54	24	8.1	6.6
20	14	19	21	20	21	12	15	40	49	23	7.8	11
21	14	19	20	19	19	11	15	40	48	23	7.6	12
22	14	16	20	19	18	11	14	43	46	24	8.3	10
23	14	15	19	20	18	11	14	45	49	24	7.3	10
24	15	13	19	20	18	13	14	43	57	23	7.2	10
25	15	14	19	18	18	14	13	40	56	21	7.5	9.8
26	15	13	19	19	18	15	13	37	54	21	8.7	9.5
27	15	14	19	17	18	16	12	36	53	17	8.9	9.3
28	15	15	18	e15	20	15	14	35	52	21	8.0	9.8
29	22	19	17	e16	20	14	18	41	50	15	7.4	9.8
30	20	17	15	e18	---	14	17	38	49	13	7.0	9.5
31	16	---	16	e20	---	13	---	37	---	12	6.4	---
TOTAL	435	494	588	532	516	462	434	1,162	1,675	893	286.9	249.7
MEAN	14.0	16.5	19.0	17.2	17.8	14.9	14.5	37.5	55.8	28.8	9.25	8.32
MAX	22	19	21	21	28	28	18	55	74	52	15	12
MIN	12	13	15	10	13	11	12	16	36	12	6.4	5.6
AC-FT	863	980	1,170	1,060	1,020	916	861	2,300	3,320	1,770	569	495

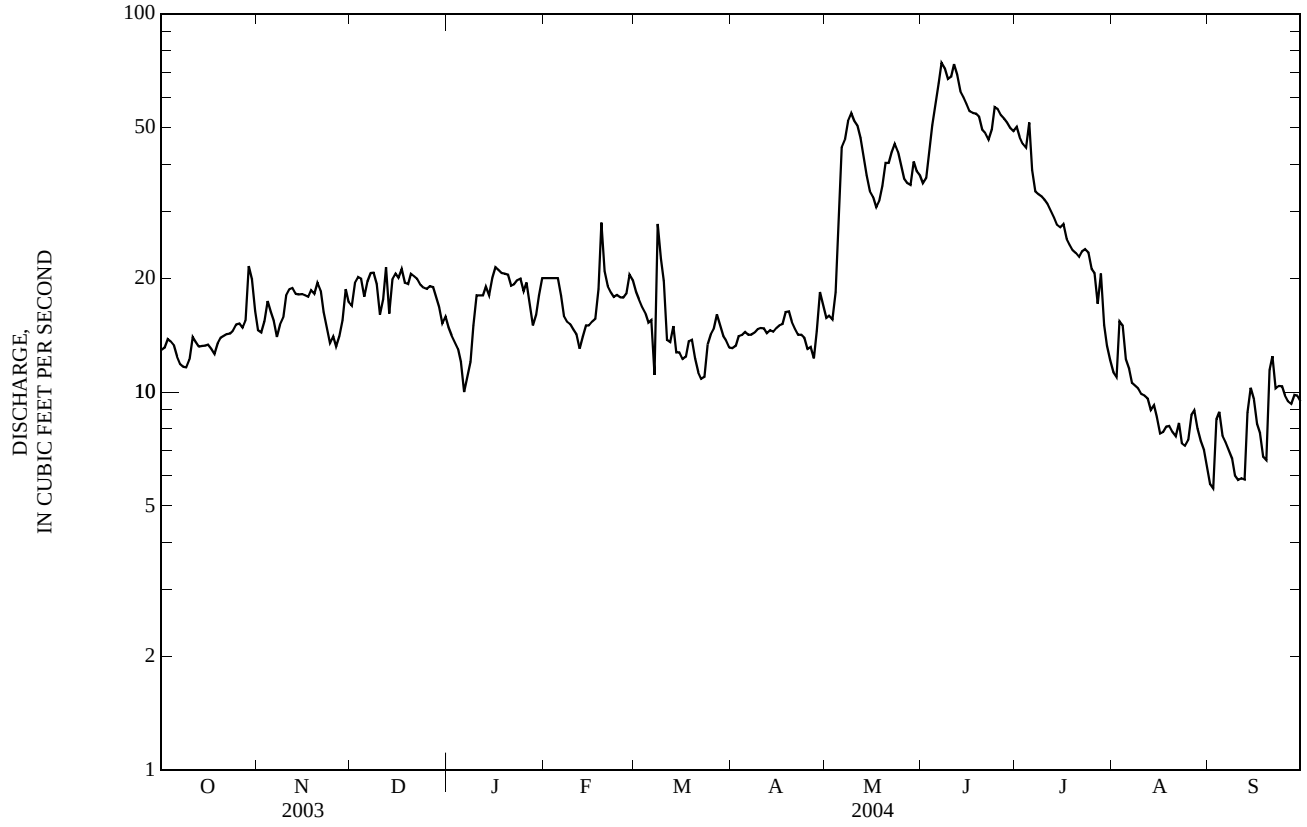
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)*

MEAN	21.0	18.9	16.8	16.6	16.8	20.3	31.4	116	193	62.4	27.5	22.0
MAX	35.5	28.0	25.0	30.3	32.0	36.9	71.4	257	445	176	50.7	40.1
(WY)	(1942)	(1943)	(1969)	(1974)	(1972)	(1972)	(1994)	(1984)	(1964)	(1964)	(1968)	(1964)
MIN	11.5	10.7	8.58	4.87	9.00	10.4	11.2	36.2	52.6	20.1	9.25	6.80
(WY)	(1961)	(1961)	(1950)	(1950)	(1940)	(1961)	(2001)	(1950)	(2001)	(1961)	(2004)	(2002)

06291500 LODGE GRASS CREEK ABOVE WILLOW CREEK DIVERSION, NEAR WYOLA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004*	
ANNUAL TOTAL	15,373.0		7,727.6			
ANNUAL MEAN	42.1		21.1		47.0	
HIGHEST ANNUAL MEAN					85.6	1970
LOWEST ANNUAL MEAN					21.1	2004
HIGHEST DAILY MEAN	371	May 30	74	Jun 7	908	Jun 9, 1964
LOWEST DAILY MEAN	5.0	Feb 24	5.6	Sep 2	2.7	Apr 6, 2001
ANNUAL SEVEN-DAY MINIMUM	9.6	Feb 23	6.4	Sep 6	3.0	Apr 13, 2001
MAXIMUM PEAK FLOW			87	Jun 11	a1,130	Jun 9, 1964
MAXIMUM PEAK STAGE			2.54	Jun 11	6.14	Jun 9, 1964
ANNUAL RUNOFF (AC-FT)	30,490		15,330		34,030	
10 PERCENT EXCEEDS	91		45		113	
50 PERCENT EXCEEDS	19		16		22	
90 PERCENT EXCEEDS	13		9.3		13	

*--During period of operation (1940-74, 1983 to current year).
a--From rating curve extended above 600 ft^3/s.
e--Estimated.



06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT

LOCATION.--Lat 45°44'09", long 107°33'24" (NAD 27), in SE¼NE¼NE¼ sec.19, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream from terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA.--1,294 mi^2.

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--WDR MT-86-1: 1978.

GAGE.--Water-stage recorder. Elevation of gage is 2,882.29 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Oct. 7, 1953, nonrecording gage at site 0.4 mi downstream. Oct. 7, 1953 to May 6, 1963, water-stage recorder at site 0.3 mi downstream. May 6, 1963 to Nov. 6, 1963, nonrecording gage at site 0.4 mi downstream. All at different elevations. Nov. 7, 1963 to Aug. 15, 1976, water-stage recorder at site 35 ft downstream at present elevation. Aug. 15, 1976 to Sept. 30, 1979, water-stage recorders were located on each bank downstream from Sarpy Road bridge and were used depending on control conditions.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation of 20,980 acres upstream from station. Discharge values given herein include flow of terminal wasteway of Agency Canal. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	e100	e130	e100	e100	289	108	37	109	79	59	51
2	87	e100	e140	e90	e100	266	107	43	109	70	51	49
3	84	e95	e140	e80	e110	214	108	43	82	64	48	51
4	88	e95	e130	e80	e120	191	110	36	66	69	55	56
5	90	e90	e110	e70	e120	183	110	34	59	80	51	53
6	92	e100	e130	e60	e120	169	109	33	67	149	61	67
7	98	e100	e130	e70	e120	174	109	30	78	177	60	76
8	100	e100	e130	e100	e130	189	110	49	76	162	62	77
9	97	e110	e120	e90	e120	168	113	79	86	125	57	68
10	97	e120	e110	e90	e110	191	114	108	90	98	53	69
11	98	e130	e100	e90	e100	197	117	126	154	83	52	71
12	93	e130	e100	e90	e110	198	112	130	195	67	53	69
13	97	e120	e120	e90	e120	185	110	146	238	56	52	68
14	97	e120	e130	e90	e130	170	109	149	220	42	52	71
15	113	e120	e110	e90	e140	161	108	136	228	37	49	77
16	108	e130	e110	e90	e140	160	107	119	211	28	43	82
17	107	e130	e110	e100	e140	150	107	109	190	30	34	84
18	108	136	e110	e100	e140	149	105	86	176	48	40	83
19	107	132	e110	e100	e140	153	96	90	174	52	49	80
20	107	e130	e110	e100	e150	160	91	84	168	40	46	99
21	104	e110	e110	e100	e170	e150	95	100	164	34	49	122
22	103	e90	e110	e110	e200	152	99	101	165	32	41	140
23	105	e80	e120	e120	e250	134	94	155	161	26	42	142
24	105	e90	e120	e130	e300	126	89	136	138	25	42	125
25	101	e100	e120	e100	e350	122	83	124	118	49	43	105
26	103	e110	e120	e90	403	122	74	118	121	61	40	87
27	108	e120	e110	e80	395	123	67	114	117	44	40	80
28	111	e130	e100	e80	387	120	67	106	105	39	50	74
29	123	e150	e100	e90	342	119	69	95	88	41	50	69
30	e120	e130	e100	e100	---	116	38	95	77	46	55	75
31	e100	---	e100	e100	---	112	---	104	---	58	56	---
TOTAL	3,128	3,398	3,590	2,870	5,257	5,113	2,935	2,915	4,030	2,011	1,535	2,420
MEAN	101	113	116	92.6	181	165	97.8	94.0	134	64.9	49.5	80.7
MAX	123	150	140	130	403	289	117	155	238	177	62	142
MIN	77	80	100	60	100	112	38	30	59	25	34	49
AC-FT	6,200	6,740	7,120	5,690	10,430	10,140	5,820	5,780	7,990	3,990	3,040	4,800

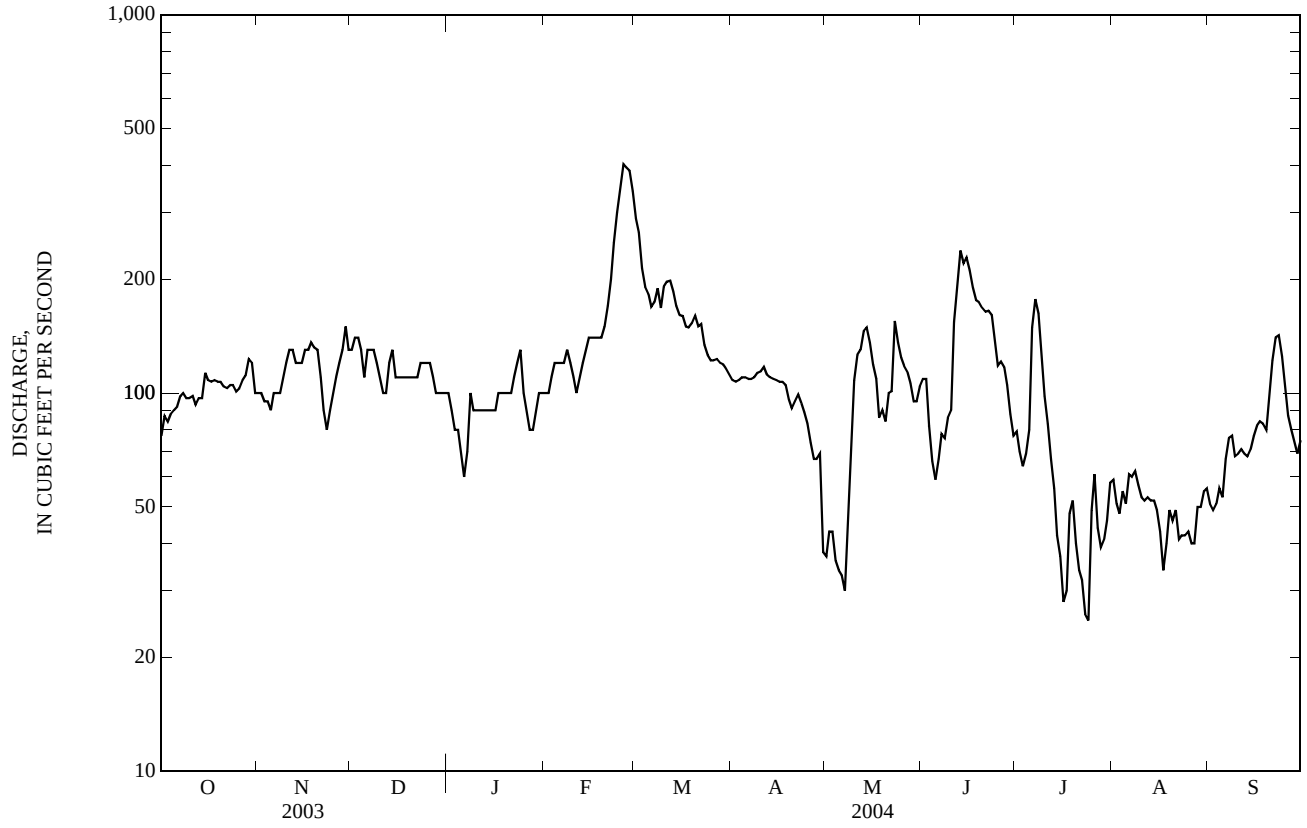
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2004, BY WATER YEAR (WY)

MEAN	153	152	134	139	200	309	309	601	807	260	117	126
MAX	276	248	223	366	610	987	748	2,852	1,981	1,333	382	267
(WY)	(1979)	(1979)	(1979)	(1975)	(1971)	(1972)	(1965)	(1978)	(1968)	(1975)	(1975)	(1978)
MIN	60.7	82.6	65.6	71.6	70.3	71.1	54.8	71.9	117	8.50	2.46	19.1
(WY)	(2002)	(2002)	(2002)	(1988)	(1989)	(2002)	(1961)	(1961)	(1961)	(1961)	(1961)	(1960)

06294000 LITTLE BIGHORN RIVER NEAR HARDIN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1954 - 2004	
ANNUAL TOTAL	67,087		39,202			
ANNUAL MEAN	184		107		275	
HIGHEST ANNUAL MEAN					676	1975
LOWEST ANNUAL MEAN					70.4	1961
HIGHEST DAILY MEAN	1,220	Jun 1	403	Feb 26	15,800	May 20, 1978
LOWEST DAILY MEAN	29	Jul 31	a25	Jul 24	0.30	Aug 5, 1961
ANNUAL SEVEN-DAY MINIMUM	32	Jul 29	37	May 1	0.40	Aug 3, 1961
MAXIMUM PEAK FLOW			b427	Feb 26	d22,600	May 19, 1978
MAXIMUM PEAK STAGE			c4.86	Jan 19	f11.78	Mar 20, 1960
INSTANTANEOUS LOW FLOW					g0.20	Aug 7, 1961
ANNUAL RUNOFF (AC-FT)	133,100		77,760		199,500	
10 PERCENT EXCEEDS	391		161		598	
50 PERCENT EXCEEDS	108		100		160	
90 PERCENT EXCEEDS	70		49		74	

a--Includes Agency Canal.
b--Gage height, 3.30 ft.
c--Backwater from ice.
d--Gage height, 11.20 ft.
e--Estimated.
f--Site and elevation then in use.
g--Result of discharge measurement.



06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT

LOCATION.--Lat 46°07'29", long 107°28'06" (NAD 27), in SE¼SE¼NE¼ sec.3, T.4 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank 1.9 mi upstream from Tullock Creek, 3.6 mi southwest of Bighorn, 4.5 mi southeast of Custer, and at river mile 3.0.

DRAINAGE AREA.--22,414 mi^2. Area at site used Oct. 7, 1955, to Sept. 30, 1981, 22,885 mi^2.

PERIOD OF RECORD.--October 1981 to current year. Previously published as "06294700 Bighorn River at Bighorn, MT" 1956-81, and as "near Custer" 1945-55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft (NGVD 29). May 11, 1945 to Dec. 6, 1945, nonrecording gage, and Dec. 7, 1945 to Oct. 6, 1955, water-stage recorder 1.7 mi upstream at different elevation. Oct. 7, 1955 to Sept. 30, 1981, at site 2.3 mi downstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Bighorn Lake beginning November 1965 (usable capacity, 1,312,000 acre-ft). Major regulation prior to November 1965 by 14 reservoirs in Wyoming and 1 in Montana with combined usable capacity of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	1,340	1,600	e1,600	e1,500	1,850	1,700	1,450	1,410	1,590	1,640	1,060
2	1,150	1,330	1,600	e1,550	e1,500	1,810	1,700	1,240	1,350	1,570	1,690	1,150
3	1,140	1,330	1,620	e1,500	e1,500	1,770	1,700	1,190	1,330	1,380	1,670	1,240
4	1,140	1,340	1,720	e1,400	e1,500	1,760	1,700	1,140	1,310	1,390	1,710	1,350
5	1,120	1,320	1,710	e1,300	e1,500	1,740	1,690	1,110	1,360	1,430	1,680	1,370
6	1,110	1,280	1,720	e1,400	e1,500	1,760	1,680	1,090	1,350	1,590	1,670	1,220
7	1,090	1,290	1,760	e1,500	e1,500	1,740	1,660	1,100	1,300	1,650	1,650	1,200
8	1,090	1,300	1,800	e1,550	e1,600	1,800	1,700	1,130	1,200	1,590	1,590	1,270
9	1,030	1,340	1,810	e1,600	e1,500	1,790	1,700	1,160	1,150	1,500	1,580	1,400
10	989	1,370	1,820	e1,600	e1,500	1,880	1,690	1,220	1,220	1,460	1,520	1,380
11	976	1,390	1,770	e1,650	e1,450	1,850	1,700	1,280	2,420	1,420	1,500	1,380
12	939	1,400	1,600	e1,700	e1,400	1,850	1,690	1,350	2,420	1,340	1,490	1,380
13	923	1,380	1,620	e1,700	e1,400	1,810	1,550	1,430	2,180	1,210	1,490	1,400
14	930	1,390	1,660	e1,750	e1,400	1,780	1,650	1,440	2,180	1,250	1,480	1,440
15	938	1,420	1,710	e1,800	e1,450	1,770	1,640	1,420	2,070	1,270	1,460	1,440
16	983	1,410	1,710	e1,850	e1,500	1,740	1,580	1,400	2,000	1,240	1,460	1,480
17	938	1,420	1,740	e1,850	e1,500	1,730	1,520	1,470	1,990	1,260	1,400	1,530
18	959	1,430	1,750	e1,900	e1,500	1,740	1,540	1,470	1,940	1,340	1,370	1,500
19	943	1,440	1,760	e1,950	e1,500	1,730	1,520	1,550	1,920	1,390	1,350	1,510
20	1,490	1,470	1,800	e1,950	e1,500	1,730	1,390	1,500	1,920	1,460	1,370	1,540
21	1,430	1,500	e1,800	e2,000	e1,500	1,740	1,420	1,500	1,920	1,460	1,320	1,630
22	1,230	e1,450	e1,800	e2,050	e1,500	1,740	1,470	1,620	1,840	1,480	1,300	1,490
23	e1,150	e1,350	e1,800	e2,100	1,790	1,720	1,400	1,790	1,890	1,510	1,260	1,470
24	1,210	e1,400	e1,800	e2,150	1,750	1,710	1,270	1,840	1,830	1,530	1,140	1,430
25	1,240	1,450	e1,800	e2,150	1,740	1,700	1,380	1,810	1,730	1,550	1,090	1,390
26	1,260	1,490	e1,800	e2,100	1,750	1,700	1,440	1,740	1,730	1,560	1,120	1,350
27	1,270	1,510	e1,800	e2,000	1,820	1,730	1,460	1,670	1,740	1,530	1,130	1,320
28	1,290	1,530	e1,750	e1,400	1,840	1,700	1,390	1,530	1,710	1,550	1,140	1,310
29	1,360	1,560	e1,750	e1,500	1,920	1,690	1,490	1,470	1,650	1,610	1,160	1,300
30	1,340	1,590	e1,700	e1,500	---	1,700	1,480	1,440	1,580	1,600	1,140	1,260
31	1,340	---	e1,650	e1,500	---	1,710	---	1,440	---	1,590	1,090	---
TOTAL	35,158	42,220	53,730	53,550	45,310	54,470	46,900	43,990	51,640	45,300	43,660	41,190
MEAN	1,134	1,407	1,733	1,727	1,562	1,757	1,563	1,419	1,721	1,461	1,408	1,373
MAX	1,490	1,590	1,820	2,150	1,920	1,880	1,700	1,840	2,420	1,650	1,710	1,630
MIN	923	1,280	1,600	1,300	1,400	1,690	1,270	1,090	1,150	1,210	1,090	1,060
AC-FT	69,740	83,740	106,600	106,200	89,870	108,000	93,030	87,250	102,400	89,850	86,600	81,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2004, BY WATER YEAR (WY)

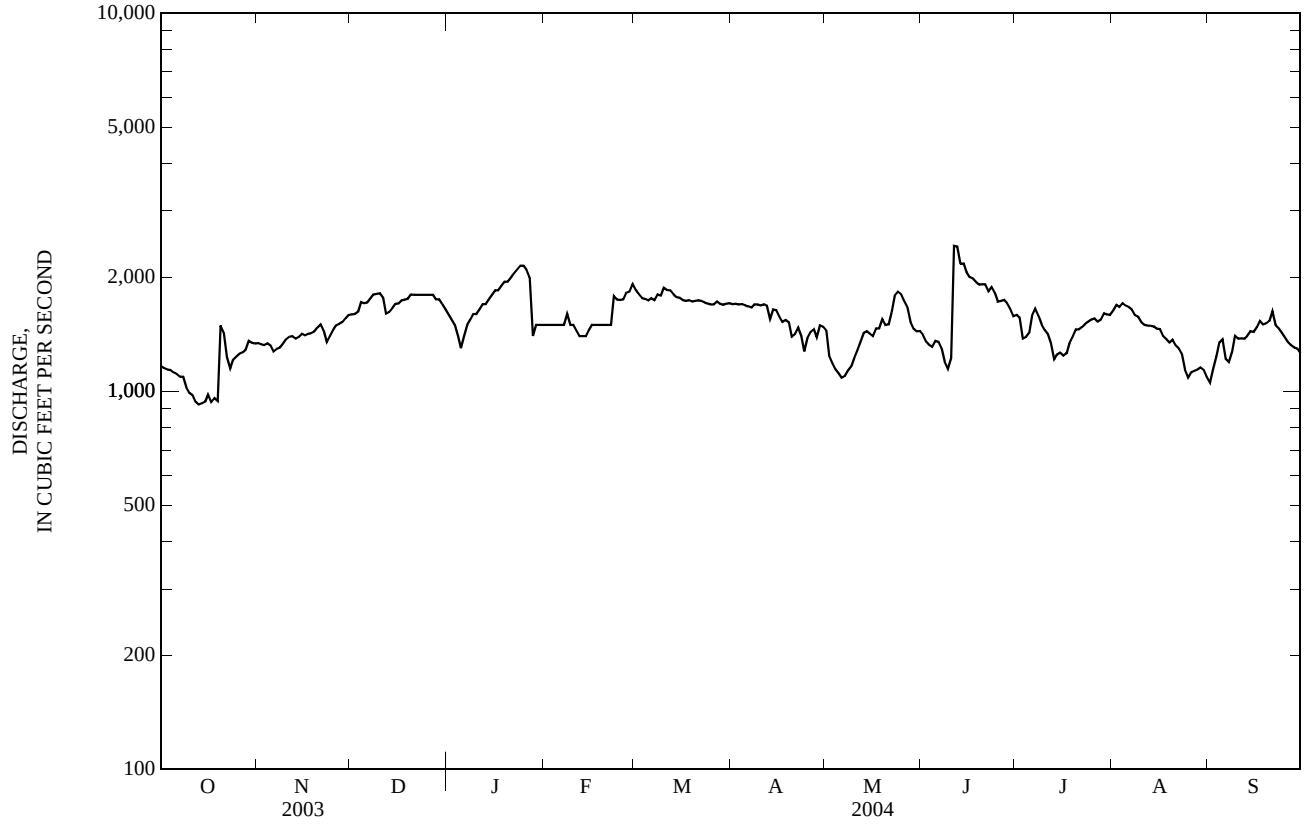
MEAN	3,180	3,250	3,103	2,993	3,156	3,644	3,497	4,315	6,822	5,228	2,816	2,807
MAX	5,546	5,599	4,907	5,478	5,314	6,580	7,881	9,102	15,180	19,090	6,972	4,952
(WY)	(1972)	(1974)	(1968)	(1968)	(1971)	(1972)	(1997)	(1947)	(1948)	(1967)	(1997)	(1973)
MIN	1,103	1,223	1,280	1,382	1,544	908	1,063	1,304	1,050	707	868	1,009
(WY)	(2003)	(1978)	(1961)	(1961)	(2003)	(1966)	(1966)	(1966)	(1966)	(1960)	(1961)	(1966)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1945 - 2004	
ANNUAL TOTAL	554,328		557,118			
ANNUAL MEAN	1,519		1,522		3,717	
HIGHEST ANNUAL MEAN					5,594	1997
LOWEST ANNUAL MEAN					1,474	2003
HIGHEST DAILY MEAN	2,450	Jun 1	2,420	Jun 11	50,000	May 20, 1978
LOWEST DAILY MEAN	923	Oct 13	923	Oct 13	400	Apr 4, 1967
ANNUAL SEVEN-DAY MINIMUM	944	Oct 12	944	Oct 12	528	May 6, 1961
MAXIMUM PEAK FLOW			a2,910	Jun 11	d59,200	May 20, 1978
MAXIMUM PEAK STAGE			b6.14	Jan 9	14.15	May 20, 1978
INSTANTANEOUS LOW FLOW			c915	Oct 13	f275	Nov 15, 1959
ANNUAL RUNOFF (AC-FT)	1,100,000		1,105,000		2,693,000	
10 PERCENT EXCEEDS	1,800		1,810		6,220	
50 PERCENT EXCEEDS	1,490		1,500		3,130	
90 PERCENT EXCEEDS	1,280		1,160		1,620	

06294500 BIGHORN RIVER ABOVE TULLOCK CREEK, NEAR BIGHORN, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1946 - 1961 *		WATER YEARS 1967 - 2004**	
ANNUAL MEAN	3,358		3,745	
HIGHEST ANNUAL MEAN	5,501	1947	5,594	1997
LOWEST ANNUAL MEAN	1,623	1961	1,474	2003
HIGHEST DAILY MEAN	25,700	Jun 23, 1947	50,000	May 20, 1978
LOWEST DAILY MEAN	462	May 12, 1961	400	Apr 4, 1967
ANNUAL SEVEN-DAY MINIMUM	528	May 6, 1961	843	Nov 18, 1977
MAXIMUM PEAK FLOW	g26,200	Jun 24, 1947	d59,200	May 20, 1978
MAXIMUM PEAK STAGE	10.65	May 20, 1947	14.15	May 20, 1978
INSTANTANEOUS LOW FLOW	f275	Nov 15, 1959		
ANNUAL RUNOFF (AC-FT)	2,578,000		2,713,000	
10 PERCENT EXCEEDS	6,200		6,170	
50 PERCENT EXCEEDS	2,810		3,320	
90 PERCENT EXCEEDS	1,500		1,710	

*Prior to construction of Yellowtail Dam.
**--After completion of Yellowtail Dam.
a--Gage height, 1.92 ft.
b--Backwater from ice.
c--Gage height, 0.12 ft.
d--Gage height, 14.50 ft, at different site and datum.
e--Estimated.
f--About, result of freezeup.
g--Gage height, 8.79 ft, at different site and datum.



06295000 YELLOWSTONE RIVER AT FORSYTH, MT

LOCATION.--Lat 46°15'58", long 106°41'24" (NAD 27), in NE¼NW¼NW¼ sec.23, T.6 N., R.40 E., Rosebud County, Hydrologic Unit 10100001, on right bank 0.3 mi downstream from U.S. Highway 12 bridge, at Forsyth, and at river mile 238.2.

DRAINAGE AREA.--40,146 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 16, 1921 to September 30, 1923 (no winter records), October 1977 to current year. Miscellaneous discharge measurements were made in 1974 to 1976 and are available in files of Helena district office.

REVISED RECORDS.--WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,504.62 ft (NGVD 29), from nearby elevation determined by City of Forsyth. July 1921 to March 1922, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at different elevation. March 1922 to September 1923, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at elevation 2 ft higher.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 838,000 acres upstream from station. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, revised, on Bighorn River. Small diversion dam about 4,200 ft downstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 20 ft, elevation used in 1921, information from local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,500	4,990	e4,100	e4,300	e3,500	e4,300	4,380	5,050	10,500	15,000	5,980	4,390
2	3,610	5,040	e4,300	e3,700	e3,400	e4,400	4,280	5,050	9,450	15,800	5,840	4,060
3	3,640	4,730	e4,300	e3,700	e3,400	e4,400	4,460	4,270	8,330	15,500	5,630	4,070
4	3,590	e4,300	e4,200	e4,000	e3,900	e4,500	4,780	3,920	7,710	14,900	5,380	4,250
5	3,560	e4,500	e4,200	e3,900	e3,600	e4,500	5,110	3,950	7,940	14,300	5,380	4,600
6	3,540	e4,500	e4,200	e3,600	e3,600	e4,500	5,080	5,020	9,750	15,000	5,630	4,740
7	3,490	e4,500	e4,200	e3,300	e3,900	4,600	4,970	7,070	13,400	16,000	5,380	4,710
8	3,480	e4,200	e4,100	e3,300	e4,000	4,650	5,290	9,500	17,500	14,700	5,180	4,550
9	3,470	e4,100	e4,200	e3,400	e4,000	4,860	5,650	10,600	19,500	13,700	5,030	4,460
10	3,420	e4,100	e4,400	e3,600	e4,000	4,770	6,010	10,900	18,500	13,400	4,840	4,460
11	3,540	e4,200	e4,400	e4,000	e4,000	4,850	6,530	10,600	21,100	12,400	4,550	4,350
12	3,710	e4,400	e4,500	e4,300	e4,000	5,060	6,470	9,840	29,200	11,300	4,260	4,260
13	3,840	e4,600	e4,500	e4,400	e3,800	5,110	6,000	9,550	26,300	10,600	4,050	4,240
14	3,990	4,700	e4,300	e4,500	e3,400	4,900	5,650	9,300	22,500	9,890	3,800	4,440
15	4,090	4,670	e4,300	e4,500	e3,200	4,800	5,500	8,090	19,400	9,270	3,670	4,610
16	4,220	4,640	e4,400	e4,500	e3,400	4,670	5,630	7,180	17,200	8,700	3,590	4,630
17	4,260	4,600	e4,500	e4,500	e3,600	4,570	6,060	6,540	16,200	8,460	3,470	4,890
18	4,180	4,590	4,550	e4,500	e3,800	4,500	6,130	6,090	15,600	8,290	3,320	5,270
19	4,140	4,580	4,520	e4,500	e4,000	4,460	5,770	5,990	14,700	7,980	3,200	5,190
20	4,170	4,570	4,570	e4,600	e4,200	4,440	5,370	5,950	14,000	7,610	3,230	5,420
21	4,610	4,700	4,600	e4,600	e4,200	4,500	5,330	6,000	13,600	7,550	3,410	5,630
22	4,440	4,700	4,600	e4,600	e4,200	4,520	5,320	6,850	13,400	8,290	3,530	5,800
23	4,270	e4,600	4,690	e4,600	e4,200	4,590	4,970	7,400	12,900	7,960	3,450	5,960
24	4,000	e4,200	4,650	e4,600	e4,200	4,530	4,700	8,300	12,900	7,810	3,360	6,080
25	4,170	e4,000	e4,500	e4,600	e4,200	4,430	4,370	9,540	13,600	7,850	3,280	5,880
26	4,180	e4,000	e4,500	e4,600	e4,200	4,500	4,330	9,600	15,200	7,530	3,310	5,710
27	4,240	e3,900	e4,400	e4,500	e4,200	4,670	4,190	8,720	16,600	7,000	3,650	5,690
28	4,270	e3,900	e4,600	e4,500	e4,200	4,810	3,970	7,920	16,900	6,610	4,000	5,810
29	4,480	e4,000	e4,600	e4,400	e4,200	4,800	3,860	7,610	16,400	6,490	5,090	5,660
30	4,570	e4,000	e4,100	e4,000	---	4,700	4,080	7,970	15,300	6,310	5,110	5,570
31	4,740	---	e4,200	e3,500	---	4,540	---	10,300	---	6,110	4,760	---
TOTAL	123,410	132,510	136,180	129,600	112,500	143,430	154,240	234,670	465,580	322,310	134,360	149,380
MEAN	3,981	4,417	4,393	4,181	3,879	4,627	5,141	7,570	15,520	10,400	4,334	4,979
MAX	4,740	5,040	4,690	4,600	4,200	5,110	6,530	10,900	29,200	16,000	5,980	6,080
MIN	3,420	3,900	4,100	3,300	3,200	4,300	3,860	3,920	7,710	6,110	3,200	4,060
AC-FT	244,800	262,800	270,100	257,100	223,100	284,500	305,900	465,500	923,500	639,300	266,500	296,300

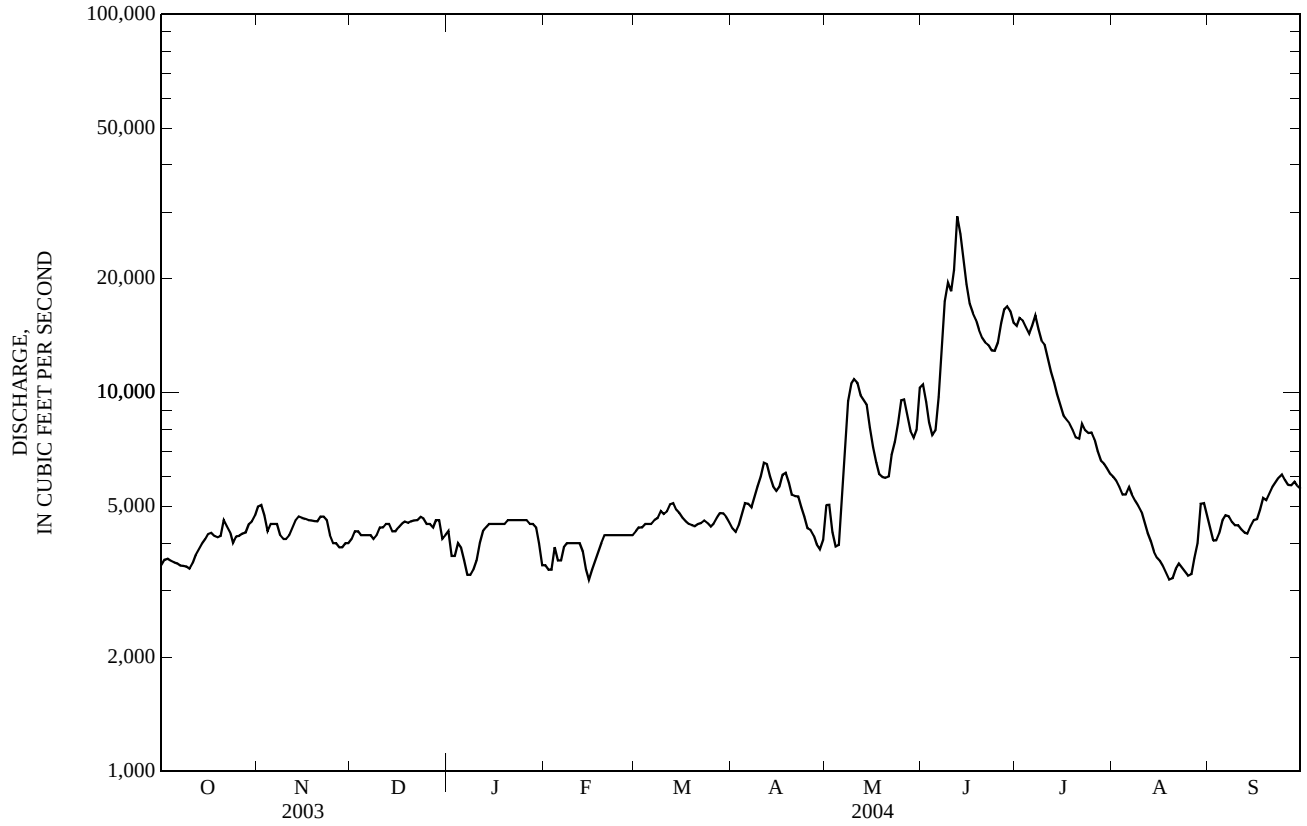
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	7,256	6,804	5,954	5,580	5,970	6,959	7,562	16,760	29,130	17,660	7,850	6,761
MAX	10,720	10,490	8,927	7,796	10,210	15,120	13,270	27,850	63,710	34,430	17,570	11,320
(WY)	(1983)	(1983)	(1983)	(1983)	(1997)	(1979)	(1997)	(1997)	(1997)	(1982)	(1997)	(1978)
MIN	3,519	4,186	3,624	3,242	3,511	3,223	4,220	7,570	14,690	6,135	2,742	2,723
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1981)	(2004)	(1987)	(1988)	(2001)	(2001)

06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	2,753,190		2,238,170			
ANNUAL MEAN	7,543		6,115		10,360	
HIGHEST ANNUAL MEAN					17,590	1997
LOWEST ANNUAL MEAN					6,026	2001
HIGHEST DAILY MEAN	49,100	Jun 3	29,200	Jun 12	97,000	May 21, 1978
LOWEST DAILY MEAN	2,700	Jan 24	3,200	Feb 15	1,400	Nov 23, 1977
ANNUAL SEVEN-DAY MINIMUM	3,190	Jan 22	3,350	Aug 19	2,030	Aug 26, 2001
MAXIMUM PEAK FLOW			a30,800	Jun 12	106,000	May 21, 1978
MAXIMUM PEAK STAGE			b6.93	Nov 25	14.53	May 21, 1978
ANNUAL RUNOFF (AC-FT)	5,461,000		4,439,000		7,507,000	
10 PERCENT EXCEEDS	14,900		11,000		21,800	
50 PERCENT EXCEEDS	4,400		4,590		7,100	
90 PERCENT EXCEEDS	3,480		3,630		4,240	

a--Gage height, 6.43 ft.
b--Backwater from ice.
e--Estimated.



06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

WATER-QUALITY DATA

PERIOD OF RECORD.--Water years 1974 to 1982, January 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: March 1978 to September 1979 (seasonal records).
SUSPENDED-SEDIMENT DISCHARGE: March 1978 to September 1981.

REMARKS.--Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum observed, 26.0°C, July 27, 1978, Aug. 3 and 7, 1979.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily mean, 4,010 mg/L, May 19, 1978; minimum daily mean 5 mg/L, Dec. 23, 1979.
SEDIMENT LOAD: Maximum daily, 761,000 tons, May 20, 1978; minimum daily 74 tons, Apr. 18, 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
OCT													
10...	0830	5,280	693	8.7	94	8.4	619	8.5	14.0	152	142	172	1
NOV													
21...	1330	5,380	695	13.7	110	7.2	642	-1.0	2.5	163	144	176	--
DEC													
17...	1600	E4,500	705	13.2	98	8.2	649	6.5	0.0	162	182	222	--
JAN													
23...	1000	E4,600	693	10.8	81	8.5	664	8.5	0.0	156	196	239	--
FEB													
25...	1700	E4,200	698	12.1	91	7.5	659	10.0	0.0	143	146	177	.0
MAR													
24...	1500	4,520	687	10.7	107	8.2	679	23.5	11.0	159	152	176	5
MAY													
26...	1100	9,640	678	9.7	105	7.8	439	20.5	13.5	108	111	135	--
JUN													
15...	1200	19,300	696	9.2	105	7.9	300	22.0	17.5	80	74	91	--
JUL													
15...	1000	9,420	685	8.8	116	8.3	356	31.0	23.5	95	85	101	1
AUG													
27...	1030	3,610	701	9.2	104	8.4	647	23.5	17.0	153	133	145	8
SEP													
08...	1200	4,550	696	9.6	108	8.4	616	21.5	16.5	153	137	165	1

E--Estimated.

06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 10...	9.05	158	<.04	.08	<.008	.42	<.006	.027	16	228
NOV 21...	9.08	163	<.04	.35	E.005	.62	<.006	.027	16	232
DEC 17...	8.96	167	E.03	.51	E.005	.71	<.006	.021	15	E182
JAN 23...	9.04	168	<.04	.51	E.004	.75	<.006	.014	4	E49.7
FEB 25...	8.89	175	.06	.39	E.007	.96	.006	.100	88	E998
MAR 24...	9.90	181	<.04	.37	.012	.86	<.006	.069	48	586
MAY 26...	6.29	102	E.02	.29	.016	.46	.012	.23	218	5,670
JUN 15...	3.69	55.0	<.04	.20	.010	.39	.013	.30	318	16,600
JUL 15...	5.08	72.7	<.04	.09	<.008	.37	<.006	.071	55	1,400
AUG 27...	9.46	170	<.04	E.03	<.008	.41	<.006	.045	23	224
SEP 08...	8.50	150	<.04	.15	E.005	.52	<.006	.056	37	455

Date	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)
NOV 21...	<.006	E.004	<.006	<.005	<.005	E.007	<.050	<.010	<.004	E.005	<.020	<.005	<.006
JAN 23...	<.006	<.006	<.006	<.005	<.005	E.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006
MAR 24...	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
MAY 26...	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
JUN 15...	<.006	<.006	<.006	<.005	<.005	<.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006
JUL 15...	<.006	<.006	<.006	<.005	<.005	.017	<.050	<.010	<.004	<.041	<.020	<.005	<.006
AUG 27...	<.006	<.010	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005	<.006
SEP 08...	<.006	<.006	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005	<.006

E--Estimated.

06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulfinyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Desulfinyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)
NOV													
21...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
JAN													
23...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
MAR													
24...	<.018	<.003	<.012	<.005	<.009	<.02	<.020	<.009	<.005	<.029	<.013	<.024	<.016
MAY													
26...	<.018	<.003	<.012	<.005	<.009	<.02	.016	<.009	<.005	<.029	<.013	<.024	<.016
JUN													
15...	<.018	<.003	<.012	<.005	<.009	<.02	<.106	<.009	<.005	<.029	<.013	<.024	<.016
JUL													
15...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
AUG													
27...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
SEP													
08...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016

Date	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)
NOV													
21...	<.003	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JAN													
23...	<.003	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022
MAR													
24...	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022
MAY													
26...	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JUN													
15...	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JUL													
15...	<.003	<.004	<.035	<.027	<.015	.023	<.006	<.003	<.007	<.003	<.010	<.004	<.022
AUG													
27...	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007	<.003	<.010	<.004	<.022
SEP													
08...	<.003	<.004	<.035	<.027	<.015	.016	<.006	<.003	<.007	<.003	<.010	<.004	<.022

Date	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)
NOV													
21...	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.006	<.009
JAN													
23...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
MAR													
24...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.004	<.009
MAY													
26...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.008	<.009
JUN													
15...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.003	<.009
JUL													
15...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
AUG													
27...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
SEP													
08...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009

E--Estimated.

451302106583201 ROSEBUD CREEK NEAR ROSEBUD BATTLEFIELD, NEAR KIRBY, MT

LOCATION.--Lat 45°13'02", long 106°58'32" (NAD 27), NE¼SE¼ sec. 20, T.7S., R.39E., Bighorn County, Hydrologic Unit 10100003, at farm road crossing, on Kobold Ranch 0.1 mi south of county road, and about 15 mi south of Busby.

DRAINAGE AREA.--28.9 mi^2.

PERIOD OF RECORD.--May 2003 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 4,270 ft (NGVD 29).

REMARKS.--Due to extensive ponding of water by beaver dams, actual sampling location was upstream at Rosebud Battlefield.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 04...	1400	.10	1.35	651	8.2	102	7.8	1,400	26.0	18.0	800	137	112

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 04...	7.58	.6	38.4	9	399	4.94	.5	12.4	377	930	1.26	.25	E.006

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 04...	<.016	<.002	.38	E.004	.017	<2	48	73	<.04	<.8	2.8	80	<.06

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 04...	62.1	<.02	4.90	E.3	<.16	E1	50	44	.01

E--Estimated.

451618106590001 INDIAN CREEK AT MOUTH, NEAR KIRBY, MT

LOCATION.--Lat 45°16'18", long 106°59'00" (NAD 27), NE¼SE¼SW/4 sec. 32, T.6S., R.39E., Bighorn County, Hydrologic Unit 10100003 on county road 68, 0.1 mi west of Highway 314, and 5.0 mi south of Kirby.

DRAINAGE AREA.--25.0 mi^2.

PERIOD OF RECORD.--October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 4,000 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 03...	1630	.12	6.26	660	6.2	76	7.6	870	19.0	18.0	450	70.2	67.3

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 03...	10.1	.5	26.2	11	404	5.34	.8	14.3	82.2	519	.71	.17	E.005

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 03...	<.016	E.001	.40	.011	.057	<2	112	112	<.04	<.8	.9	520	.23

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 03...	83.0	<.02	2.38	E.3	<.16	E1	58	25	.01

E--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT

LOCATION.--Lat 45°21'40", long 106°59'23" (NAD 27), in NE¼NE¼SW¼ sec.36, T.5 S., R.38 E., Big Horn County, Hydrologic Unit 10100003, on right bank, 0.2 mi upstream from Dry Creek, 0.5 mi north of reservation boundary, 1.9 mi downstream from Cache Creek, 2.0 mi north of Kirby, and at river mile 179.6.
DRAINAGE AREA.-- 123 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 3,780 ft (NGVD 29).
REMARKS.--Water-discharge records poor. Numerous small diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.
EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 231 ft^3/s was measured May 9, 1978, at site 1.9 mi upstream from present site. Flow was known to be higher during flood of May 19-21, 1978, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.53	e0.40	e1.3	e1.1	e1.7	e6.0	1.4	1.1	e2.9	5.5	6.7	0.61
2	0.44	e0.40	e1.2	e1.0	e1.5	e5.0	1.4	0.87	e3.0	4.9	6.8	0.38
3	0.31	e0.50	e1.2	e1.0	e1.3	e4.0	1.4	0.81	e3.2	4.5	5.1	0.21
4	0.15	e0.60	e1.1	e0.90	e1.4	e3.0	1.4	0.80	e3.2	3.8	4.3	0.11
5	0.12	e0.70	e0.90	e0.80	e1.3	e2.0	1.4	0.79	e3.3	3.0	3.5	0.02
6	0.06	e0.80	e1.1	e0.70	e1.2	e1.0	1.5	0.74	e3.4	2.6	4.3	0.05
7	0.05	e0.90	e1.2	e1.0	e1.1	e0.70	1.5	0.72	e3.4	2.8	6.1	0.26
8	0.06	e1.0	e1.2	e1.3	e1.2	e0.50	1.5	0.74	e3.4	2.0	5.3	0.36
9	0.12	e1.0	e1.0	e1.5	e1.4	e0.40	1.5	0.74	e3.4	2.1	3.9	0.23
10	0.14	e1.0	e1.0	e1.4	e1.6	e0.30	1.3	0.75	e3.6	2.4	2.9	0.09
11	0.21	e1.0	e1.0	e1.4	e1.7	e0.26	1.3	0.80	e4.5	2.1	1.8	0.00
12	0.25	e0.90	e0.90	e1.4	e1.8	0.27	1.3	0.80	5.2	2.0	0.23	0.00
13	0.23	e1.0	e1.0	e1.3	e1.8	0.40	1.4	0.89	4.8	1.6	0.20	0.22
14	0.22	e0.90	e1.2	e1.3	e1.8	0.28	1.4	0.94	4.8	2.1	0.18	0.60
15	3.2	e1.0	e1.3	e1.5	e1.8	0.18	1.5	0.99	4.5	2.2	0.16	0.95
16	0.96	e1.2	e1.3	e1.5	e1.8	0.20	1.4	1.00	5.3	1.7	0.13	1.1
17	0.26	e1.2	e1.3	e1.5	e2.0	0.31	1.3	e1.2	5.7	1.3	0.13	1.3
18	1.4	1.3	e1.3	e1.4	e2.2	0.40	1.3	e1.3	6.1	1.1	0.12	1.6
19	0.86	1.2	e1.3	e1.5	e2.5	0.36	1.3	e1.3	5.9	0.89	0.11	1.3
20	0.16	1.4	e1.3	e1.5	e3.2	0.43	1.2	e1.4	6.2	0.67	0.22	1.9
21	0.21	e1.1	e1.3	e1.5	e8.0	0.51	1.4	e1.4	6.3	0.45	0.26	2.6
22	0.23	e0.90	e1.3	e1.3	e6.4	0.49	1.5	e1.5	6.8	0.25	0.25	2.1
23	0.28	e0.80	e1.3	e1.3	e5.0	0.62	1.4	e1.6	7.3	0.16	0.52	2.2
24	0.47	e0.90	e1.3	e1.5	e6.0	0.59	1.2	e1.6	7.4	0.13	0.95	2.3
25	0.21	e1.1	e1.3	e1.7	e6.6	0.60	1.1	e1.7	7.5	0.07	1.6	2.1
26	0.26	e1.1	e1.2	e1.6	e6.0	0.87	1.1	e1.9	7.5	0.05	2.1	2.2
27	e0.20	e1.1	e1.2	e1.3	e7.4	1.0	0.96	e2.1	7.5	0.03	1.8	2.6
28	e0.30	e1.2	e1.2	e0.90	e7.4	0.80	1.0	e2.2	6.8	0.05	1.3	1.9
29	e0.40	e1.3	e1.1	e0.90	e7.4	1.5	1.2	e2.4	6.2	0.02	0.96	2.0
30	e0.60	e1.4	e1.1	e1.0	---	1.7	1.1	e2.6	5.8	0.03	0.79	1.8
31	e0.50	---	e1.1	e1.3	---	1.5	---	e2.8	---	0.16	0.70	---
TOTAL	13.39	29.30	36.50	39.30	94.5	36.17	39.66	40.48	154.9	50.66	63.41	33.09
MEAN	0.43	0.98	1.18	1.27	3.26	1.17	1.32	1.31	5.16	1.63	2.05	1.10
MAX	3.2	1.4	1.3	1.7	8.0	6.0	1.5	2.8	7.5	5.5	6.8	2.6
MIN	0.05	0.40	0.90	0.70	1.1	0.18	0.96	0.72	2.9	0.02	0.11	0.00
AC-FT	27	58	72	78	187	72	79	80	307	100	126	66

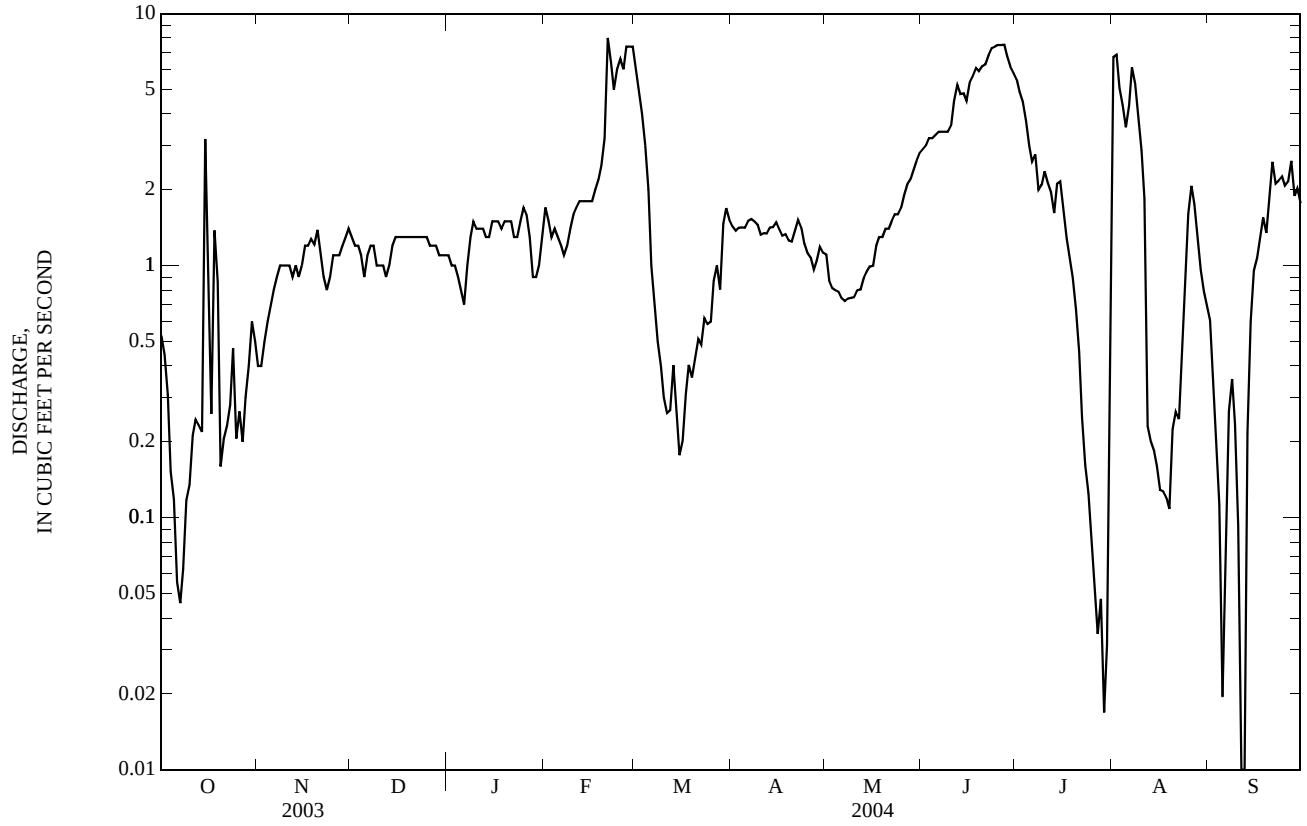
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2004, BY WATER YEAR (WY)

MEAN	2.71	3.06	3.08	3.21	6.00	12.8	14.0	11.8	8.13	3.45	1.61	1.55
MAX	8.02	11.7	12.7	10.0	29.0	41.8	40.7	23.9	19.7	11.1	4.60	3.18
(WY)	(1980)	(1980)	(1980)	(1980)	(1996)	(1996)	(1985)	(1984)	(1986)	(1993)	(1993)	(1984)
MIN	0.33	0.37	0.34	1.02	1.01	1.01	1.32	1.31	1.04	0.03	0.01	0.00
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2004)	(2004)	(2002)	(2002)	(2002)	(2002)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1980 - 2004	
ANNUAL TOTAL	1,075.47		631.36			
ANNUAL MEAN	2.95		1.73		5.95	
HIGHEST ANNUAL MEAN					11.7	1996
LOWEST ANNUAL MEAN					0.77	2002
HIGHEST DAILY MEAN	40	Mar 16	8.0	Feb 21	170	Mar 13, 1996
LOWEST DAILY MEAN	0.00	Jul 24	0.00	Many days	0.00	Sep 16, 1990
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 3	0.05	Jul 24	0.00	Sep 26, 2001
MAXIMUM PEAK FLOW			Unknown		b219	Mar 17, 1996
MAXIMUM PEAK STAGE			a3.85	Feb 21	a8.28	Mar 13, 1996
INSTANTANEOUS LOW FLOW					0.00	Sep 6, 1989
ANNUAL RUNOFF (AC-FT)	2,130		1,250		4,310	
10 PERCENT EXCEEDS	8.0		4.6		14	
50 PERCENT EXCEEDS	1.1		1.3		3.2	
90 PERCENT EXCEEDS	0.01		0.21		0.75	

a--Backwater from ice.
b--Gage height, 6.30 ft.
e--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980-84, July 2003 to current year.

REMARKS.--Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
06...	1030	E.03	666	6.6	62	8.2	1,190	23.0	6.5	600	82.0	95.3	12.3
NOV													
18...	1600	1.2	661	12.2	105	8.4	1,090	14.0	3.0	570	81.8	88.4	9.72
DEC													
04...	1230	1.7	678	11.6	90	7.8	1,140	-2.0	.0	650	90.2	104	8.83
JAN													
08...	0900	E1.3	667	9.2	72	7.7	1,110	2.0	.0	580	85.8	88.5	8.49
FEB													
23...	1030	E5.0	664	11.5	91	7.5	1,040	4.0	.0	540	80.7	82.8	8.92
MAR													
08...	1300	E.50	674	12.7	103	7.7	880	17.0	1.5	460	68.8	71.0	8.42
APR													
13...	1000	1.4	665	8.2	77	8.2	1,140	23.0	6.5	530	78.0	82.5	8.74
MAY													
12...	1100	.86	667	9.2	87	8.3	1,150	4.0	7.0	530	73.6	83.4	9.92
JUN													
10...	1050	E3.6	657	5.4	67	8.4	1,020	19.5	18.0	490	57.3	85.4	8.87
JUL													
13...	0945	1.7	668	4.7	58	8.3	977	24.5	18.5	450	54.5	77.3	8.41
AUG													
19...	0840	.12	669	4.0	45	8.2	1,090	17.5	15.0	550	63.8	94.9	11.4
SEP													
14...	1015	.51	662	3.4	37	8.2	1,090	11.5	12.5	550	67.2	92.6	12.9

E--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT													
06...	1	59.9	18	540	5.97	1.1	21.1	125	726	.99	E0.06	<.016	E.001
NOV													
18...	.9	46.8	15	438	5.98	.8	19.1	141	656	.89	2.13	E.010	E.001
DEC													
04...	.8	44.9	13	554	5.05	.8	20.1	158	763	1.04	3.50	<.016	E.001
JAN													
08...	.8	44.6	14	479	5.11	.8	22.1	151	694	.94	E2.44	.059	.003
FEB													
23...	.7	36.9	13	422	4.38	.7	19.0	149	636	.86	E8.59	.076	.003
MAR													
08...	.8	37.3	15	339	3.76	.5	12.9	101	508	.69	E.69	E.013	E.001
APR													
13...	.9	45.8	15	437	5.13	.8	15.5	134	633	.86	2.39	<.016	<.002
MAY													
12...	.9	47.8	16	494	4.88	.9	14.9	129	661	.90	1.53	<.016	E.001
JUN													
10...	1	52.2	18	494	4.31	.9	11.5	119	636	.86	E6.18	<.016	E.001
JUL													
13...	.9	46.2	18	491	3.88	.9	14.6	94.1	594	.81	2.73	<.016	<.002
AUG													
19...	1	55.9	18	558	4.58	1.0	7.9	110	685	.93	.22	<.016	<.002
SEP													
14...	1	54.7	17	557	5.15	1.0	8.7	100	676	.92	.93	<.016	E.001

Date	Total nitrogen, watrt unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
06...	.48	.029	.067	43	103	<.01
NOV						
18...	.33	.011	.044	68	113	.37
DEC						
04...	.33	.010	.036	74	28	.13
JAN						
08...	.41	.011	.033	69	90	E.32
FEB						
23...	.44	.011	.048	74	24	E.32
MAR						
08...	--	.012	.108	87	69	E.01
APR						
13...	.36	.009	.039	76	48	.18
MAY						
12...	.43	.025	.059	66	41	.10
JUN						
10...	.49	.031	.067	69	43	E.42
JUL						
13...	.57	.059	.092	85	39	.18
AUG						
19...	.58	.057	.100	87	23	.01
SEP						
14...	.59	.056	.119	80	28	.04

E--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

BIOLOGICAL SAMPLE, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conduct-ance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Biomass peri-phyton, ashfree drymass g/m2 (49954)	Peri-phyton biomass ash weight, g/m2 (00572)	Peri-phyton biomass dry weight, g/m2 (00573)	Biomass chloro-phyll ratio, peri-phyton, number (70950)	Pheo-phytin a, peri-phyton, mg/m2 (62359)	Chloro-phyll a peri-phyton, mg/m2 (70957)
SEP												
25...	1100	.01	8.1	1,150	24.0	9.0	63.4	1,400	1,482	810	36	78.3

BENTHIC INVERTEBRATE SAMPLES
SEPTEMBER 25, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Naididae	12	0.5
Tubificidae	6	0.2
Sphaeriidae	24	1.0
Lymnaeidae	12	0.5
Physidae	30	1.2
Planorbidae	30	1.2
Hyalella azteca	738	30.0
ODONATA		
Aeshnidae	12	0.5
Coenagrionidae	240	9.8
EPHEMEROPTERA		
Callibaetis	180	7.3
Caenis	84	3.4
Paraleptophlebia	42	1.7
HEMIPTERA		
Belostoma	6	0.2
Corixidae	6	0.2
Ambrysus	24	1.0
Notonecta	6	0.2
Microvelia	12	0.5
TRICHOPTERA		
Cheumatopsyche	6	0.2
Limnephilidae	54	2.2
COLEOPTERA		
Agabus	6	0.2
Neoporus	12	0.5
Dubiraphia	414	16.8
Microcylloepus	18	0.7
Stenelmis	24	1.0
Haliplus	24	1.0
Tropisternus	6	0.2
DIPTERA		
Dixa	6	0.2
Dixella	12	0.5
Ephydridae	12	0.5
Tipula	6	0.2
CHIRONOMIDAE		
Chironomidae-pupae	6	0.2
Corynoneura	12	0.5
Cryptochironomus	6	0.2
Dicrotendipes	42	1.7
Eukiefferiella Devonica Group	6	0.2
Micropsectra	24	1.0
Parakiefferiella	6	0.2
Paralauterborniella	12	0.5
Parametriocnemus	6	0.2
Pentaneura	66	2.7
Procladius	96	3.9
Pseudochironomus	6	0.2
Rheotanytarsus	6	0.2
Thienemannimyia Complex	102	4.1

Richest targeted habitat sample--riffles
Composite of 17 samples (area 0.023 m^2/sample)
Equipment type--Mini-Surber sample;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Naididae	3	0.2
Tubificidae	17	1.1
Sphaeriidae	13	0.9
Physidae	7	0.4
Hyalella azteca	83	5.3
Acari	3	0.2
ODONATA		
Coenagrionidae	3	0.2
EPHEMEROPTERA		
Caenis	57	3.6
Paraleptophlebia	17	1.1
HEMIPTERA		
Corixidae	13	0.9
Ambrysus	30	1.9
TRICHOPTERA		
Cheumatopsyche	40	2.5
Limnephilidae	3	0.2
COLEOPTERA		
Nebrioporus	7	0.4
Stictotarsus	3	0.2
Dubiraphia	852	54.4
Microcylloepus	37	2.3
Stenelmis	47	3.0
Haliplus	3	0.2
DIPTERA		
Ceratopogoninae	10	0.6
Simulium	3	0.2
Pilaria	7	0.4
Tipula	3	0.2
CHIRONOMIDAE		
Cryptochironomus	33	2.1
Dicrotendipes	7	0.4
Micropsectra	13	0.9
Paralauterborniella	10	0.6
Pentaneura	13	0.9
Phaenopsectra	3	0.2
Polypedilum	3	0.2
Procladius	130	8.3
Rheotanytarsus	60	3.8
Stempellinella	3	0.2
Thienemannimyia Complex	30	1.9

Total number of taxon	34
Total number of organisms	1568
Organisms per m^2	4020
Hilsenhoff biotic index	7.75
EPT abundance	117
Number of EPT taxon	4
EPT abundance per m^2	300

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

BENTHIC INVERTEBRATE SAMPLES--CONTINUED
SEPTEMBER 25, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
Total number of taxon	44	
Total number of organisms	2460	
Hilsenhoff biotic index	7.76	
EPT abundance	366	
Number of EPT taxon	5	

ALGAE SAMPLES
SEPTEMBER 25, 2003

Richest targeted habitat sample--gravel, cobble
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.64	6.21
Adlafia minuscula	0.06	0.62
Amphipleura pellucida	0.45	4.35
Amphora inariensis	0.45	4.35
Amphora libyca	0.13	1.24
Amphora pediculus	0.39	3.73
Bacillaria paradoxa	0.13	1.24
Caloneis bacillum	0.52	4.97
Caloneis silicula	0.39	3.73
Cocconeis pediculus	1.35	13.0
Cocconeis placentula	10.2	98.2
Cyclotella meneghiniana	1.10	10.6
Cymatopleura solea	0.19	1.86
Cymbella mexicana	0.06	0.62
Diploneis puella	0.84	8.08
Epithemia sorex	0.64	6.21
Epithemia turgida	0.26	2.48
Fragilaria capucina	0.13	1.24
Fragilaria vaucheriae	0.13	1.24
Gomphonema acuminatum	0.06	0.62
Gomphonema gracile	0.06	0.62
Gomphonema hedinii	0.06	0.62
Gomphonema mexicanum	0.13	1.24
Gomphonema minutum	0.13	1.24
Gomphonema olivaceum	0.13	1.24
Gomphonema parvulum	0.06	0.62
Gomphonema rhombicum	0.06	0.62
Gyrosigma acuminatum	0.06	0.62
Melosira varians	1.67	16.2
Navicula canalis	0.32	3.11
Navicula capitatoradiata	0.58	5.59
Navicula caterva	0.77	7.45
Navicula cryptotenella	0.39	3.73
Navicula erifuga	0.19	1.86
Navicula germainii	0.71	6.83
Navicula goersii	0.52	4.97
Navicula gregaria	0.32	3.11
Navicula libonensis	0.06	0.62
Navicula minima	1.10	10.6
Navicula radiosa	0.13	1.24
Navicula reichardtiana	0.19	1.86
Navicula tenera	0.39	3.73
Navicula tripunctata	0.13	1.24
Navicula trivialis	0.13	1.24
Navicula veneta	0.84	8.08
Nitzschia agnita	0.97	9.32
Nitzschia archibaldii	0.06	0.62
Nitzschia dissipata	0.97	9.32
Nitzschia frustulum	4.90	47.2
Nitzschia incognita	0.39	3.73
Nitzschia linearis	0.26	2.48
Nitzschia microcephala	0.13	1.24
Nitzschia palea	1.10	10.6
Nitzschia recta	0.26	2.48
Nitzschia reversa	0.19	1.86
Nitzschia supralitorea	0.97	9.32
Nitzschia valdecostata	0.06	0.62

Depositional targeted habitat sample--fine sediment
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.16	0.66
Adlafia minuscula	0.11	0.44
Amphipleura pellucida	0.21	0.88
Amphora inariensis	0.11	0.44
Amphora libyca	0.11	0.44
Amphora pediculus	0.11	0.44
Amphora sp.	0.05	0.22
Biremis circumtexta	0.16	0.66
Caloneis bacillum	0.29	1.20
Caloneis silicula	0.19	0.77
Cocconeis pediculus	0.64	2.63
Cocconeis placentula	4.00	16.5
Cyclotella meneghiniana	0.42	1.75
Cylindrotheca gracilis	0.05	0.22
Cymatopleura solea	0.05	0.22
Cymbella excisa	0.05	0.22
Cymbella tumida	0.05	0.22
Diploneis oculata	0.11	0.44
Diploneis puella	0.19	0.77
Encyonema silesiacum	0.05	0.22
Epithemia adnata	0.08	0.33
Epithemia sorex	0.05	0.22
Epithemia turgida	0.05	0.22
Gomphonema minutum	0.05	0.22
Gomphonema olivaceum	0.05	0.22
Gyrosigma acuminatum	0.08	0.33
Hippodonta hungarica	0.19	0.77
Melosira varians	0.03	0.11
Navicula canalis	0.48	1.97
Navicula capitatoradiata	0.42	1.75
Navicula caterva	0.32	1.31
Navicula cryptotenella	0.05	0.22
Navicula elginensis	0.05	0.22
Navicula erifuga	0.37	1.53
Navicula germainii	0.16	0.66
Navicula goersii	0.45	1.86
Navicula gregaria	0.50	2.08
Navicula lanceolata	0.05	0.22
Navicula lenzii	0.05	0.22
Navicula libonensis	0.48	1.97
Navicula minima	0.56	2.30
Navicula omissa	0.03	0.11
Navicula pseudanglica	0.05	0.22
Navicula reichardtiana	0.42	1.75
Navicula salinicola	0.11	0.44
Navicula soehrensis	0.05	0.22
Navicula sp.	0.05	0.22
Navicula trivialis	0.29	1.20
Navicula veneta	0.45	1.86
Navicula viridula	0.03	0.11
Neidium ampliatum	0.03	0.11
Nitzschia agnita	0.42	1.75
Nitzschia amphibia	0.05	0.22
Nitzschia aurariae	0.05	0.22
Nitzschia dissipata	0.40	1.64
Nitzschia frustulum	0.61	2.52
Nitzschia incognita	0.16	0.66

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

ALGAE SAMPLES--CONTINUED
SEPTEMBER 25, 2003

Richest targeted habitat sample
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA--Continued		
Planothidium lanceolatum	0.45	4.35
Pleurosigma delicatulum	0.64	6.21
Reimeria sinuata	0.13	1.24
Rhoicosphenia abbreviata	1.74	16.8
Rhopalodia brebissonii	0.84	8.08
Rhopalodia gibba	0.26	2.48
Sellaphora pupula	0.26	2.48
Simonsenia delognei	0.77	7.45
Synedra ulna	0.26	2.48
Thalassiosira weissflogii	0.13	1.24
Tryblionella apiculata	0.06	0.62
Tryblionella debilis	0.06	0.62
CHLOROPHYTA		
Ankistrodesmus sp.	0.74	7.10
Cosmarium sp.	0.18	1.78
Oedogonium sp.	0.37	3.55
Scenedesmus sp.	2.21	21.3
Spirogyra sp.	0.18	1.78
CYANOPHYTA		
Anabaena sp.	13.3	128
Calothrix sp.	1.47	14.2
Chroococcus sp.	0.37	3.55
Oscillatoria sp.	38.1	368
Total		964

Depositional targeted habitat sample
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA--Continued		
Nitzschia linearis	0.03	0.11
Nitzschia palea	0.90	3.72
Nitzschia perminuta	0.03	0.11
Nitzschia pusilla	0.05	0.22
Nitzschia recta	0.03	0.11
Nitzschia reversa	0.11	0.44
Nitzschia sigma	0.05	0.22
Nitzschia solita	0.11	0.44
Nitzschia supralitorea	0.32	1.31
Nitzschia valdestriata	0.05	0.22
Nitzschia vermicularis	0.05	0.22
Pinnularia sp.	0.03	0.11
Planothidium lanceolatum	0.21	0.88
Pleurosigma delicatulum	0.29	1.20
Rhoicosphenia abbreviata	0.29	1.20
Rhopalodia brebissonii	0.32	1.31
Rhopalodia gibba	0.08	0.33
Sellaphora pupula	0.24	0.99
Simonsenia delognei	0.19	0.77
Surirella minuta	0.03	0.11
Synedra acus	0.05	0.22
Synedra parasitica	0.05	0.22
Synedra ulna	0.13	0.55
Thalassiosira weissflogii	0.08	0.33
Tryblionella apiculata	0.05	0.22
Tryblionella calida	0.11	0.44
CHLOROPHYTA		
Oedogonium sp.	0.37	1.53
CYANOPHYTA		
Anabaena sp.	7.02	29.0
Oscillatoria sp.	73.9	306
Total		414

452312107001501 CORRAL CREEK ABOVE MOUTH, NEAR KIRBY, MT

LOCATION.--Lat 45°23'12", long 107°00'15" (NAD 27), SE¼SW¼SE¼ sec. 23, T5S., R.38E., Bighorn County, Hydrologic Unit 100100003, 0.10 mi above old homestead, about 1 mi above mouth, and about 5 mi north of Kirby.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,740 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 03...	1330	.01	2	667	6.8	78	7.4	889	20.0	15.5	460	85.2	60.9

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 03...	10.7	.5	24.9	10	427	5.67	.6	17.2	75.9	537	.73	.02	E.008

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 03...	<.016	E.001	.25	.012	.029	<2	120	112	<.04	<.8	.9	150	<.06

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 03...	179	<.02	2.97	E.2	<.16	<2	56	54	.00

E--Estimated.

452800107001101 THOMPSON CREEK NEAR BUSBY, MT

LOCATION.--Lat 45°28'00", long 107°00'11" (NAD 27), SE¼NW¼NE¼ sec. 26, T.4S., R.38E., Bighorn County, Hydrologic Unit 10100003, 0.5 mi upstream from mouth at Highway 314 bridge crossing, and 7 .0 mi south of Busby.

DRAINAGE AREA.--21.9 mi^2.

PERIOD OF RECORD.--October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,560 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 03...	1200	.33	14.3	672	8.3	97	7.8	1,100	20.0	16.5	550	67.7	92.8

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 03...	11.1	1	56.5	18	434	6.06	.5	14.5	206	715	.97	.64	E.007

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 03...	<.016	E.001	.53	<.006	.041	E1	62	204	<.04	<.8	1.5	310	.33

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 03...	31.2	<.02	2.55	<.4	<.16	E2	88	27	.02

E--Estimated.

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°46'03", long 106°34'10" (NAD 27), in SE¼SW¼NE¼ sec.8, T.1 S., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 100 ft downstream from bridge on FAS Route 315, 1.5 mi downstream from Lee Coulee, 8.4 mi southeast of Colstrip, and at river mile 85.6.

DRAINAGE AREA.--799 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,000 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 800 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e0.90	e2.0	e2.5	24	e7.5	e4.0	0.86	0.18	0.00	0.00
2	0.00	0.00	e0.90	e2.0	e2.5	20	e7.0	e4.0	0.78	0.23	0.00	0.00
3	0.00	0.00	e0.90	e2.0	e2.5	19	e7.0	e3.5	0.61	0.17	0.00	0.00
4	0.00	0.00	0.72	e2.0	e2.5	19	e7.0	e3.5	0.51	0.14	0.00	0.00
5	0.00	0.00	0.94	e1.5	e2.5	19	e7.5	e3.0	0.48	0.28	0.00	0.00
6	0.00	0.00	1.2	e1.5	e2.5	16	e8.0	e3.0	0.38	0.28	0.00	0.00
7	0.00	0.00	1.3	e1.5	e3.0	16	e7.0	e2.5	0.29	0.17	0.00	0.00
8	0.00	0.00	1.3	e2.0	e3.0	17	e7.0	e2.5	0.20	0.12	0.00	0.00
9	0.00	0.00	e1.0	e2.0	e3.0	16	e7.0	e3.0	0.15	0.10	0.00	0.00
10	0.00	0.00	e1.5	e2.5	e3.0	14	e7.5	e3.0	0.69	0.08	0.00	0.00
11	0.00	0.00	e1.5	e2.5	e3.0	16	e8.0	2.7	8.1	0.07	0.00	0.00
12	0.00	0.00	2.0	e3.0	e3.0	13	e8.0	2.6	1.3	0.06	0.00	0.00
13	0.00	0.00	2.0	e3.5	e3.0	14	e8.0	2.5	0.48	0.04	0.00	0.00
14	0.00	0.00	2.1	e4.0	e3.0	17	e7.5	2.1	0.44	0.03	0.00	0.00
15	0.00	0.00	2.0	e4.0	e3.0	15	e7.5	1.8	0.26	0.03	0.00	0.00
16	0.00	0.00	2.1	e4.0	e4.0	14	e7.5	2.2	0.18	0.01	0.00	0.00
17	0.00	0.00	1.9	e4.0	e4.0	e15	e7.0	2.2	0.15	0.00	0.00	0.00
18	0.00	0.00	2.1	e4.0	e5.0	e15	e7.0	2.1	0.17	0.00	0.00	0.00
19	0.00	0.00	2.0	e4.0	e20	e10	e7.0	2.1	0.21	0.00	0.00	0.00
20	0.00	0.00	2.1	e4.0	e80	e10	e6.5	2.0	0.19	0.00	0.00	0.00
21	0.00	e0.20	2.1	e4.0	e70	e9.0	e6.5	1.8	0.15	0.00	0.00	0.00
22	0.00	e0.40	2.2	e4.0	e50	e8.0	e7.0	1.2	0.13	0.00	0.00	0.00
23	0.00	e0.60	2.2	e4.0	e35	e7.0	e7.0	1.4	0.09	0.00	0.00	0.00
24	0.00	e0.80	2.2	e4.0	e30	e6.0	e6.5	1.1	0.15	0.00	0.00	0.00
25	0.00	e0.90	2.1	e4.0	e30	e6.0	e5.5	1.2	0.15	0.00	0.00	0.00
26	0.00	e0.90	2.3	e3.5	27	e7.0	e4.0	1.4	0.18	0.00	0.00	0.00
27	0.00	e0.90	e2.0	e3.0	27	e7.0	e4.5	1.4	0.18	0.00	0.00	0.00
28	0.00	e1.0	e2.0	e2.5	22	e8.0	e4.5	1.1	0.16	0.00	0.00	0.00
29	0.00	e1.0	e2.0	e2.5	19	e9.0	e4.0	0.87	0.17	0.00	0.00	0.00
30	0.00	e0.90	e2.0	e2.5	---	e9.0	e3.5	0.96	0.17	0.00	0.00	0.00
31	0.00	---	e2.0	e2.5	---	e8.0	---	1.1	---	0.00	0.00	---
TOTAL	0.00	7.60	53.56	92.5	465.0	403.0	199.5	67.83	17.96	1.99	0.00	0.00
MEAN	0.00	0.25	1.73	2.98	16.0	13.0	6.65	2.19	0.60	0.06	0.00	0.00
MAX	0.00	1.0	2.3	4.0	80	24	8.0	4.0	8.1	0.28	0.00	0.00
MIN	0.00	0.00	0.72	1.5	2.5	6.0	3.5	0.87	0.09	0.00	0.00	0.00
AC-FT	0.00	15	106	183	922	799	396	135	36	3.9	0.00	0.00

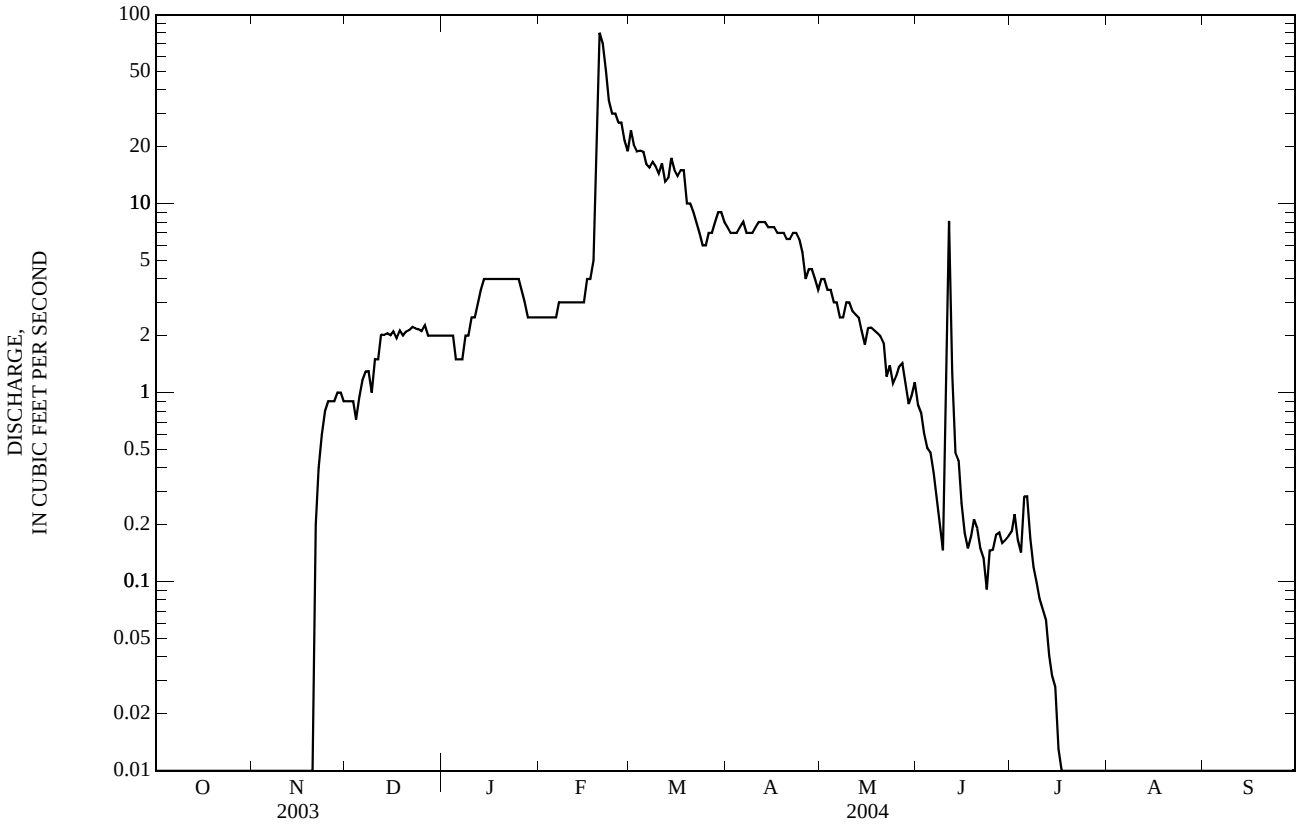
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

MEAN	9.00	11.6	11.7	14.1	26.2	46.0	38.8	49.0	34.3	17.3	8.61	6.35
MAX	47.5	46.2	46.0	70.3	105	164	185	306	212	104	57.1	55.8
(WY)	(1979)	(1979)	(1979)	(1975)	(1996)	(1994)	(1979)	(1975)	(1978)	(1975)	(1975)	(1978)
MIN	0.00	0.00	0.00	0.00	3.05	7.42	6.65	2.19	0.60	0.00	0.00	0.00
(WY)	(1991)	(2003)	(2003)	(2003)	(2003)	(1991)	(2004)	(2004)	(2004)	(2002)	(2001)	(1983)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1975 - 2004	
ANNUAL TOTAL	4,417.30		1,308.94			
ANNUAL MEAN	12.1		3.58		22.7*	
HIGHEST ANNUAL MEAN					95.9	1975
LOWEST ANNUAL MEAN					2.96	2002
HIGHEST DAILY MEAN	465	Mar 18	80	Feb 20	668	Mar 3, 1994
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	b0.00	Aug 31, 1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Aug 31, 1981
MAXIMUM PEAK FLOW			80	Feb 20	c754	Mar 2, 1994
MAXIMUM PEAK STAGE			a4.04	Feb 19	9.03	May 21, 1978
ANNUAL RUNOFF (AC-FT)	8,760		2,600		16,470	
10 PERCENT EXCEEDS	21		8.0		49	
50 PERCENT EXCEEDS	1.0		0.90		11	
90 PERCENT EXCEEDS	0.00		0.00		0.03	

*--Median of yearly mean discharge, 14.3 ft^3/s, 10,360 acre-ft/yr.
a--Backwater from ice.
b--No flow many days most years.
e--Estimated.

06295250 ROSEBUD CREEK NEAR COLSTRIP, MT—Continued



06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT

LOCATION.--Lat 46°15'53", long 106°28'30" (NAD 27), in SW¼NW¼NE¼ sec.21, T.6 N., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 0.4 mi upstream from bridge on Interstate Highway 94, 0.8 mi upstream from mouth, and 1.6 mi southwest of Rosebud.

DRAINAGE AREA.--1,302 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,480 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.5	0.19	e0.10	0.00	2.0	0.02	0.04	0.16	0.26	0.00	0.00
2	0.00	0.61	0.19	e0.10	0.00	1.4	0.01	0.03	0.18	0.29	0.00	0.00
3	0.00	0.62	0.18	e0.05	0.00	0.75	0.06	0.03	0.20	0.30	0.08	0.00
4	0.00	0.43	0.27	e0.05	0.00	2.8	0.03	0.05	0.25	0.31	0.20	0.14
5	0.00	0.18	0.16	e0.05	0.00	2.8	0.00	0.03	0.33	0.42	0.06	0.02
6	0.00	0.10	0.15	e0.00	0.00	6.9	0.00	0.01	0.27	0.36	0.01	0.00
7	0.00	0.10	0.17	e0.00	0.00	4.6	0.00	0.02	0.17	3.9	0.05	0.00
8	0.00	0.07	0.17	e0.05	0.00	5.1	0.00	0.03	0.14	0.80	0.03	0.00
9	0.00	0.07	0.17	e0.05	0.00	15	0.00	0.01	0.15	0.43	0.00	0.00
10	0.00	0.06	0.14	e0.05	0.00	8.8	0.00	0.00	0.66	0.37	0.00	0.00
11	0.00	0.16	0.14	e0.05	0.00	1.5	0.00	0.03	99	0.35	0.00	0.00
12	0.00	0.18	0.06	e0.05	0.00	2.8	0.00	0.07	128	0.33	0.00	0.00
13	0.00	0.11	0.05	e0.05	0.00	5.8	0.10	0.05	68	0.25	0.00	0.00
14	0.00	0.11	0.07	e0.05	0.00	6.7	0.01	0.05	15	0.18	0.00	0.02
15	0.00	0.29	0.15	e0.00	0.00	6.1	0.00	0.08	2.1	0.16	0.00	0.06
16	0.00	0.23	0.14	0.00	0.00	9.4	0.01	0.10	0.59	0.16	0.00	0.00
17	0.00	0.17	0.20	0.00	0.00	5.7	0.01	0.16	0.59	0.14	0.00	0.00
18	0.00	0.17	0.21	0.00	0.00	7.4	0.03	0.10	0.48	0.14	0.00	0.00
19	0.00	0.24	0.16	0.00	0.00	2.8	0.05	0.12	0.52	0.10	0.00	0.00
20	0.00	0.27	0.15	0.00	e120	1.9	0.08	0.08	0.52	0.13	0.00	0.08
21	0.00	0.25	0.18	0.00	e200	6.1	0.11	0.11	0.36	0.09	0.00	0.13
22	0.00	0.15	0.18	0.00	e250	12	0.07	0.12	0.40	0.05	0.00	0.00
23	0.00	0.10	0.16	0.00	e150	8.0	0.03	0.29	0.41	0.04	0.00	0.00
24	0.00	0.27	0.12	0.00	e50	0.27	0.03	0.18	0.37	0.14	0.00	0.00
25	0.00	0.25	0.12	0.00	e90	0.07	0.04	0.02	0.40	0.08	0.00	0.00
26	0.00	0.16	0.12	0.00	e100	0.03	0.04	0.01	0.46	0.00	0.00	0.00
27	0.00	0.15	0.13	0.00	28	0.09	0.05	0.04	0.86	0.00	0.00	0.00
28	0.00	0.08	0.14	0.00	22	0.00	0.03	0.06	0.30	0.20	0.00	0.00
29	0.61	0.16	e0.15	0.00	8.6	0.00	0.06	0.13	0.18	0.08	0.00	0.03
30	5.5	0.23	e0.10	0.00	---	0.09	0.05	0.16	0.19	0.05	0.00	0.03
31	7.5	---	e0.10	0.00	---	0.00	---	0.16	---	0.02	0.00	---
TOTAL	13.61	7.47	4.62	0.70	1,018.60	126.90	0.92	2.37	321.24	10.13	0.43	0.51
MEAN	0.44	0.25	0.15	0.02	35.1	4.09	0.03	0.08	10.7	0.33	0.01	0.02
MAX	7.5	1.5	0.27	0.10	250	15	0.11	0.29	128	3.9	0.20	0.14
MIN	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
AC-FT	27	15	9.2	1.4	2,020	252	1.8	4.7	637	20	0.9	1.0

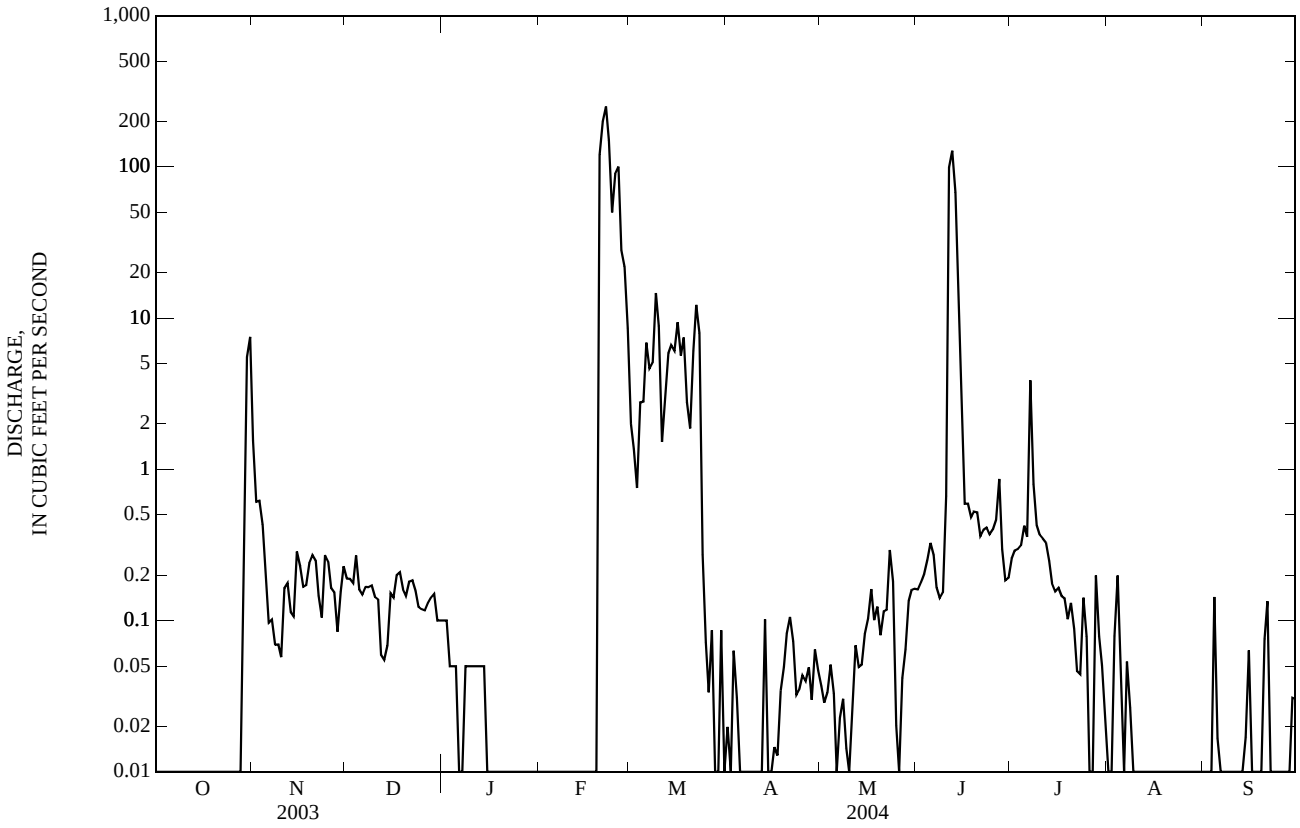
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

MEAN	7.86	8.81	9.49	18.0	37.2	70.6	41.0	57.5	38.8	16.9	7.67	7.97
MAX	45.7	47.6	47.8	159	187	428	180	478	286	133	47.8	77.3
(WY)	(1979)	(1979)	(1979)	(1999)	(1997)	(1994)	(1979)	(1978)	(1978)	(1993)	(1975)	(1978)
MIN	0.00	0.01	0.03	0.02	0.07	0.04	0.03	0.08	0.48	0.00	0.00	0.00
(WY)	(2002)	(2002)	(2002)	(2004)	(2002)	(2002)	(2004)	(2004)	(1988)	(2002)	(2003)	(1990)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1975 - 2004	
ANNUAL TOTAL	4,161.06		1,507.50			
ANNUAL MEAN	11.4		4.12		26.8*	
HIGHEST ANNUAL MEAN					113	1978
LOWEST ANNUAL MEAN					1.00	2002
HIGHEST DAILY MEAN	500	Mar 15	250	Feb 22	2,800	Mar 4, 1994
LOWEST DAILY MEAN	0.00	Jan 13	0.00	Oct 1	b0.00	Aug 28, 1984
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 13	0.00	Oct 1	0.00	Aug 5, 1988
MAXIMUM PEAK FLOW			Unknown		3,700	Mar 4, 1994
MAXIMUM PEAK STAGE			a3.64	Feb 22	7.70	Mar 4, 1994
ANNUAL RUNOFF (AC-FT)	8,250		2,990		19,390	
10 PERCENT EXCEEDS	24		2.0		59	
50 PERCENT EXCEEDS	0.17		0.06		7.0	
90 PERCENT EXCEEDS	0.00		0.00		0.08	

*--Median of yearly mean discharge, 14.9 ft^3/s, 10,800 acre-ft/yr.
a--Backwater from ice.
b--No flow many days in 1984, 1990-92, 2000-04.
e--Estimated.

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT—Continued



450137106595101 YOUNGS CREEK NEAR RESERVATION BOUNDARY, NEAR DECKER, MT

LOCATION.--Lat 44°01'37", long 106°59'51" (NAD 27), SE¼NW¼SE¼ sec. 25, T.9s., R.83e., Bighorn County, Hydrologic Unit 10090101, at dirt road crossing about 7 mi upstream from Wyoming Highway 338, 1.5 mi northeast of Pearl School, and 6.5 mi west of Decker.

DRAINAGE AREA.--21.5 mi^2.

PERIOD OF RECORD.-October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,780 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 04...	0830	.64	10.0	665	8.9	95	8.2	791	12.0	12.0	430	76.4	57.2

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 04...	7.22	.5	23.5	11	375	2.89	.8	14.5	73.1	480	.65	.83	<.010

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 04...	<.016	<.002	.34	.009	.038	E1	124	98	E.02	<.8	1.3	280	.23

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 04...	107	<.02	3.08	.4	<.16	E1	72	48	.08

E--Estimated.

445832106551401 YOUNGS CREEK ABOVE MOUTH, NEAR DECKER, MT

LOCATION.--Lat 44°58'32", long 106°55'14" (NAD 27), SW¼NW¼ sec. 30, T.58N., R.83W., Sheridan County, WY, Hydrologic Unit 10090101, at Wyoming Highway 338, 1.2 mi upstream from mouth, near Decker.

DRAINAGE AREA.--62.3 mi^2.

PERIOD OF RECORD.-October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,570 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 04...	1030	.27	4.51	672	8.9	96	8.2	1,680	21.0	13.0	850	109	140

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 04...	13.7	2	117	23	452	6.58	.9	11.8	548	1,220	1.66	.89	<.010

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 04...	<.016	<.002	.43	.015	.041	E1	66	228	.16	<.8	3.2	200	.09

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 04...	118	<.02	4.89	.6	<.16	E2	60	28	.02

E--Estimated.

450047106514201 SQUIRREL CREEK ABOVE MOUTH, AT DECKER, MT

LOCATION.--Lat 45°00'47", long 106°51'42" (NAD 27), NW¼SE¼SW¼ sec. 29, T.9S., R.40E., Bighorn County, Hydrologic Unit 10090101 at Montana Highway 314, 2 mi north of Montana-Wyoming state line, 0.7 mi upstream from mouth, and 200 yards north of Decker.

DRAINAGE AREA.--49.3 mi^2.

PERIOD OF RECORD.--October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,510 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 04...	1200	.03	11.2	672	8.3	95	8.1	5,540	21.0	14.5	3,000	233	594

Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 04...	28.1	8	1,050	43	722	15.5	.9	7.2	2,920	5,280	7.19	.43	.015

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)
MAY 04...	<.016	E.001	.75	.008	.052	E1	23	355	E.04	1.5	10.9	580	.22

Date	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY 04...	382	<.02	9.66	1.5	<.16	7	68	68	.01

E--Estimated.

06299980 TONGUE RIVER AT MONARCH, WY

LOCATION.--Lat 44°54'01", long 107°01'13", in NW¼ NW¼ SE¼ sec.20, T.57 N., R.84 W., Sheridan County, Hydrologic Unit 10090101, on right bank at county bridge, 0.4 mi downstream from South Dry Creek, and 0.9 mi east of Monarch.

DRAINAGE AREA.--478 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 3,620 ft above NGVD of 1929, from topographic map. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good. Numerous diversions for irrigation upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								79	160	151	49	23
2								71	143	165	41	27
3								79	129	143	42	25
4								103	130	136	56	35
5								154	145	213	54	44
6								219	153	222	45	40
7								244	167	176	45	36
8								235	157	154	44	34
9								232	151	141	42	33
10								209	158	132	48	28
11								209	215	125	50	28
12								219	225	119	46	28
13								192	191	95	41	35
14								168	165	86	39	37
15								154	150	81	36	40
16								152	146	89	36	44
17								153	154	86	35	45
18								150	152	75	38	42
19								168	155	67	39	49
20								163	153	64	35	55
21								187	158	57	33	78
22								204	164	52	30	78
23								224	148	66	36	78
24								206	149	88	31	80
25								189	167	82	30	76
26								177	154	67	30	72
27								167	155	55	39	70
28								158	146	59	48	83
29								155	130	55	42	92
30								186	127	59	36	77
31								174	---	53	27	---
TOTAL								5,380	4,697	3,213	1,243	1,512
MEAN								174	157	104	40.1	50.4
MAX								244	225	222	56	92
MIN								71	127	52	27	23
AC-FT								10,670	9,320	6,370	2,470	3,000

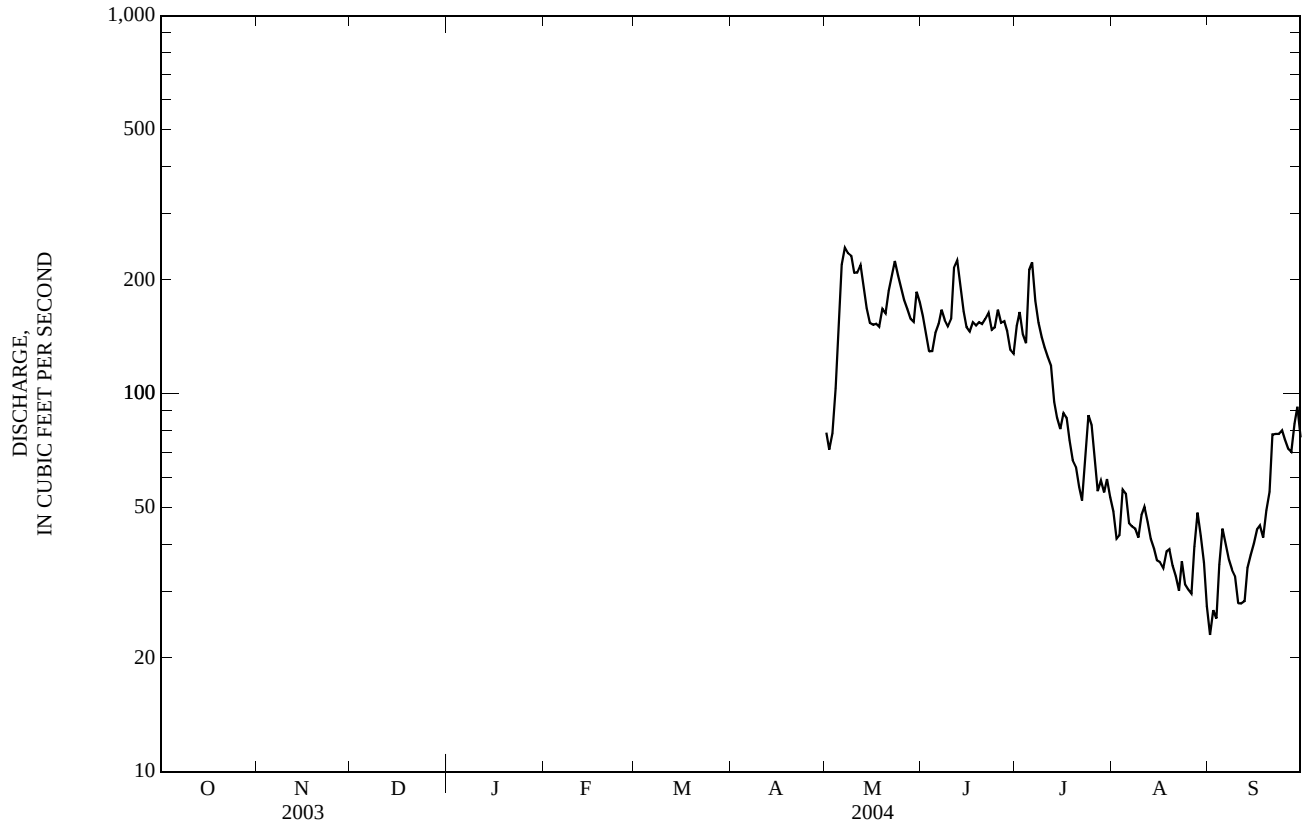
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2004 - 2004, BY WATER YEAR (WY)

MEAN	174	157	104	40.1	50.4
MAX	174	157	104	40.1	50.4
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	174	157	104	40.1	50.4
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)

SUMMARY STATISTICS FOR 2004 WATER YEAR

HIGHEST DAILY MEAN	244	May 7
LOWEST DAILY MEAN	23	Sep 1
MAXIMUM PEAK FLOW	293	May 7
MAXIMUM PEAK STAGE	3.16	May 7

06299980 TONGUE RIVER AT MONARCH, WY—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-80, 1982-83, January 2004 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 2004 to September 2004.

INSTRUMENTATION.--Conductance probe installed in late April 2004.

REMARKS.--Seasonal specific conductance records are rated excellent. Missing specific conductance data for May 5-8 are due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 582 microsiemens per centimeter (µS/cm), Sept. 4, 2004; minimum, 242 µS/cm, May 12, 2004. 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: During period of seasonal operation, maximum, 582 microsiemens per centimeter (µS/cm), Sept. 4; minimum, 242 µS/cm, May 12.

06299980 TONGUE RIVER AT MONARCH, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
JAN													
20...	1630	62	672	10.7	83	8.1	414	2.0	0.0	210	50.9	19.8	1.12
FEB													
04...	0830	59	665	12.6	99	8.1	440	-10.0	0.0	220	52.9	21.1	1.22
24...	0845	66	667	12.4	97	8.1	432	-0.5	0.0	220	51.2	21.7	1.84
MAR													
08...	1430	64	678	11.0	85	8.2	421	14.0	0.0	230	53.5	23.1	1.50
23...	0800	67	665	10.0	93	8.4	456	4.0	6.5	230	54.5	23.1	1.82
APR													
14...	1615	102	661	10.0	107	8.5	368	24.0	12.0	180	45.0	17.3	1.34
27...	1030	57	667	10.6	117	8.5	416	25.0	13.5	200	47.8	19.3	1.64
MAY													
13...	1830	183	678	13.4	129	8.6	263	10.5	8.5	130	32.1	12.5	1.22
26...	0830	174	661	8.8	92	8.2	316	12.0	11.0	150	36.0	15.1	1.25
JUN													
10...	0815	147	661	7.9	93	8.1	297	17.0	16.0	150	35.7	14.3	1.09
22...	0830	169	670	8.5	94	8.2	343	16.0	14.0	170	39.2	16.5	1.43
JUL													
14...	1645	88	669	11.3	163	8.8	366	36.5	27.0	170	36.2	18.4	1.28
27...	0800	56	668	6.1	77	8.3	393	18.0	20.0	180	38.3	20.8	1.47
AUG													
18...	1525	41	674	11.4	148	8.7	535	24.0	22.0	240	44.9	30.8	2.13
24...	0950	30	666	8.8	105	8.4	499	20.5	17.0	230	44.8	29.7	2.28
SEP													
15...	1500	41	667	12.0	136	8.7	503	25.0	15.0	250	49.6	30.2	2.21
27...	1530	71	678	9.4	103	8.4	396	13.0	14.0	190	44.1	20.2	1.28

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN													
20...	.3	8.91	165	1.82	<.2	7.07	42.3	231	.31	38.3	74	7	1.2
FEB													
04...	.3	10.3	166	2.07	<.2	7.20	47.6	243	.33	38.7	78	10	1.6
24...	.3	10.7	176	2.22	<.2	6.48	53.2	253	.34	45.0	80	2	.36
MAR													
08...	.4	13.5	181	2.10	<.2	5.78	54.3	262	.36	45.3	83	2	.35
23...	.4	14.8	179	2.42	.2	4.83	67.5	277	.38	50.0	58	28	5.1
APR													
14...	.3	9.42	157	2.10	<.2	4.84	36.9	212	.29	58.3	91	11	3.0
27...	.3	11.1	167	2.09	.2	4.92	44.3	232	.32	35.8	94	12	1.9
MAY													
13...	.2	6.59	116	1.20	<.2	7.50	25.5	157	.21	77.4	94	14	6.9
26...	.3	7.78	134	1.40	<.2	6.35	29.1	178	.24	83.4	96	31	15
JUN													
10...	.3	7.58	135	1.04	<.2	5.79	25.6	172	.23	68.3	94	14	5.6
22...	.3	10.0	150	1.45	<.2	5.88	33.3	198	.27	90.4	92	17	7.8
JUL													
14...	.4	11.1	147	1.40	.2	3.92	39.0	200	.27	47.5	88	10	2.4
27...	.4	12.4	167	1.66	.2	5.48	45.6	226	.31	34.2	97	7	1.1
AUG													
18...	.5	18.2	206	2.03	.2	6.96	68.2	297	.40	32.9	97	10	1.1
24...	.5	18.5	209	1.79	.3	7.32	69.3	300	.41	24.3	98	6	.49
SEP													
15...	.5	18.7	206	1.82	.2	6.82	69.9	303	.41	33.5	94	6	.66
27...	.3	10.4	175	1.23	.2	5.50	41.3	229	.31	43.9	93	5	.96

06299980 TONGUE RIVER AT MONARCH, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)
FEB													
04...	0830	E.008	.143	.002	.23	<.006	.004	<2	20	.3	<2	44	44
MAR													
08...	1430	<.010	E.008	E.001	.14	<.006	.009	<2	29	.3	<2	37	39
APR													
14...	1615	<.010	<.016	<.002	.23	<.006	.023	E1	91	.4	E1	43	43
27...	1030	<.010	<.016	<.002	.24	<.006	.027	<2	120	.5	<2	46	48
MAY													
13...	1830	E.005	<.016	E.001	.27	.015	.047	3	146	.4	<2	31	31
26...	0830	<.010	E.009	<.002	.18	E.003	.041	2	272	.3	<2	35	41
JUN													
10...	0815	E.005	<.016	E.001	.16	E.005	.027	E1	109	.4	E1	36	37
22...	0830	<.010	<.016	<.002	.24	E.005	.033	E1	134	.3	<2	37	38
JUL													
27...	0800	<.010	<.016	<.002	.26	<.006	.017	2	80	.7	<2	46	46
AUG													
24...	0950	<.010	<.016	<.002	.28	<.006	.019	<2	76	.7	<2	50	53

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
04...	<.06	<.06	30	<.04	<.04	1	.8	1.8	8	60	<.08	E.04	8.3
MAR													
08...	<.06	<.06	44	<.04	<.04	<1	1.1	.7	44	90	<.08	<.06	9.7
APR													
14...	<.06	<.06	30	<.04	<.04	3	.7	1.1	23	220	E.05	.19	6.0
27...	<.06	<.06	38	<.04	<.04	<1	1.1	1.3	20	230	<.08	.25	8.5
MAY													
13...	<.06	<.06	21	<.04	<.04	2	.8	.9	31	280	<.08	.23	5.4
26...	<.06	E.03	26	<.04	<.04	3	.8	1.3	22	470	<.08	.44	6.8
JUN													
10...	<.06	<.06	25	<.04	<.04	<1	1.0	.9	33	270	.16	.25	6.3
22...	<.06	<.06	30	<.04	<.04	<1	1.1	1.4	24	240	<.08	.23	8.4
JUL													
27...	<.06	<.06	41	<.04	<.04	<1	1.5	1.6	17	160	<.08	.17	12.6
AUG													
24...	<.06	<.06	60	<.04	<.04	<1	1.1	1.5	20	160	<.08	.16	19.0

E--Estimated.

06299980 TONGUE RIVER AT MONARCH, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
FEB										
04...	4.6	6	<.02	1.09	1.46	E.4	E.3	213	.8	<2
MAR										
08...	8.9	12	<.02	1.07	1.23	E.3	E.3	213	1.4	E1
APR										
14...	18.1	35	<.02	.70	1.32	E.2	E.3	189	1.1	E1
27...	21.4	33	<.02	1.18	2.18	E.4	<.4	211	2.2	<2
MAY										
13...	11.3	20	<.02	.47	1.01	E.3	E.3	119	1.0	7
26...	12.1	36	<.02	1.35	1.43	<.4	E.2	134	E.6	2
JUN										
10...	11.7	24	<.02	.73	1.52	E.3	<.4	137	1.0	E2
22...	8.5	19	<.02	1.25	1.10	<.4	<.4	142	1.0	E2
JUL										
27...	5.3	14	<.02	1.18	1.76	E.3	.6	202	2.6	E2
AUG										
24...	4.5	11	<.02	2.54	2.58	E.3	.7	240	.6	E1

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
MAY 2004 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1	350	338	342	301	292	296	363	344	357	455	434	442
2	365	350	358	309	301	306	366	347	358	484	449	459
3	377	358	369	321	309	317	374	348	362	486	459	473
4	365	324	347	323	308	318	372	348	361	479	470	476
5	---	---	---	316	295	303	410	348	374	479	467	470
6	---	---	---	298	291	293	410	365	387	479	455	464
7	---	---	---	298	280	292	365	348	358	484	465	475
8	---	---	---	282	272	278	363	342	353	488	463	477
9	262	251	258	296	282	289	359	337	348	495	467	480
10	274	256	266	305	296	302	364	335	350	499	475	485
11	262	245	257	332	291	309	360	338	349	481	462	470
12	252	242	247	325	307	316	370	337	355	475	457	467
13	277	252	265	313	305	309	366	338	357	477	454	465
14	294	277	287	321	313	315	387	355	372	470	447	459
15	303	286	295	331	320	325	388	355	375	475	453	465
16	303	297	300	336	330	332	396	371	385	483	459	473
17	304	299	302	342	330	335	385	354	370	499	479	488
18	310	302	307	346	337	340	382	353	369	521	499	513
19	307	292	302	350	335	342	389	362	376	523	505	515
20	298	284	288	365	339	345	387	371	379	522	491	508
21	298	289	294	369	356	360	388	374	380	528	504	516
22	307	290	302	359	324	340	397	369	384	528	513	519
23	324	298	309	345	332	339	415	389	403	522	497	511
24	332	323	328	355	341	347	422	384	411	519	495	508
25	327	312	317	348	322	334	406	373	390	512	499	505
26	317	312	315	343	331	339	400	372	388	543	506	525
27	323	315	319	358	321	340	409	385	400	553	511	533
28	332	316	320	339	326	333	422	396	410	516	478	494
29	326	320	323	352	337	345	441	416	427	511	479	489
30	320	292	304	360	340	351	459	434	447	520	497	509
31	298	289	293	---	---	---	444	437	441	517	502	511
MONTH	---	---	---	369	272	323	459	335	380	553	434	489

06299980 TONGUE RIVER AT MONARCH, WY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
MAY 2004 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
	SEPTEMBER		
1	539	512	528
2	549	537	544
3	562	549	556
4	582	562	573
5	565	520	539
6	530	507	520
7	520	491	507
8	518	499	509
9	521	498	511
10	523	508	515
11	532	513	523
12	542	528	536
13	536	518	526
14	525	507	518
15	530	508	518
16	514	485	501
17	491	462	477
18	491	465	478
19	478	448	462
20	463	447	453
21	469	449	461
22	449	420	435
23	433	414	424
24	416	395	409
25	407	390	398
26	402	388	395
27	408	392	401
28	418	398	411
29	399	373	387
30	403	384	392
31	---	---	---
MONTH	582	373	480

06305700 GOOSE CREEK NEAR ACME, WY

LOCATION.--Lat 44°53'11", long 106°59'18", in SE¼ SE¼ NE¼ sec.28, T.57 N., R.84 W., Sheridan County, Hydrologic Unit 10090101, on right bank 0.2 mi north of county road, 1.6 mi south of Acme, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--413 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,620 ft above NGVD of 1929, from topographic map. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Discharge records good except those for estimated daily discharges, which are poor. Some regulation by many small reservoirs, combined capacity, about 15,000 acre-ft. Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

DISCHARGE, CUBIC FEET PER SECOND,WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	e62	71	e48	e50	e48	75	29	46	102	30	30
2	59	e64	67	e52	e56	e47	79	27	30	146	25	28
3	52	e64	70	e41	e57	e45	80	21	21	119	19	30
4	49	e62	e58	e30	e56	e46	75	18	13	86	22	48
5	48	e56	e46	e32	e52	e48	77	12	9.7	145	31	54
6	46	e60	e56	e36	e54	e52	81	12	36	176	22	45
7	46	e66	e54	e38	e56	e54	82	10	106	147	18	37
8	45	e70	e50	e39	e52	e62	85	9.9	121	114	23	32
9	46	e76	e47	e42	e47	e74	90	8.0	99	99	28	30
10	45	73	e42	e46	e40	e96	86	11	88	77	29	23
11	46	67	e41	e50	e34	e90	69	7.5	116	61	31	31
12	48	68	e43	e52	e32	e86	72	37	121	49	29	33
13	50	65	e46	e52	e37	e88	72	52	92	43	31	33
14	57	66	e52	e54	e35	89	75	47	76	38	28	36
15	58	67	e47	e56	e38	81	77	35	54	33	24	50
16	60	65	e46	e56	e41	81	76	21	45	36	24	54
17	62	65	e50	e54	e44	86	70	12	52	52	24	50
18	63	63	e54	e50	e48	91	68	11	53	40	21	52
19	61	62	e52	e56	e52	92	74	22	54	36	20	43
20	59	69	e52	e54	e56	91	66	29	51	30	21	56
21	55	e62	e54	e56	e54	81	64	44	49	25	31	80
22	56	e54	e52	e62	e52	74	67	60	42	27	31	80
23	55	e47	e50	e60	e52	72	61	71	37	38	38	77
24	54	e52	e48	e54	e54	71	51	64	30	69	36	73
25	54	e54	e50	e48	e56	75	44	59	51	74	29	68
26	55	e58	e48	e36	e54	74	35	51	71	48	31	55
27	58	e60	e47	e32	e60	76	31	41	91	37	41	59
28	60	63	e42	e30	e56	80	29	37	85	48	48	95
29	e64	76	e42	e35	e52	76	36	30	69	50	41	81
30	e60	78	e43	e40	---	76	39	60	63	45	38	67
31	e58	---	e44	e47	---	72	---	62	---	38	33	---
TOTAL	1,695	1,914	1,564	1,438	1,427	2,274	1,986	1,010.4	1,871.7	2,128	897	1,530
MEAN	54.7	63.8	50.5	46.4	49.2	73.4	66.2	32.6	62.4	68.6	28.9	51.0
MAX	66	78	71	62	60	96	90	71	121	176	48	95
MIN	45	47	41	30	32	45	29	7.5	9.7	25	18	23
AC-FT	3,360	3,800	3,100	2,850	2,830	4,510	3,940	2,000	3,710	4,220	1,780	3,030

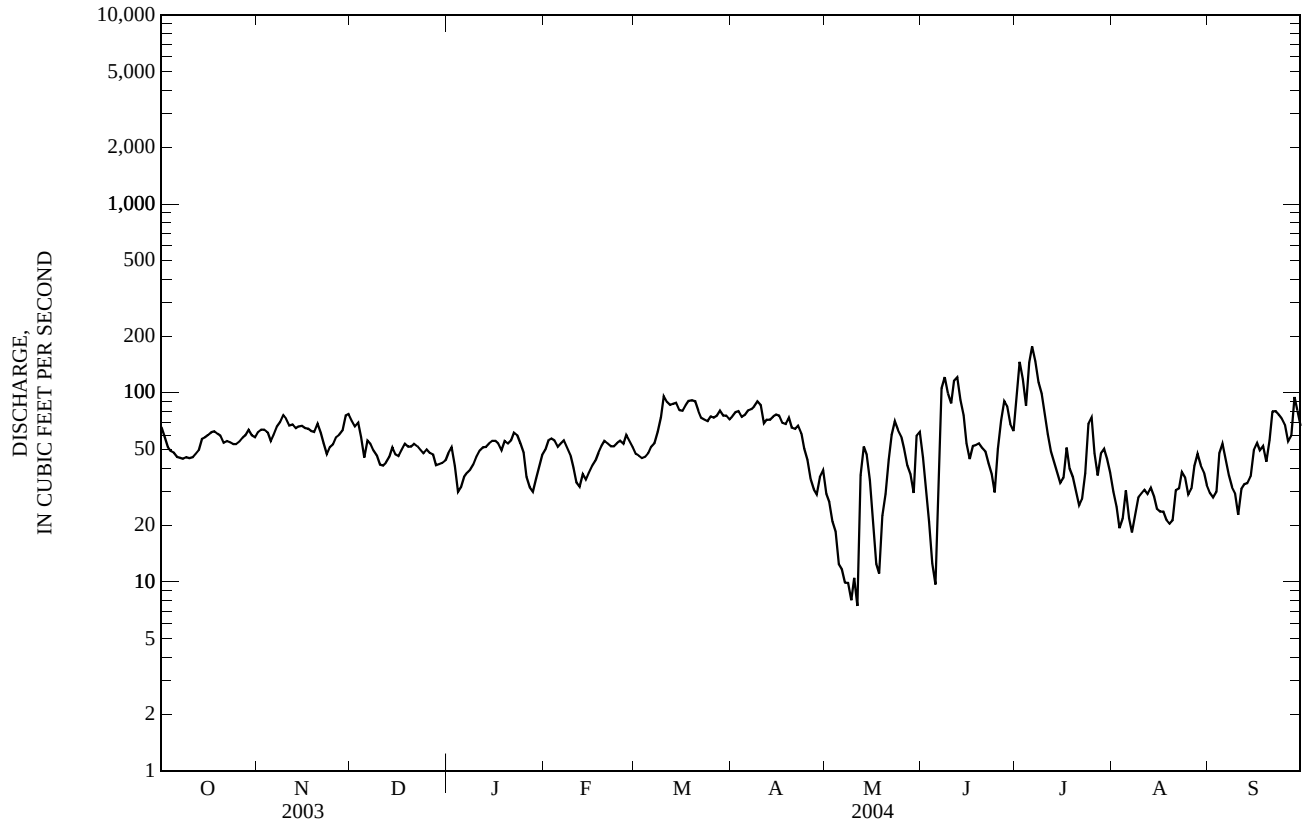
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)

MEAN	96.9	90.4	75.4	68.1	81.8	97.3	130	365	543	141	57.4	82.5
MAX	156	144	107	109	137	185	195	891	1,592	547	157	158
(WY)	(1985)	(1999)	(1996)	(1990)	(1996)	(1994)	(1994)	(1984)	(1995)	(1995)	(1998)	(1998)
MIN	41.6	47.1	42.3	43.5	36.7	46.0	66.2	32.6	39.2	9.51	15.6	28.0
(WY)	(2002)	(2003)	(2002)	(2002)	(1989)	(2002)	(2004)	(2004)	(2001)	(2001)	(1988)	(2001)

06305700 GOOSE CREEK NEAR ACME, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004	
ANNUAL TOTAL	52,246.7		19,735.1			
ANNUAL MEAN	143		53.9		147	
HIGHEST ANNUAL MEAN					303	1995
LOWEST ANNUAL MEAN					50.4	2002
HIGHEST DAILY MEAN	1,210	Jun 2	176	Jul 6	3,040	Jun 17, 1995
LOWEST DAILY MEAN	6.2	Aug 9	7.5	May 11	3.0	Aug 24, 2001
ANNUAL SEVEN-DAY MINIMUM	7.7	Aug 9	10	May 5	4.3	Aug 22, 2001
MAXIMUM PEAK FLOW			a210	Jul 5	3,330	Jun 17, 1995
MAXIMUM PEAK STAGE			b3.77	Feb 21	c7.65	Feb 25, 1986
ANNUAL RUNOFF (AC-FT)	103,600		39,140		106,300	
10 PERCENT EXCEEDS	399		81		297	
50 PERCENT EXCEEDS	65		52		86	
90 PERCENT EXCEEDS	25		29		37	

a--Gage height, 3.19 ft.
b--Backwater from ice.
c--From floodmarks, backwater from ice.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-89, February 2004 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr. 21, 2004 to September 2004.

INSTRUMENTATION.--Specific conductance probe installed late April 2004.

REMARKS.--Specific conductance rated good. Missing specific conductance values for May 19, July 10, and Sept. 8, 9, and 13 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 996 microsiemens per centimeter (µS/cm), May 11, 2004; minimum, 336 µS/cm,June 8, 2004.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 996 microsiemens per centimeter (µS/cm), May 11; minimum, 336 µS/cm, June 8.

06305700 GOOSE CREEK NEAR ACME, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB													
03...	1645	E57	665	15.6	123	8.0	643	-2.0	0.0	310	63.4	37.9	2.40
MAR													
08...	1615	E62	678	14.6	127	8.4	610	16.0	4.5	340	66.9	41.6	2.72
APR													
14...	1500	78	662	10.7	115	8.5	553	24.0	12.0	260	51.8	31.0	2.10
27...	0930	29	668	12.4	132	8.7	726	18.5	12.0	340	67.0	42.9	3.09
MAY													
14...	0745	49	674	9.7	92	8.4	546	9.0	7.5	250	49.9	30.7	2.82
26...	1100	52	661	11.4	124	8.5	610	23.5	12.5	290	57.3	36.1	3.17
JUN													
09...	1615	98	665	13.0	168	9.0	336	24.0	21.0	160	33.2	18.2	2.07
22...	1000	44	670	10.6	123	8.6	725	22.0	16.0	350	67.3	44.6	3.45
JUL													
15...	0810	34	670	5.0	66	8.3	670	22.5	22.5	310	59.4	39.6	3.30
AUG													
17...	1545	22	670	15.1	200	9.0	744	27.0	22.5	370	65.5	50.4	4.04

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
FEB												
03...	.6	23.0	14	249	6.39	.3	9.69	112	408	.55	E62.8	.587
MAR												
08...	.6	25.7	14	230	6.58	.3	6.76	121	411	.56	E68.8	.279
APR												
14...	.6	20.4	15	195	5.49	.2	5.15	95.7	330	.45	69.5	.041
27...	.7	30.8	16	240	10.2	.3	1.05	149	450	.61	35.2	E.006
MAY												
14...	.6	21.4	15	179	6.89	.2	6.83	105	335	.46	44.3	E.008
26...	.6	24.3	15	201	6.35	.3	3.36	125	378	.51	53.0	E.006
JUN												
09...	.4	12.6	15	114	2.92	<.2	5.72	60.9	204	.28	54.1	E.009
22...	.7	29.4	15	249	7.46	.3	1.05	149	453	.62	53.8	<.010
JUL												
15...	.7	26.6	16	236	6.62	.3	4.62	124	408	.58	39.1	.019
AUG												
17...	.8	34.1	16	248	11.7	.3	4.98	159	481	.65	28.6	E.006

E--Estimated.

06305700 GOOSE CREEK NEAR ACME, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)
FEB													
03...	.301	.013	1.10	.075	.103	E1	17	.4	<2	50	50	<.06	<.06
MAR													
08...	.141	.009	.66	.040	.075	<1	30	.4	<2	42	44	<.06	<.06
APR													
14...	.088	.008	.53	.078	.139	E1	80	.5	<2	43	47	<.06	<.06
27...	.109	.008	.59	.072	.135	<1	38	.6	<2	51	53	<.06	<.06
MAY													
14...	.522	.010	1.10	.129	.215	E1	103	.6	<2	37	37	<.06	<.06
26...	.132	.006	.52	.068	.175	E2	149	.6	<2	40	46	<.06	<.06
JUN													
09...	.016	.004	.30	.083	.170	3	207	.6	E2	27	32	<.06	<.06
22...	<.016	<.002	.45	.112	.160	E2	46	.7	<2	50	50	<.06	<.06
JUL													
15...	.048	.005	.49	.139	.189	E1	16	1.2	E1	50	51	<.06	<.06
AUG													
17...	.042	.007	.55	.192	.234	E2	16	1.1	E1	49	48	<.06	<.06

Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)
FEB													
03...	68	<.04	<.04	2	1.3	2.6	26	100	<.08	.09	14.8	20.4	26
MAR													
08...	76	<.04	<.04	<1	1.6	1.6	44	170	<.08	.06	15.9	42.1	49
APR													
14...	61	<.04	<.04	4	1.1	1.5	32	290	E.06	.29	10.9	37.0	62
27...	96	<.04	E.02	<1	1.7	2.0	81	250	.13	.24	16.4	56.5	68
MAY													
14...	74	<.04	<.04	4	1.3	1.7	32	380	.09	.41	12.4	43.8	71
26...	83	<.04	<.04	6	1.7	2.2	33	530	E.05	.54	16.1	41.2	80
JUN													
09...	47	<.04	<.04	<1	1.4	2.1	37	590	.19	.68	9.2	24.4	67
22...	103	<.04	<.04	2	2.4	1.9	80	230	E.06	.18	19.3	30.7	46
JUL													
15...	100	<.04	<.04	<1	1.6	1.8	57	160	E.05	.12	19.3	29.8	32
AUG													
17...	137	<.04	<.04	<1	2.1	2.0	48	140	E.05	.12	24.4	6.5	12

E--Estimated.

06305700 GOOSE CREEK NEAR ACME, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, fltrd, ug/L (01145)	Selen- ium, water, unfltrd ug/L (01147)	Stront- ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus- pended sedi- ment, percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
FEB											
03...	<.02	1.48	2.16	.7	.5	415	2.4	3	80	5	E0.77
MAR											
08...	<.02	1.70	2.24	.6	.5	407	2.3	2	78	4	E.67
APR											
14...	<.02	1.08	1.81	.5	E.4	350	2.7	3	60	13	2.7
27...	<.02	2.15	3.58	.5	.6	472	4.2	4	86	8	.63
MAY											
14...	<.02	.85	1.84	.5	.4	335	5.3	6	93	14	1.9
26...	<.02	2.56	2.40	.4	.5	386	3.6	6	84	22	3.1
JUN											
09...	<.02	1.00	1.96	E.4	E.4	223	1.8	7	90	29	7.7
22...	<.02	2.39	2.68	.5	E.4	439	3.1	8	89	5	.59
JUL											
15...	<.02	2.47	2.26	E.2	.5	433	2.6	3	96	3	.28
AUG											
17...	<.02	2.35	2.87	.4	.5	492	4.0	4	79	3	.18

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1	---	---	---	814	776	795	557	514	536	593	548	577
2	---	---	---	826	774	800	624	557	606	549	428	477
3	---	---	---	823	781	801	693	624	661	438	419	428
4	---	---	---	833	791	814	793	691	724	481	437	463
5	---	---	---	864	791	829	830	793	808	492	436	468
6	---	---	---	882	834	861	838	767	813	525	468	500
7	---	---	---	909	854	891	767	363	530	468	442	455
8	---	---	---	932	877	901	363	336	347	473	446	459
9	---	---	---	934	889	918	363	339	347	506	473	490
10	---	---	---	946	887	916	386	363	371	---	---	---
11	---	---	---	996	893	936	410	360	385	554	516	536
12	---	---	---	935	750	857	469	410	451	570	478	535
13	---	---	---	776	532	659	480	441	455	623	524	581
14	---	---	---	578	533	553	535	480	502	647	562	621
15	---	---	---	613	552	586	573	535	555	689	647	666
16	---	---	---	661	609	634	639	573	605	705	660	688
17	---	---	---	721	658	694	650	637	644	705	646	677
18	---	---	---	807	674	754	650	612	632	669	618	651
19	---	---	---	---	---	---	636	605	623	679	648	664
20	---	---	---	810	765	792	647	621	633	714	678	697
21	598	559	578	765	693	729	664	636	652	722	696	710
22	597	564	582	734	560	628	727	664	698	732	708	721
23	583	561	570	563	480	516	742	712	729	748	677	722
24	602	575	590	570	490	532	745	727	737	734	640	676
25	645	602	623	578	568	573	755	712	735	640	600	621
26	700	645	668	603	573	592	713	601	675	616	600	609
27	742	700	718	607	511	574	601	553	573	623	605	615
28	776	742	758	588	547	566	558	523	539	611	530	590
29	791	655	736	620	577	598	575	531	547	652	533	619
30	813	709	787	667	596	634	585	553	567	650	616	632
31	---	---	---	613	502	557	---	---	---	638	604	620
MONTH	---	---	---	---	---	---	838	336	589	---	---	---

06305700 GOOSE CREEK NEAR ACME, WY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUEDP
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER		
1	666	636	653	721	676	701
2	685	663	674	729	689	713
3	701	672	686	741	718	731
4	741	682	704	736	683	716
5	743	704	728	742	677	712
6	757	727	739	728	685	710
7	772	720	746	720	690	706
8	774	727	752	---	---	---
9	767	734	748	---	---	---
10	744	706	732	752	717	735
11	736	706	724	760	702	732
12	738	714	728	757	710	734
13	739	722	729	---	---	---
14	743	707	731	735	713	727
15	744	709	728	739	706	721
16	754	728	743	728	674	700
17	796	741	765	717	682	699
18	831	778	808	709	675	693
19	845	796	823	734	703	717
20	858	805	834	735	707	725
21	843	787	818	707	604	665
22	827	764	797	720	686	703
23	787	729	751	704	642	687
24	750	687	720	672	637	656
25	757	721	745	658	634	645
26	767	726	749	661	637	648
27	775	739	756	663	642	655
28	749	694	723	679	598	646
29	727	685	709	700	657	680
30	716	663	694	693	671	681
31	709	664	691	---	---	---
MONTH	858	636	740	---	---	---

06306250 PRAIRIE DOG CREEK NEAR ACME, WY

LOCATION.--Lat 44°59'02", long 106°50'21", in NE¼SW¼SW¼ sec. 23, T.58 N., R.83 W., Sheridan County, Hydrologic Unit 10090101, on right bank 600 ft upstream from county bridge, 0.9 mi upstream from mouth, 2.8 mi downstream from Coutant Creek, and 7.6 mi northeast of Acme.

DRAINAGE AREA.--358 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to September 1979, June 2000 to current year. Records for May 1965 to September 1970 in files of Wyoming State Engineer's Office.

GAGE.--Water-stage recorder. Elevation of gage is 3,450 ft above NGVD of 1929, from topographic map. U.S. Geological Survey data collection platform with satellite telemetry at station.

REMARKS.--Records good except those for November 1-18 and those for estimated daily discharges, which are poor. Diversions for irrigation of about 13,600 acres above station, of which about 60 acres are below station. Flow supplemented by 3 transbasin diversions from North Piney Creek and South Piney Creek via Prairie Dog Creek ditch, Piney and Cruse ditch, and Mead-Coffeen ditch.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	21	e15	e12	11	e13	16	15	1.8	8.6	26	26
2	29	20	e17	e11	10	e13	15	17	1.5	11	25	24
3	30	20	e16	e10	10	e12	14	11	1.5	7.4	22	22
4	30	20	e15	e9.0	10	e12	14	12	1.4	6.5	19	23
5	32	15	e15	e7.0	10	e14	13	11	1.5	9.7	23	25
6	31	14	e13	e8.0	9.9	e16	12	8.5	1.7	19	22	26
7	32	17	e16	e9.0	9.8	e18	12	6.2	1.4	24	20	25
8	31	19	e15	e9.0	9.7	e20	11	6.7	1.2	23	22	25
9	31	17	e14	e10	9.9	e23	11	4.8	1.0	23	21	23
10	28	18	e14	e10	10	e23	9.1	3.8	1.1	22	17	21
11	24	21	e12	e10	9.8	e24	10	3.1	1.4	21	16	16
12	23	21	e13	e10	9.3	e26	10	2.8	1.6	28	16	17
13	22	23	e13	e10	9.0	e28	10	6.5	1.6	26	15	16
14	22	21	e12	e10	9.1	e30	11	8.5	e1.5	17	11	17
15	22	26	e12	e10	9.3	e33	13	5.5	e1.1	15	7.1	20
16	22	24	e11	e10	9.4	31	12	3.5	e1.5	14	7.3	23
17	22	21	e11	e10	e9.5	30	11	2.9	1.9	14	9.4	24
18	21	19	e10	e9.0	e11	32	9.5	2.7	3.0	14	10	28
19	21	17	e10	e10	e11	32	16	2.7	3.9	11	7.5	27
20	20	17	e10	e11	e11	33	26	2.2	5.4	10	8.0	27
21	20	e15	e10	e11	e11	30	26	3.0	9.1	6.6	9.0	31
22	21	e12	e10	e11	e12	27	25	5.0	8.0	3.4	9.7	35
23	21	e9.0	e9.0	e10	e12	25	e20	6.5	7.2	4.5	11	33
24	19	e9.0	e9.0	e10	e13	24	e16	6.8	9.6	16	12	31
25	20	e15	e8.0	e10	e13	23	e12	6.3	9.0	26	12	31
26	19	e16	e8.0	e10	e14	23	e9.0	4.9	9.5	33	15	28
27	19	e16	e8.0	e10	e15	22	e6.0	2.4	5.5	25	16	28
28	20	e17	e9.0	10	e14	20	e9.0	1.7	5.7	27	20	28
29	22	e17	e9.0	11	e14	19	e11	1.7	6.1	25	24	31
30	26	e16	e9.0	11	---	18	e13	1.7	6.3	27	23	35
31	30	---	e9.0	12	---	16	---	2.0	---	24	23	---
TOTAL	767	533.0	362.0	311.0	316.7	710	402.6	178.4	113.0	541.7	499.0	766
MEAN	24.7	17.8	11.7	10.0	10.9	22.9	13.4	5.75	3.77	17.5	16.1	25.5
MAX	37	26	17	12	15	33	26	17	9.6	33	26	35
MIN	19	9.0	8.0	7.0	9.0	12	6.0	1.7	1.0	3.4	7.1	16
AC-FT	1,520	1,060	718	617	628	1,410	799	354	224	1,070	990	1,520

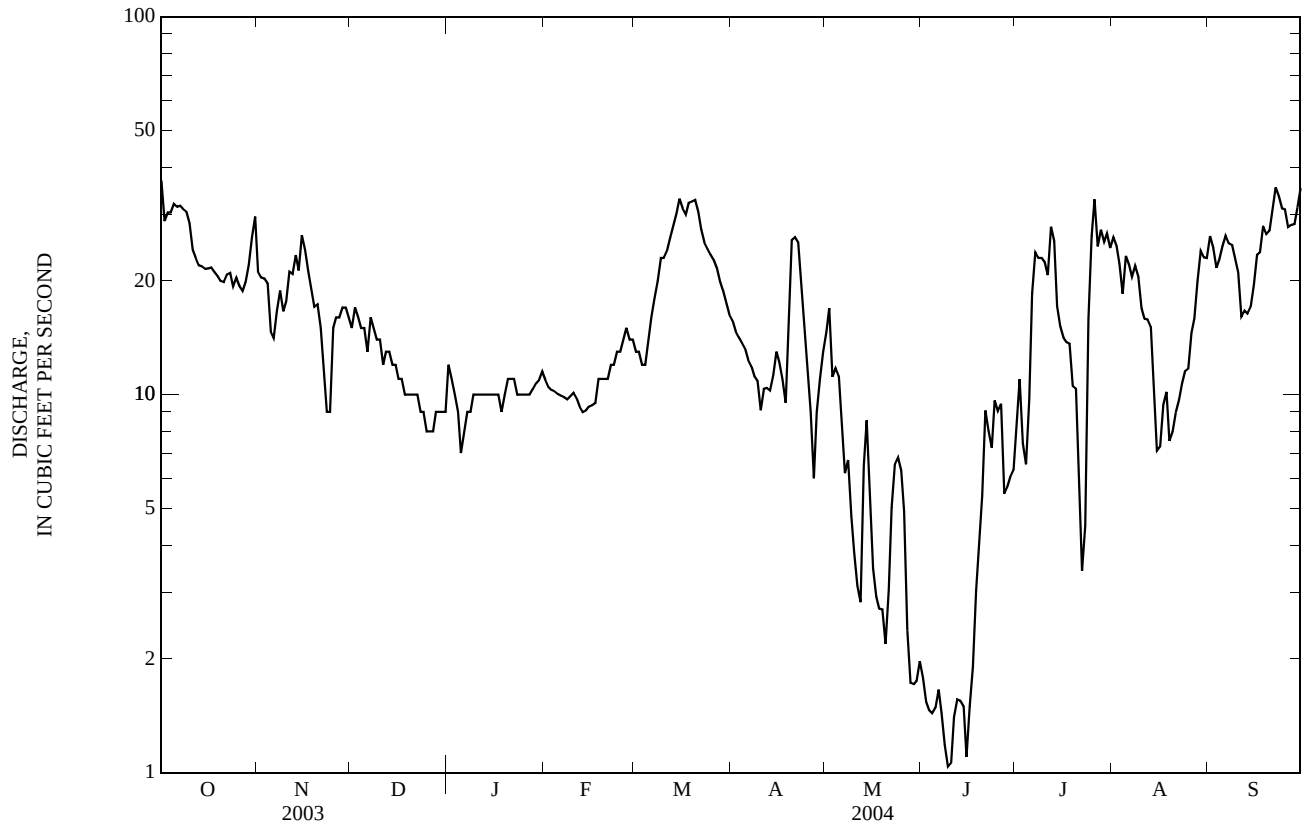
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2004, BY WATER YEAR (WY)*

MEAN	36.2	27.7	22.1	17.5	31.7	72.1	55.7	75.1	33.0	18.8	24.9	37.8
MAX	59.5	43.6	32.3	26.7	82.7	167	101	384	86.2	45.0	45.7	79.0
(WY)	(1974)	(1974)	(1976)	(1974)	(1974)	(1972)	(1971)	(1978)	(1978)	(1975)	(1978)	(1973)
MIN	15.5	12.3	10.9	8.55	9.49	16.7	13.4	5.75	3.09	4.39	3.00	13.4
(WY)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2004)	(2004)	(2002)	(2001)	(2001)	(2001)

06306250 PRAIRIE DOG CREEK NEAR ACME, WY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1971 - 2004*	
ANNUAL TOTAL	9,371.2		5,500.4			
ANNUAL MEAN	25.7		15.0		37.9	
HIGHEST ANNUAL MEAN					72.8	1978
LOWEST ANNUAL MEAN					15.0	2004
HIGHEST DAILY MEAN	250 e	Mar 14	37	Oct 1	3,090	May 19, 1978
LOWEST DAILY MEAN	1.7	Aug 2	1.0	Jun 9	0.48	Jul 7, 2001
ANNUAL SEVEN-DAY MINIMUM	3.3	Jul 30	1.3	Jun 4	0.70	Jul 5, 2001
MAXIMUM PEAK FLOW			a46	Oct 1	c3,940	May 18, 1978
MAXIMUM PEAK STAGE			b2.71	Feb 22	d12.60	May 18, 1978
ANNUAL RUNOFF (AC-FT)	18,590		10,910		27,450	
10 PERCENT EXCEEDS	49		27		64	
50 PERCENT EXCEEDS	16		13		27	
90 PERCENT EXCEEDS	8.5		4.9		10	

*--For period of operation.
a--Gage height, 2.05 ft.
b--Backwater from ice.
c--From rating curve extended above 760 ft^3/s on basis of slope-area determination of peak flow.
d--From floodmarks.
e--Estimated.



06306250 PRAIRIE DOG CREEK NEAR ACME, WY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 30, 2004 to September 30, 2004 (intermittent operation).

INSTRUMENTATION.--Specific conductance probe installed April 30, 2004.

REMARKS.--Daily specific conductance records rated good except for missing record due to instrument malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD:
SPECIFIC CONDUCTANCE: Maximum daily, 2,510 microsiemens per centimeter (µS/cm) at 25°C, June 10, 2004; minimum daily, 739 µS/cm at 25°C, July 27, 2004.

EXTREMES FOR CURRENT YEAR:
SPECIFIC CONDUCTANCE: Maximum daily during period of operation, 2,510 microsiemens per centimeter (µS/cm) at 25°C, June 10; minimum daily, 739 µS/cm at 25°C, July 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
FEB													
04...	1045	10	670	11.9	93	7.8	1,620	-4.0	.0	810	163	98.4	7.80
MAR													
09...	1115	E23	673	11.2	89	8.4	1,560	17.0	.5	780	152	97.3	9.15
APR													
14...	1130	11	668	9.8	97	8.4	1,330	16.0	9.0	670	121	88.3	7.84
27...	0815	6.0	673	9.0	91	8.4	1,460	9.0	10.0	670	129	83.7	7.04
MAY													
13...	1330	6.5	672	11.3	114	8.4	2,080	13.5	10.0	930	170	121	10.2
26...	1700	3.5	664	13.4	154	8.3	1,910	19.0	15.0	890	159	120	10.4
JUN													
09...	1045	1.2	672	8.6	98	8.0	2,510	19.5	15.0	1,100	195	152	11.9
21...	1630	11	674	9.6	118	8.3	1,670	22.0	19.0	780	149	98.7	9.52
JUL													
14...	1100	17	674	8.3	109	8.3	944	35.0	22.0	400	81.8	48.0	5.41
AUG													
18...	1030	9.5	678	9.7	114	8.3	1,400	19.0	17.0	660	131	80.4	7.59
SEP													
15...	1200	19	671	10.4	110	8.5	1,140	20.5	12.0	560	116	66.3	6.06

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia water, fltrd, mg/L as N (00608)
FEB													
04...	1	85.9	19	299	5.33	.3	15.7	542	1,100	1.50	29.8	--	.052
MAR													
09...	1	92.9	20	289	5.47	.3	12.3	608	1,160	1.68	E77.0	1,240	.045
APR													
14...	1	86.4	22	275	5.49	.3	7.20	489	972	1.32	28.9	--	E.005
27...	2	104	25	307	4.78	.3	9.93	537	1,060	1.53	18.3	1,130	E.006
MAY													
13...	3	177	29	331	7.14	.3	14.1	868	1,570	2.34	30.2	1,720	.026
26...	2	137	25	291	6.55	.3	9.46	792	1,410	2.08	14.4	1,530	<.010
JUN													
09...	3	208	29	381	8.30	.4	11.5	1,090	1,910	2.75	6.55	2,020	.015
21...	2	109	23	309	5.50	.3	13.4	631	1,200	1.76	38.4	1,290	<.010
JUL													
14...	1	44.9	19	226	2.66	.3	14.4	283	619	.92	31.0	676	.040
AUG													
18...	1	74.8	20	293	4.15	.3	14.7	501	992	1.40	26.5	1,030	.013
SEP													
15...	1	53.6	17	268	2.79	.3	13.9	362	781	1.13	42.7	832	--

E--Estimated.

06306250 PRAIRIE DOG CREEK NEAR ACME, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, wat unf mg/L (62855)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)
FEB													
04...	.634	.003	.008	.037	.90	<2	234	.7	<2	47	50	<.06	<.06
MAR													
09...	.442	.003	.018	.21	1.14	<2	1,500	.8	2	39	68	<.06	.15
APR													
14...	<.016	<.002	<.006	.018	.29	E1	78	.7	<2	35	40	<.06	<.06
27...	<.016	<.002	E.003	.020	.26	<2	103	.7	<2	42	45	<.06	<.06
MAY													
13...	.231	.004	E.005	.023	.59	<2	38	.9	<2	53	48	<.06	<.06
26...	<.016	<.002	<.006	.040	.32	2	266	.9	<2	50	55	<.06	E.03
JUN													
09...	.022	E.001	.013	.023	.37	E1	59	.9	E2	56	56	<.06	<.06
21...	.059	.003	<.006	.117	.69	E1	772	.8	E1	49	64	<.06	.08
JUL													
14...	.226	.004	.016	.179	.96	10	1,370	.9	E1	31	56	<.06	.16
AUG													
18...	.087	E.001	.010	.036	.39	<2	123	1.0	<10	44	44	<.06	<.06
SEP													
15...	--	--	--	--	--	--	466	.8	--	--	37	--	E.05

Date	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)
FEB													
04...	126	<.04	<.04	5	3.0	8.3	8	590	<.08	.35	33.5	73.7	105
MAR													
09...	109	<.04	.06	<1	3.8	7.4	18	3,600	<.08	2.40	35.9	52.3	289
APR													
14...	142	<.04	<.04	8	2.9	3.7	E6	240	<.08	.13	31.6	59.7	74
27...	109	<.04	<.04	<1	3.2	4.3	13	320	E.07	.17	30.4	120	139
MAY													
13...	168	<.04	<.04	10	4.9	5.4	13	190	<.08	.07	49.4	205	193
26...	151	<.04	<.04	13	5.2	8.2	15	750	<.08	.48	55.4	177	217
JUN													
09...	185	<.04	<.04	<1	5.8	8.9	E14	430	.19	.16	59.5	394	398
21...	148	<.04	.05	1	4.7	7.1	10	2,270	<.08	1.49	39.4	244	474
JUL													
14...	88	<.04	.07	3	2.9	6.1	16	3,400	<.08	2.32	20.3	55.7	383
AUG													
18...	133	<.04	<.04	<1	3.5	4.1	7	410	<.08	.23	34.4	73.6	103
SEP													
15...	--	--	--	--	--	--	E3	--	--	--	--	42.3	--

E--Estimated.

06306250 PRAIRIE DOG CREEK NEAR ACME, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, fltrd, ug/L (01145)	Selen- ium, water, unfltrd ug/L (01147)	Stront- ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus- pended sedi- ment, percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
FEB											
04...	<.02	3.71	5.78	2.1	1.5	2,080	2.1	5	79	61	1.6
MAR											
09...	<.02	5.21	7.46	1.6	1.6	1,940	2.6	16	89	192	E.58
APR											
14...	<.02	2.29	3.69	1.0	.9	1,800	1.4	E2	76	47	1.4
27...	<.02	2.81	5.94	.9	.9	1,710	2.6	13	74	38	.62
MAY											
13...	<.02	2.38	5.37	2.1	1.6	2,290	4.0	3	65	38	.67
26...	<.02	6.10	5.75	1.6	1.4	2,260	3.3	6	78	105	.99
JUN											
09...	<.02	3.76	8.28	1.4	1.3	2,640	4.1	5	84	78	.25
21...	<.02	4.57	5.52	1.1	1.5	2,000	2.5	9	90	178	5.3
JUL											
14...	<.02	2.99	5.55	.7	.6	1,060	1.8	12	97	172	7.9
AUG											
18...	<.02	1.49	4.24	1.2	.9	1,710	1.8	5	90	78	2.0
SEP											
15...	--	--	--	--	1.4	--	--	--	91	85	4.4

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1	1,280	1,150	1,230	---	---	---	1,330	1,290	1,320	851	823	836
2	1,150	1,080	1,110	---	---	---	1,290	1,180	1,230	862	845	854
3	1,260	1,130	1,220	---	---	---	1,200	1,150	1,170	880	856	867
4	---	---	---	---	---	---	1,290	1,200	1,250	920	878	899
5	---	---	---	---	---	---	1,300	1,280	1,300	918	901	913
6	---	---	---	---	---	---	1,280	1,160	1,230	902	893	897
7	---	---	---	---	---	---	1,160	990	1,090	896	887	892
8	---	---	---	---	---	---	990	966	972	919	888	903
9	---	---	---	---	---	*2,510	999	958	977	935	909	918
10	---	---	---	2,510	2,480	2,490	1,020	993	1,000	1,010	935	969
11	---	---	---	2,490	2,400	2,450	1,030	1,000	1,020	1,060	1,010	1,030
12	---	---	---	2,490	2,470	2,480	1,000	924	959	1,120	1,060	1,090
13	---	---	*2,080	---	---	---	940	828	889	1,150	1,120	1,140
14	---	---	---	---	---	---	984	897	938	1,170	1,140	1,150
15	---	---	---	---	---	---	982	953	961	1,220	1,170	1,190
16	---	---	---	---	---	---	1,090	972	1,040	1,320	1,220	1,270
17	---	---	---	2,340	2,210	2,260	1,130	1,080	1,100	1,360	1,320	1,350
18	---	---	---	2,410	2,210	2,310	1,120	1,090	1,110	1,370	1,330	1,350
19	---	---	---	2,240	1,940	2,100	1,180	1,080	1,130	1,570	1,370	1,490
20	---	---	---	1,970	1,530	1,850	1,250	1,180	1,220	1,560	1,410	1,500
21	---	---	---	1,840	1,580	1,720	1,260	1,210	1,230	1,410	1,370	1,390
22	---	---	---	1,600	1,510	1,560	1,430	1,260	1,350	1,390	1,360	1,380
23	---	---	---	1,570	1,460	1,550	1,500	1,430	1,470	1,370	1,320	1,360
24	---	---	---	1,460	1,310	1,370	1,490	1,190	1,390	1,320	1,240	1,260
25	---	---	---	1,310	1,260	1,270	1,190	923	1,040	1,240	1,200	1,220
26	---	---	*1,910	1,260	1,170	1,210	923	753	816	1,210	1,080	1,150
27	---	---	---	1,230	1,160	1,200	775	739	751	1,090	1,060	1,080
28	---	---	---	1,290	1,230	1,260	812	775	797	1,060	1,000	1,030
29	---	---	---	1,320	1,280	1,300	853	812	831	1,000	915	960
30	---	---	---	1,320	1,300	1,310	859	824	849	948	921	934
31	---	---	---	---	---	---	825	807	818	966	939	953
MONTH	---	---	---	---	---	---	1,500	739	1,070	1,570	823	1,100

*--Instantaneous value from USGS sample.

06306250 PRAIRIE DOG CREEK NEAR ACME, WY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
	SEPTEMBER		
1	980	936	960
2	1,010	979	992
3	1,010	987	994
4	1,050	1,010	1,020
5	1,070	1,050	1,060
6	1,080	1,070	1,070
7	1,080	1,060	1,070
8	1,080	1,060	1,060
9	1,080	1,030	1,060
10	1,030	1,020	1,030
11	1,060	1,030	1,040
12	1,090	1,060	1,070
13	1,110	1,090	1,100
14	1,140	1,110	1,130
15	1,180	1,140	1,160
16	1,160	1,060	1,100
17	1,060	1,010	1,040
18	1,030	1,000	1,010
19	1,060	1,030	1,040
20	1,070	1,040	1,050
21	1,060	1,010	1,040
22	1,010	964	979
23	1,030	964	996
24	1,060	1,030	1,040
25	1,080	1,060	1,070
26	1,170	1,080	1,120
27	1,170	1,150	1,160
28	1,190	1,170	1,180
29	1,190	1,130	1,170
30	1,130	1,080	1,090
31	---	---	---
MONTH	1,190	936	1,060

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT

LOCATION.--Lat 45°00'32", long 106°50'08" (NAD 27), in NW¼NW¼NE¼ sec.33, T.9 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 1 mi north of Wyoming-Montana State line, 1.4 mi southeast of Decker, 1.6 mi upstream from Badger Creek, and at river mile 200.9.

DRAINAGE AREA.--1,453 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year. Records published as "near Decker" May 1928 to September 1938, not equivalent owing to intervening drainage area.

REVISED RECORDS.--WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,429.14 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by many small reservoirs in Wyoming, combined capacity, about 15,000 acre-ft. Diversions for irrigation of about 64,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	203	e160	e140	e135	e150	154	136	203	167	93	66
2	177	203	e155	e135	e140	e145	163	126	177	221	83	59
3	169	207	e150	e125	e140	e140	170	112	146	223	78	60
4	167	205	e145	e125	e140	e150	168	114	134	190	73	61
5	164	206	e140	e120	e135	e150	161	130	130	217	78	73
6	162	e195	e135	e110	e140	e150	168	169	135	313	82	89
7	159	e200	e145	e125	e140	e145	182	218	169	303	72	84
8	161	e205	e155	e135	e145	e150	188	223	228	253	68	81
9	156	e210	e150	e130	e150	e155	194	218	215	223	68	72
10	148	e215	e145	e130	e150	e160	193	212	198	199	65	66
11	152	e200	e140	e130	e145	e170	165	194	215	175	69	56
12	159	e190	e145	e130	e140	e175	157	204	288	166	71	55
13	159	e180	e130	e125	e130	e180	151	234	259	148	69	63
14	166	e185	e140	e130	e140	e185	161	218	225	121	65	65
15	177	e190	e145	e130	e150	e190	173	188	195	108	54	71
16	174	e190	e145	e130	e155	192	174	164	167	103	49	88
17	180	e180	e140	e135	e160	188	168	149	154	112	51	97
18	181	173	e145	e130	e160	194	163	159	165	120	51	101
19	182	160	e140	e135	e160	192	172	185	164	102	47	102
20	180	158	e140	e135	e160	192	174	198	169	94	48	110
21	175	e150	e145	e135	e165	188	171	201	176	82	47	127
22	175	e145	e150	e130	e155	176	168	247	167	70	47	161
23	176	e150	e150	e140	e155	170	163	264	163	66	50	163
24	176	e155	e145	e140	e155	168	143	269	152	92	52	163
25	177	e155	e140	e135	e160	173	125	244	155	135	53	162
26	177	e160	e145	e125	e155	177	121	220	179	135	54	154
27	183	e160	e150	e120	e160	171	102	200	178	104	49	149
28	194	e155	e145	e115	e165	175	103	187	193	101	62	151
29	201	e160	e140	e120	e160	170	132	174	176	100	77	184
30	206	e160	e135	e130	---	158	148	176	158	102	74	179
31	207	---	e140	e135	---	154	---	220	---	98	70	---
TOTAL	5,405	5,405	4,475	4,010	4,345	5,233	4,775	5,953	5,433	4,643	1,969	3,112
MEAN	174	180	144	129	150	169	159	192	181	150	63.5	104
MAX	207	215	160	140	165	194	194	269	288	313	93	184
MIN	148	145	130	110	130	140	102	112	130	66	47	55
AC-FT	10,720	10,720	8,880	7,950	8,620	10,380	9,470	11,810	10,780	9,210	3,910	6,170

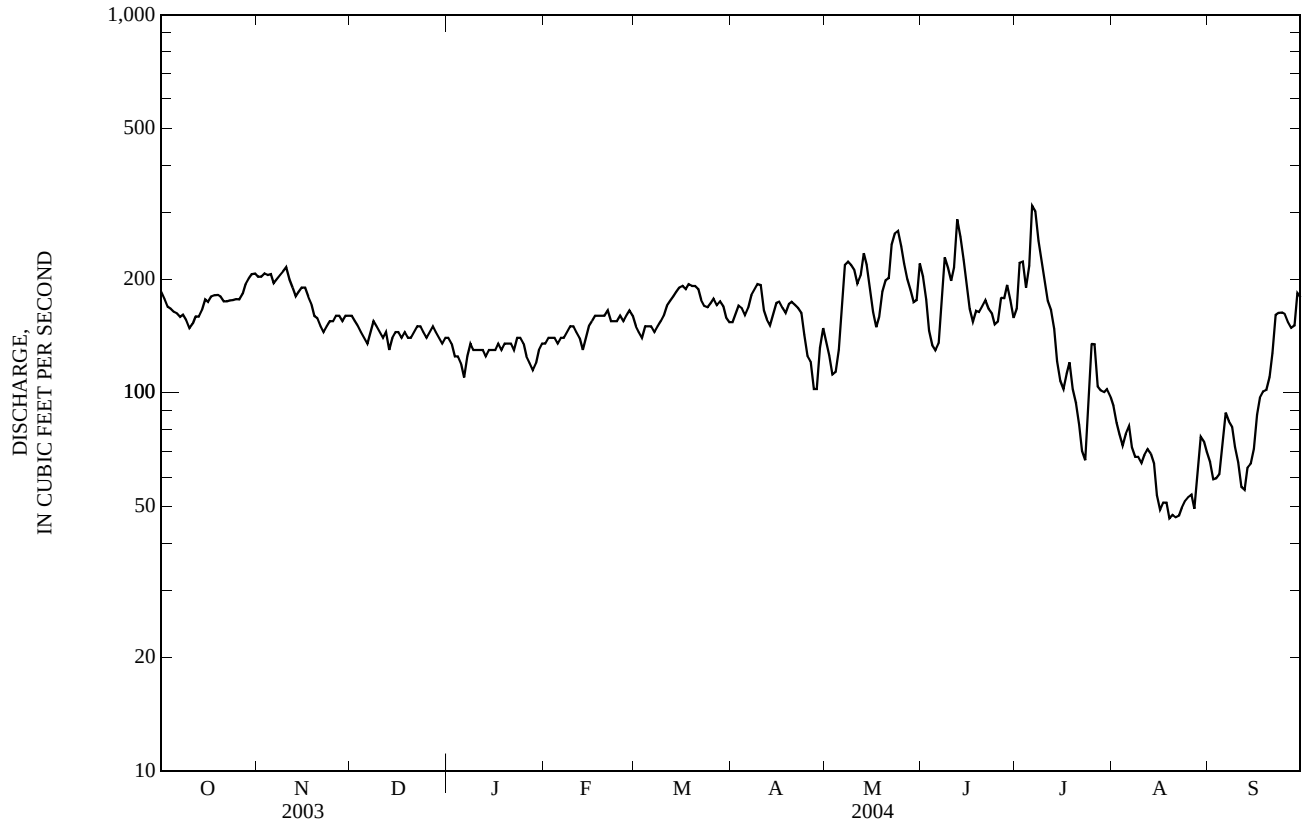
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2004, BY WATER YEAR (WY)

MEAN	249	221	177	175	225	303	350	1,111	1,597	450	171	214
MAX	403	324	271	330	672	855	676	3,283	3,570	1,674	475	615
(WY)	(1969)	(1974)	(1976)	(1974)	(1971)	(1972)	(1977)	(1978)	(1978)	(1975)	(1968)	(1968)
MIN	116	126	102	78.7	79.8	88.5	124	192	176	54.7	13.1	73.3
(WY)	(1961)	(2002)	(1985)	(2002)	(2002)	(2002)	(1961)	(2004)	(2001)	(2001)	(2001)	(2001)

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1961 - 2004	
ANNUAL TOTAL	130,878		54,758			
ANNUAL MEAN	359		150		437	
HIGHEST ANNUAL MEAN					862	1978
LOWEST ANNUAL MEAN					138	2002
HIGHEST DAILY MEAN	2,690	Jun 2	313	Jul 6	15,400	May 19, 1978
LOWEST DAILY MEAN	55	Aug 7	47	Aug 19	5.4	Aug 24, 1961
ANNUAL SEVEN-DAY MINIMUM	59	Aug 3	49	Aug 16	7.2	Aug 22, 1961
MAXIMUM PEAK FLOW			a326	Jul 6	17,500	May 12, 1978
MAXIMUM PEAK STAGE			b3.44	Feb 21	14.25	May 12, 1978
INSTANTANEOUS LOW FLOW			44	Aug 19	3.0	Aug 23, 1961
ANNUAL RUNOFF (AC-FT)	259,600		108,600		316,400	
10 PERCENT EXCEEDS	930		203		1,010	
50 PERCENT EXCEEDS	180		154		230	
90 PERCENT EXCEEDS	91		73		110	

a--Gage heght, 3.10 ft.
b--Backwater from ice.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1976, November 1980 to December 1986, August 2000 to current year.
WATER TEMPERATURE: October 1965 to September 1976.

INSTRUMENTATION: Specific conductance probe installed Aug. 21, 2000.

REMARKS.--Specific conductance record is rated good. Missing conductance data for Nov. 23 due to ice conditions, Feb. 19, 20, and 28, May 4-13, and June 9, 10 are due to equipment malfunction, and June 25 to July 6 due to the probe being packed in mud. Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,490 microsiemens per centimeter (µS/cm), Aug. 12, 1966, Jan. 11, 1972; minimum daily, 161 µS/cm, May 30 and June 1, 2003.
WATER TEMPERATURE: Maximum, 30.5°C, July 16, 1966; minimum, 0.0°C on many days during winter.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 909 microsiemens per centimeter (µS/cm), Aug. 27; minimum, 384 µS/cm, June 11.

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
06...	1800	162	670	8.3	93	8.8	643	24.0	14.5	290	58.5	35.8	2.87
NOV													
18...	1330	198	668	14.3	115	8.5	636	18.0	1.0	300	62.9	35.6	2.52
DEC													
04...	1115	E145	687	13.7	104	8.2	636	7.0	0.0	300	63.1	35.6	2.40
JAN													
20...	1400	E135	676	10.7	83	8.3	653	10.5	0.0	310	66.0	35.7	2.44
FEB													
04...	1300	E140	669	14.5	113	8.1	705	7.0	0.0	320	65.9	36.7	2.47
23...	1630	E155	670	15.0	117	8.3	629	12.0	0.0	280	57.5	33.4	4.59
MAR													
09...	1345	E155	670	12.6	100	8.5	680	24.0	.5	320	64.8	38.5	3.01
22...	1800	171	671	10.2	107	8.5	725	15.0	11.5	320	63.3	39.7	3.51
APR													
14...	1315	168	666	10.6	113	8.3	562	23.0	12.0	250	52.9	29.3	2.17
26...	1645	120	678	10.6	124	8.7	584	24.0	17.0	250	51.1	29.8	2.54
MAY													
13...	1615	237	678	12.6	130	8.6	400	12.0	11.5	180	38.9	19.2	1.79
26...	1500	219	664	9.6	112	8.5	477	19.0	16.0	220	47.5	24.2	2.32
JUN													
09...	1315	226	672	8.1	100	8.4	403	22.5	19.5	180	38.1	20.0	1.97
22...	1315	171	674	10.7	131	8.6	534	24.0	19.0	230	48.3	27.3	2.50
JUL													
14...	1420	120	674	8.9	127	8.6	570	39.0	27.0	230	45.2	28.8	2.75
27...	1015	106	675	8.5	107	8.5	634	24.0	20.5	280	53.1	35.0	3.28
AUG													
18...	1250	52	679	8.2	103	8.4	810	26.0	21.0	340	57.6	46.9	4.01
24...	0835	57	671	6.3	73	8.4	876	17.0	16.0	360	62.4	49.3	4.30
SEP													
15...	1405	68	671	11.3	135	8.7	780	24.0	17.5	350	61.5	47.7	4.08
27...	1400	152	683	9.3	103	8.4	643	14.5	15.0	300	59.0	36.0	3.05

E--Estimated.

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
OCT								
06...	.7	29.2	18	182	3.89	.2	4.61	123
NOV								
18...	.7	27.5	16	189	4.10	.3	7.08	116
DEC								
04...	.7	26.7	16	202	4.73	.3	6.80	119
JAN								
20...	.7	28.0	16	206	5.43	.3	7.73	115
FEB								
04...	.8	31.0	17	179	4.60	.3	7.23	128
23...	.7	26.7	17	214	6.28	.3	6.41	115
MAR								
09...	.8	33.6	18	216	5.43	.2	4.62	149
22...	.9	35.5	19	227	5.49	.3	2.61	170
APR								
14...	.7	26.6	18	197	4.44	.2	2.66	102
26...	.9	32.5	22	204	4.47	.3	2.04	106
MAY								
13...	.6	18.9	19	145	2.87	.2	5.96	65.5
26...	.7	22.7	18	168	2.85	.2	5.07	82.1
JUN								
09...	.6	18.3	18	155	2.56	.2	4.81	58.7
22...	.7	26.0	19	196	3.03	.2	2.68	88.0
JUL								
14...	.9	29.8	22	194	2.93	.3	4.41	102
27...	.8	31.6	20	216	4.32	.3	6.78	124
AUG								
18...	1	49.9	24	245	5.32	.3	6.42	191
24...	1	58.6	26	271	4.75	.4	6.95	214
SEP								
15...	1	48.6	23	239	4.74	.4	5.46	186
27...	.7	29.3	18	228	3.19	.3	5.55	125

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
06...	367	.52	166	90	69	30
NOV						
18...	369	.52	203	74	63	34
DEC						
04...	380	.53	E153	35	15	E5.9
JAN						
20...	384	.58	E155	62	10	E3.6
FEB						
04...	385	.61	E171	66	11	E4.2
23...	379	.52	E159	90	8	E3.4
MAR						
09...	429	.61	E187	92	54	E23
22...	457	.62	211	70	57	26
APR						
14...	339	.46	154	92	24	11
26...	351	.49	118	89	19	6.2
MAY						
13...	241	.33	154	91	19	12
26...	288	.41	177	92	36	21
JUN						
09...	238	.32	145	89	40	24
22...	316	.44	149	90	28	13
JUL						
14...	332	.45	108	90	28	9.1
27...	388	.55	116	85	54	15
AUG						
18...	508	.69	71.4	94	26	3.7
24...	564	.79	89.3	92	28	4.3
SEP						
15...	502	.68	92.2	83	39	7.2
27...	398	.56	170	87	53	22

E--Estimated.

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
OCT													
06...	1800	<.04	<.016	E.001	.22	<.006	.027	--	164	.5	<2	--	46
NOV													
18...	1330	<.04	.034	<.002	.20	<.006	.018	--	66	.3	<2	--	51
DEC													
04...	1115	<.04	E.009	<.002	.21	<.006	.016	--	33	.4	<2	--	50
FEB													
04...	1300	.104	.247	.005	.49	E.005	.016	<2	20	.4	<2	51	52
MAR													
09...	1345	.024	.085	.003	.50	E.004	.070	E1	374	.4	<2	39	50
APR													
14...	1315	E.005	<.016	<.002	.34	<.006	.043	E1	161	.5	<2	49	54
26...	1645	E.006	<.016	<.002	.34	E.003	.040	E1	128	.6	<2	51	55
MAY													
13...	1615	E.007	<.016	E.001	.37	E.005	.047	2	157	.5	<2	39	41
26...	1500	<.010	<.016	<.002	.23	E.003	.065	E1	242	.5	<2	44	52
JUN													
09...	1315	<.010	<.016	E.001	.23	<.006	.071	2	250	.6	E2	44	50
22...	1315	<.010	<.016	<.002	.30	<.006	.045	E1	198	.5	<2	49	52
JUL													
27...	1015	<.010	<.016	<.002	.50	E.003	.061	E1	341	.9	<2	52	58
AUG													
24...	0835	.030	<.016	E.001	.44	<.006	.037	E2	185	1.0	<2	65	68

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)
OCT													
06...	--	<.06	--	78	--	<.04	<.8	--	2.3	10	340	--	.30
NOV													
18...	--	<.06	--	70	--	<.04	E.6	--	2.2	12	150	--	.14
DEC													
04...	--	<.06	--	69	--	<.04	<.8	--	2.2	16	80	--	.06
FEB													
04...	<.06	<.06	62	68	<.04	<.04	2	1.2	2.9	17	70	<.08	E.05
MAR													
09...	<.06	E.03	66	62	<.04	<.04	<1	1.7	2.3	27	810	<.08	.58
APR													
14...	<.06	<.06	50	--	<.04	<.04	<1	1.2	1.5	36	460	E.05	.36
26...	<.06	<.06	56	56	<.04	<.04	<1	1.4	1.6	41	350	E.06	.31
MAY													
13...	<.06	<.06	38	35	<.04	<.04	3	1.0	1.4	30	360	<.08	.30
26...	<.06	E.04	47	48	<.04	E.02	4	1.4	2.9	26	630	E.04	.62
JUN													
09...	<.06	E.04	46	48	<.04	<.04	<1	1.2	1.7	41	640	.14	.61
22...	<.06	<.06	54	56	<.04	<.04	<1	1.6	1.7	22	430	<.08	.46
JUL													
27...	<.06	E.04	77	79	<.04	E.03	<1	1.6	2.6	9	730	<.08	.66
AUG													
24...	<.06	<.06	101	105	<.04	<.04	<1	2.1	2.6	14	420	<.08	.36

Date	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
OCT											
06...	--	12.8	37.5	--	--	2.90	--	.4	--	--	4
NOV											
18...	--	11.1	19.5	--	--	2.47	--	E.4	--	--	3
DEC											
04...	--	11.0	12.8	--	--	2.60	--	E.4	--	--	2
FEB											
04...	16.6	16.9	18	<.02	1.63	2.40	.6	.6	488	1.4	2
MAR											
09...	16.5	27.9	93	<.02	1.68	2.70	.5	.6	478	1.8	4
APR											
14...	13.2	29.1	58	<.02	1.40	2.05	E.3	E.2	365	1.1	3
26...	15.5	24.2	46	<.02	1.52	2.81	E.4	E.3	367	1.1	E1
MAY											
13...	9.3	11.1	42	<.02	.77	2.00	E.3	<.4	207	2.5	3
26...	15.1	15.8	60	--	2.10	2.85	E.2	<.4	281	1.4	5
JUN											
09...	11.1	14.7	70	<.02	1.16	2.61	E.3	<.4	231	1.8	17
22...	13.6	9.6	45	<.02	1.82	1.59	<.4	.4	305	1.2	3
JUL											
27...	19.5	14.2	90	<.02	2.52	3.08	.5	.4	454	1.3	6
AUG											
24...	30.2	16.0	51	<.02	2.04	3.06	.6	.7	664	1.3	3

E--Estimated.

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	608	594	599	693	642	658	661	622	643	762	729	744
2	656	607	630	766	672	717	668	609	638	757	734	744
3	673	650	660	797	734	761	653	605	629	754	728	743
4	669	649	660	771	741	750	663	610	633	764	729	748
5	669	644	656	770	719	752	708	656	684	794	744	769
6	665	639	653	846	753	781	696	642	669	846	786	822
7	671	646	658	866	747	807	694	620	657	830	815	823
8	678	642	659	811	734	779	670	641	655	828	801	819
9	679	653	665	817	729	768	671	632	653	811	769	797
10	704	675	692	777	698	737	678	611	648	772	717	747
11	716	689	704	759	695	732	702	629	670	722	680	702
12	727	711	720	731	693	708	713	661	689	686	664	679
13	739	710	724	744	677	707	792	696	755	678	662	670
14	721	692	710	714	668	690	741	687	723	682	661	673
15	708	692	701	723	652	691	712	655	684	682	669	677
16	720	691	705	710	655	683	683	642	667	683	666	674
17	716	689	703	708	664	687	689	628	661	679	660	669
18	708	685	697	737	662	693	675	626	647	671	657	663
19	708	687	695	709	684	695	709	643	678	682	656	670
20	706	683	694	697	673	687	716	646	680	681	659	668
21	697	682	690	705	662	685	687	649	663	672	653	664
22	705	686	695	765	685	713	679	643	660	673	656	663
23	699	678	691	---	---	---	679	636	661	690	659	674
24	699	682	689	792	739	769	697	641	676	683	658	674
25	711	690	702	776	737	758	727	665	700	671	650	660
26	712	687	700	783	731	760	690	637	668	688	654	677
27	717	688	698	752	706	733	679	653	665	762	682	721
28	708	690	697	745	690	718	678	658	670	789	757	777
29	697	678	689	704	653	684	738	668	711	801	772	785
30	693	646	672	675	643	657	715	676	696	818	794	804
31	651	633	643	---	---	---	757	695	729	811	766	789
MONTH	739	594	682	866	642	723	792	605	673	846	650	722
	FEBRUARY			MARCH			APRIL			MAY		
1	781	731	761	653	620	637	695	671	683	656	564	598
2	736	692	715	669	629	646	692	667	678	659	622	635
3	696	681	687	695	667	682	680	634	656	658	628	644
4	717	688	708	698	660	683	642	612	629	---	---	*613
5	724	704	717	702	630	660	626	598	614	---	---	---
6	720	695	709	702	656	678	617	588	602	---	---	---
7	703	681	695	684	633	661	603	555	575	---	---	---
8	697	677	688	667	591	635	565	532	547	---	---	---
9	686	667	678	707	597	654	540	511	528	---	---	---
10	676	660	668	678	643	659	523	489	506	---	---	---
11	693	660	676	699	614	650	550	517	531	---	---	---
12	706	670	686	683	628	649	560	536	546	---	---	---
13	739	686	716	692	644	679	581	539	554	---	---	*400
14	732	722	727	760	666	699	583	562	572	485	465	480
15	725	692	709	733	680	704	605	566	593	485	461	475
16	713	683	696	729	688	712	601	566	586	461	444	451
17	689	661	676	751	716	734	576	554	565	453	427	441
18	691	650	672	753	732	742	569	546	559	432	420	427
19	---	---	---	764	746	753	602	546	571	451	425	435
20	---	---	---	778	753	767	570	500	534	434	405	420
21	645	606	625	768	748	758	516	496	505	436	407	421
22	673	613	638	767	743	756	524	506	517	475	416	440
23	671	628	649	765	745	755	543	518	528	501	474	491
24	655	619	642	766	741	753	571	540	557	505	497	502
25	692	627	660	757	728	742	597	567	578	497	487	491
26	654	614	633	742	711	727	603	578	591	488	474	483
27	669	592	638	735	702	717	617	593	607	477	463	468
28	---	---	---	714	677	695	649	606	624	476	466	470
29	642	616	628	694	675	685	643	602	628	481	473	478
30	---	---	---	687	671	680	619	589	603	505	471	489
31	---	---	---	693	662	677	---	---	---	493	458	470
MONTH	781	592	681	778	591	698	695	489	579	659	405	486

*--Instantaneous value from USGS sample.

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	501	487	496	---	---	---	688	663	682	821	795	808
2	489	469	480	---	---	---	712	687	702	839	816	831
3	487	469	478	---	---	---	731	686	711	850	833	839
4	501	487	493	---	---	---	731	701	713	869	842	854
5	508	496	501	---	---	---	739	696	718	870	816	848
6	508	472	489	---	---	*485	723	691	706	817	773	789
7	484	423	451	543	520	533	727	698	709	801	774	784
8	530	423	499	540	517	523	757	722	738	812	785	801
9	---	---	*403	520	508	514	766	746	756	818	795	807
10	---	---	---	533	511	518	789	753	767	828	790	810
11	402	384	393	541	525	535	790	762	773	827	804	813
12	416	387	399	561	531	549	783	767	776	852	824	839
13	563	411	477	547	536	542	799	771	784	853	806	830
14	590	543	571	587	542	558	804	782	791	813	789	804
15	545	524	535	618	582	607	799	771	780	818	796	808
16	524	468	490	660	614	629	808	785	798	820	775	805
17	493	480	489	663	620	644	855	804	837	782	730	745
18	525	488	501	622	610	615	857	821	841	750	735	746
19	540	523	530	680	619	646	874	824	847	752	732	743
20	554	528	534	686	661	673	850	815	827	733	708	720
21	571	533	548	721	667	685	854	831	840	718	677	705
22	561	524	541	732	633	667	872	846	861	683	672	677
23	558	531	543	734	656	687	870	852	858	678	664	672
24	569	546	553	723	687	705	893	861	874	676	659	668
25	---	---	---	691	612	642	879	860	867	675	654	666
26	---	---	---	646	628	638	904	869	884	665	652	658
27	---	---	---	659	633	639	909	883	895	669	651	658
28	---	---	---	659	633	649	897	863	881	660	646	653
29	---	---	---	652	638	644	868	800	828	666	633	642
30	---	---	---	663	642	654	802	785	794	651	636	644
31	---	---	---	667	637	648	805	780	794	---	---	---
MONTH	590	384	500	734	508	614	909	663	795	870	633	756

*--Instantaneous value from USGS sample.

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Biomass periphyton, ashfree drymass g/m2 (49954)	Periphyton biomass ash weight, g/m2 (00572)	Periphyton biomass dry weight, g/m2 (00573)	Biomass chlorophyll ratio, periphyton, number (70950)	Pheophytin a, periphyton, mg/m2 (62359)	Chlorophyll a periphyton, mg/m2 (70957)
SEP												
25...	0900	201	8.2	577	14.0	11.0	7.4	220	225.6	172	23	43.0

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

BENTHIC INVERTEBRATE SAMPLES
SEPTEMBER 24, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Naididae	200	3.3
Tubificidae	173	2.9
Sphaeriidae	13	0.2
Physidae	213	3.6
Planorbidae	13	0.2
Hyalella azteca	186	3.1
ODONATA		
Calopterygidae	13	0.2
Coenagrionidae	386	6.5
EPHEMEROPTERA		
Acentrella insignificans	146	2.5
Fallceon quilleri	1117	18.8
Plauditus punctoventris	80	1.3
Stenonema	93	1.6
Tricorythodes	372	6.3
HEMIPTERA		
Belostoma	13	0.2
Corixidae	80	1.3
Ambrysus	40	0.7
TRICHOPTERA		
Protoptila	27	0.4
Cheumatopsyche	13	0.2
Hydropsyche	27	0.4
Hydroptila	13	0.2
Nectopsyche	53	0.9
Oecetis	13	0.2
Limnephilidae	53	0.9
Chimarra	160	2.7
Polycentropus	27	0.4
COLEOPTERA		
Coptotomus	13	0.2
Dubiraphia	226	3.8
Microcylloepus	572	9.6
Stenelmis	279	4.7
Ochthebius	133	2.2
Berosus	27	0.4
DIPTERA		
Ceratopogoninae	27	0.4
Simulium	186	3.1
CHIRONOMIDAE		
Chironomidae-pupae	53	0.9
Cricotopus/Orthocladius	67	1.1
Cricotopus Trifascia Group	333	5.6
Dicrotendipes	27	0.4
Limnophyes	13	0.2
Parakiefferiella	279	4.7
Polypedilum	13	0.2
Rheocricotopus	13	0.2
Thienemannimyia Complex	173	2.9

Total number of taxon	42
Total number of organisums	5,958
Hilsenhoff biotic index	6
EPT abundance	2,194
Number of EPT taxon	14

Richest targeted habitat sample--riffles
Composite of 5 samples (area of 0.25 m^2/sample)
Equipment type--Slack sampler;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Nematoda	5	0.2
Tubificidae	55	2.4
Physidae	20	0.9
Hyalella azteca	5	0.2
ODONATA		
Gomphidae	5	0.2
Coenagrionidae	5	0.2
EPHEMEROPTERA		
Acentrella insignificans	210	9.1
Baetis tricaudatus	5	0.2
Camelobaetidius warreni	5	0.2
Fallceon quilleri	900	38.9
Plauditus punctoventris	60	2.6
Stenonema	150	6.5
Tricorythodes	55	2.4
Neochoroterpes	55	2.4
HEMIPTERA		
Corixidae	5	0.2
Ambrysus	5	0.2
TRICHOPTERA		
Helicopsyche	5	0.2
Cheumatopsyche	5	0.2
Hydropsyche	10	0.4
Oecetis	15	0.6
Chimarra	25	1.1
Polycentropus	5	0.2
LEPIDOPTERA		
Petrophila	5	0.2
COLEOPTERA		
Dubiraphia	35	1.5
Microcylloepus	205	8.9
Stenelmis	20	0.9
DIPTERA		
Simulium	280	12.1
CHIRONOMIDAE		
Chironomidae-pupae	35	1.5
Cricotopus (Isocladius) Sylvestris Group	5	0.2
Cricotopus Trifascia Group	105	4.5
Parakiefferiella	5	0.2
Rheotanytarsus	5	0.2
Thienemannimyia Complex	5	0.2

Total number of taxon	33
Total number of organisums	2,315
Organisums per m^2	1,852
Hilsenhoff biotic index	5.53
EPT abundance	1,505
Number of EPT taxon	14
EPT per m^2	1,204

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

ALGAE SAMPLES
SEPTEMBER 24, 2003

Richest targeted habitat sample
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	4.46	87.8
Amphipleura pellucida	3.32	65.4
Amphora inariensis	0.41	8.17
Amphora pediculus	0.41	8.17
Cocconeis pediculus	1.55	30.6
Cocconeis placentula	3.01	59.2
Cymbella excisa	6.74	133
Cymbella tumida	0.21	4.09
Diatoma mesodon	0.10	2.04
Diatoma moniliformis	1.66	32.7
Diatoma vulgaris	0.21	4.09
Diploneis puella	0.21	4.09
Encyonema auerswaldii	0.10	2.04
Epithemia adnata	0.21	4.09
Epithemia sorex	3.63	71.5
Gomphonema apiculatum	0.21	4.09
Gomphonema olivaceum	0.62	12.3
Gomphonema parvulum	0.73	14.3
Gomphonema pumilum	0.83	16.3
Karayevia clevei	0.21	4.09
Melosira varians	0.73	14.3
Gomphonema pumilum	0.83	16.3
Karayevia clevei	0.21	4.09
Melosira varians	0.73	14.3
Navicula amphiceropsis	0.10	2.04
Navicula canalis	0.52	10.2
Navicula capitatoradiata	0.83	16.3
Navicula caterva	0.21	4.09
Navicula erifuga	0.21	4.09
Navicula germainii	0.41	8.17
Navicula gregaria	0.62	12.3
Navicula lanceolata	0.21	4.09
Navicula minima	0.62	12.3
Navicula recens	0.31	6.13
Navicula reichardtiana	1.87	36.8
Navicula salinicola	0.10	2.04
Navicula symmetrica	0.73	14.3
Navicula tripunctata	0.41	8.17
Navicula veneta	0.10	2.04
Nitzschia agnita	5.28	104
Nitzschia angustata	0.21	4.09
Nitzschia dissipata	6.74	133
Nitzschia frustulum	5.80	114
Nitzschia graciliformis	2.28	44.9
Nitzschia inconspicua	0.21	4.09
Nitzschia microcephala	0.21	4.09
Nitzschia palea	6.32	125
Nitzschia pusilla	0.21	4.09
Nitzschia reversa	0.41	8.17
Nitzschia sociabilis	1.04	20.4
Nitzschia supralitorea	0.21	4.09
Planothidium dubium	0.21	4.09
Planothidium lanceolatum	0.10	2.04
Pleurosigma delicatulum	0.10	2.04
Reimeria sinuata	0.41	8.17
Rhoicosphenia abbreviata	0.52	10.2
Simonsenia delognei	0.41	8.17
Staurosira construens	1.35	26.6
Staurosirella leptostauron	0.52	10.2
Stephanodiscus hantzschii	0.21	4.09
Surirella minuta	0.41	8.17
Surirella ovalis	0.21	4.09
Synedra acus	1.55	30.6
Synedra ulna	2.80	55.1
CHLOROPHYTA		
Ankistrodesmus sp.	0.22	4.33
Mougeotia sp.	0.22	4.33
Scenedesmus sp.	0.44	8.66
CYANOPHYTA		
Anabaena sp.	7.03	139
Oscillatoria sp.	17.6	347
Total algae cells/mm^2		1,971

Depositional targeted habitat sample
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthes delicatula	0.20	0.28
Achnanthidium minutissimum	2.04	2.78
Amphipleura pellucida	1.12	1.53
Amphora inariensis	0.31	0.42
Asterionella formosa	0.41	0.56
Bacillaria paradoxa	0.51	0.70
Biremis circumtexta	0.20	0.28
Cocconeis pediculus	2.96	4.03
Cocconeis placentula	6.34	8.62
Craticula cuspidata	0.10	0.14
Cyclotella meneghiniana	0.61	0.83
Cymbella excisa	0.82	1.11
Cymbella tumida	0.20	0.28
Diatoma vulgaris	0.31	0.42
Diploneis puella	0.10	0.14
Epithemia adnata	0.20	0.28
Epithemia sorex	1.33	1.81
Fragilaria atomus	0.20	0.28
Fragilaria vaucheriae	0.41	0.56
Gomphonema olivaceum	0.51	0.70
Gomphonema parvulum	0.82	1.11
Fragilaria vaucheriae	0.41	0.56
Gomphonema olivaceum	0.51	0.70
Gomphonema parvulum	0.82	1.11
Gomphonema pumilum	1.33	1.81
Gyrosigma acuminatum	0.10	0.14
Hannaea arcus	0.20	0.28
Hippodonta hungarica	0.20	0.28
Karayevia clevei	0.10	0.14
Melosira varians	0.82	1.11
Navicula amphiceropsis	1.43	1.95
Navicula antonii	0.20	0.28
Navicula canalis	2.25	3.06
Navicula capitatoradiata	2.15	2.92
Navicula erifuga	0.41	0.56
Navicula germainii	5.21	7.09
Navicula gregaria	0.41	0.56
Navicula halophila	0.20	0.28
Navicula kotschyi	0.61	0.83
Navicula krasskei	0.20	0.28
Navicula lanceolata	1.12	1.53
Navicula libonensis	0.20	0.28
Navicula minima	0.61	0.83
Navicula pseudanglica	0.20	0.28
Navicula radiosa	0.20	0.28
Navicula reichardtiana	2.86	3.89
Navicula salinicola	1.02	1.39
Navicula sp.	0.10	0.14
Navicula symmetrica	0.92	1.25
Navicula tripunctata	0.51	0.70
Navicula veneta	0.82	1.11
Navicula viridula	0.10	0.14
Navicula weinzierlii	0.20	0.28
Nitzschia acicularis	1.33	1.81
Nitzschia agnita	4.39	5.98
Nitzschia angustatula	0.10	0.14
Nitzschia aurariae	0.20	0.28
Nitzschia dissipata	2.04	2.78
Nitzschia frustulum	6.34	8.62
Nitzschia graciliformis	1.74	2.36
Nitzschia heufleriana	0.10	0.14
Nitzschia palea	7.25	9.87
Nitzschia reversa	2.04	2.78
Nitzschia sp.	0.41	0.56
Nitzschia supralitorea	0.61	0.83
Nitzschia vermicularis	0.41	0.56
Planothidium dubium	0.20	0.28
Planothidium lanceolatum	0.51	0.70
Pleurosigma delicatulum	0.92	1.25
Reimeria sinuata	0.72	0.97
Rhoicosphenia abbreviata	1.12	1.53
Rhopalodia gibba	0.20	0.28
Rhopalodia operculata	0.20	0.28
Simonsenia delognei	0.20	0.28
Staurosira construens	1.84	2.50

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT—Continued

ALGAE SAMPLES--CONTINUED

Depositional targeted habitat sample
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA--Continued		
Staurosirella leptostauron	0.41	0.56
Staurosirella pinnata	0.31	0.42
Surirella angusta	0.20	0.28
Surirella brebissonii	0.10	0.14
Surirella minuta	0.61	0.83
Surirella ovalis	0.61	0.83
Synedra acus	0.20	0.28
Synedra rumpens	0.20	0.28
Synedra ulna	0.41	0.56
Thalassiosira pseudonana	0.10	0.14
Thalassiosira weissflogii	0.20	0.28
Tryblionella apiculata	0.41	0.56
Tryblionella calida	0.31	0.42
Tryblionella hungarica	0.20	0.28
unknown genus	0.20	0.28
CHLOROPHYTA		
Mougeotia sp.	0.28	0.38
CYANOPHYTA		
Chroococcus sp.	1.12	1.5
Oscillatoria sp.	16.8	22.8
Total algae cells/mm^2		136

06307000 TONGUE RIVER RESERVOIR NEAR DECKER, MT

LOCATION.--Lat 45°07'48", long 106°46'13" (NAD 27), in SE¼SE¼NE¼ sec.13, T.8 W., R.40 E., Big Horn County, Hydrologic Unit 10090101, at dam on Tongue River, 4 mi upstream from Post Creek, 7 mi northeast of Decker, and at river mile 189.1.

DRAINAGE AREA.--1,770 mi^2.

PERIOD OF RECORD.--December 1938 to current year. Record prior to September 1939, published only in WSP 1309 and those for January, February 1956, published only in WSP 1729.

GAGE.--Nonrecording gage read most days. Elevation of gage is 3,374.40 ft (NGVD29) (levels by Bureau of Reclamation) New capacity table effective September 1, 1996.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway completed in May 1939. Total capacity, 79,070 acre-ft between elevation 3,374.4 ft, bottom of outlet, and 3,428.4 ft, spillway crest. Prior to October 1947, usable contents was 73,950 acre-ft at same elevations, due to sedimentation study. Dead storage, 711 acre-ft below elevation, 3,374.4 ft. Figures given herein represent usable contents. Water is used for irrigation. Records furnished by Montana Department of Natural Resources and Conservation.

REVISED RECORDS.--WSP 1309: 1947-50. WSP 1729: 1951, drainage area.

EXTREMES FOR PERIOD OF RECORD.:--Maximum contents observed, 79,500 acre-ft, June 21, 1999 and June 30, 2003, elevation, 3,428.70 ft; no storage October 1939 to February 1940.

EXTREMES FOR CURRENT YEAR.:--Maximum mothend contents, 48,970 acre-ft, Apr. 30, elevation, 3,419.30 ft; minimum monthend contents, 26,620 acre-ft, Aug. 31 and Sept. 30, elevation, 3,409.30 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	3,415.40	39,050	--
October 31	3,416.30	41,160	+2,110
November 30	3,417.10	43,240	+2,080
December 31	3,417.80	45,070	+1,830
Calendar Year 2003	--	--	+14,360
January 31	3,417.80	45,070	0
February 29	3,418.20	46,110	+1,040
March 31	3,419.20	48,710	+2,600
April 30	3,419.30	48,970	+260
May 31	3,418.00	45,580	-3,390
June 30	3,416.70	42,200	-3,380
July 31	3,413.80	35,500	-6,700
August 31	3,409.30	26,620	-8,880
September 30	3,409.30	26,620	0
Water Year 2004	--	--	-12,430

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT

LOCATION.--Lat 45°08'29", long 106°46'15" (NAD 27), in SW¼SE¼SE¼ sec.12, T.8 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 0.5 mi downstream from Tongue River Dam, 4 mi upstream from Post Creek, 8 mi northeast of Decker, 16 mi southeast of Kirby, and at river mile 188.4.

DRAINAGE AREA.--1,770 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,344.40 ft (NGVD 29) (levels by Bureau of Reclamation). Prior to Aug. 5, 1975, at elevation 10.00 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by Tongue River Reservoir (station number 06307000) and many small reservoirs, combined capacity, about 15,000 acre-ft. Diversion for irrigation of about 64,800 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	106	114	116	118	114	175	175	199	e270	e275	e135
2	132	107	114	116	118	114	175	175	199	e270	e265	e135
3	126	107	113	116	118	114	175	175	200	e270	e270	e140
4	122	107	114	117	118	114	175	198	198	e270	e275	e140
5	117	107	116	118	118	112	175	227	198	e280	e270	e135
6	114	108	116	118	118	111	175	227	198	e280	e275	e125
7	111	110	116	118	118	111	163	243	198	e270	e275	e120
8	109	110	116	118	118	111	154	255	197	e260	e270	e120
9	110	110	116	118	117	111	154	255	208	e260	e260	e120
10	109	110	116	118	116	112	155	255	263	e260	e250	e120
11	109	111	116	118	116	111	156	255	260	e255	e245	e115
12	108	112	115	118	116	111	156	255	247	e255	e235	e115
13	108	112	114	118	116	111	156	255	248	e255	e230	e115
14	108	112	114	118	116	111	156	257	246	e270	e225	e115
15	107	112	115	120	116	111	156	259	247	e270	e225	e125
16	105	114	116	120	116	111	156	259	244	e275	e220	e120
17	103	110	116	120	115	110	156	260	245	e275	e220	110
18	104	101	116	120	114	140	156	254	246	e270	e230	105
19	105	99	116	120	114	175	156	230	245	e275	e230	102
20	104	99	116	120	114	175	157	234	228	e275	e230	98
21	103	99	116	120	114	175	158	237	214	e280	e230	95
22	103	103	115	120	114	175	159	227	216	e290	e230	93
23	105	110	116	120	114	175	158	220	226	e300	e240	91
24	105	112	115	119	114	175	158	223	232	e300	e210	91
25	103	112	116	118	114	175	156	228	238	e300	e190	91
26	103	112	116	119	113	174	159	239	248	e295	e170	92
27	103	113	116	120	113	175	175	236	249	e290	e160	91
28	105	114	117	120	114	175	176	236	262	e285	e150	91
29	106	114	117	120	114	175	175	203	e260	e280	e140	92
30	106	114	116	120	---	175	175	201	e270	e275	e140	92
31	106	---	116	120	---	175	---	199	---	e275	e135	---
TOTAL	3,416	3,267	3,581	3,681	3,354	4,314	4,886	7,152	6,929	8,535	6,970	3,329
MEAN	110	109	116	119	116	139	163	231	231	275	225	111
MAX	157	114	117	120	118	175	176	260	270	300	275	140
MIN	103	99	113	116	113	110	154	175	197	255	135	91
AC-FT	6,780	6,480	7,100	7,300	6,650	8,560	9,690	14,190	13,740	16,930	13,820	6,600

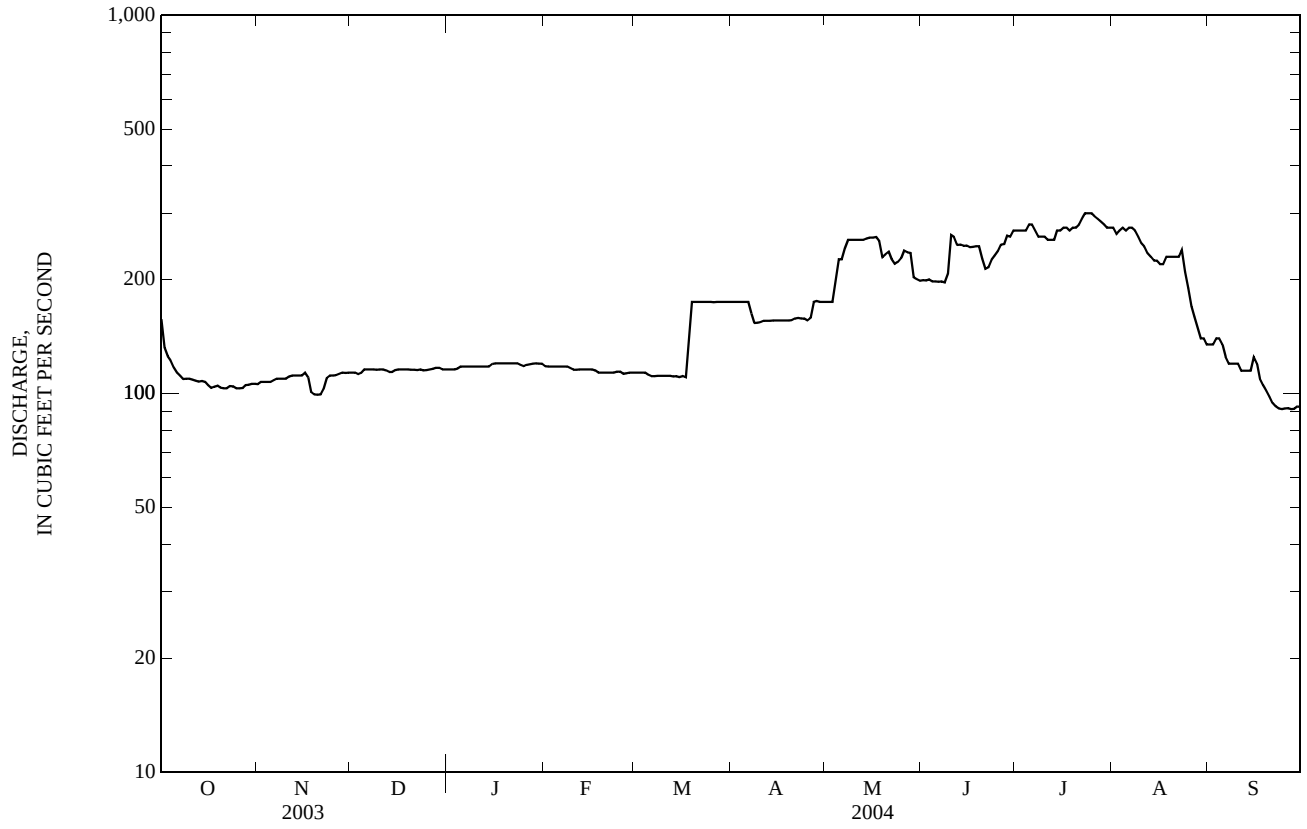
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

MEAN	269	250	185	171	177	221	356	888	1,408	565	360	304
MAX	665	554	369	287	592	676	958	2,714	3,824	2,083	767	775
(WY)	(1946)	(1942)	(1979)	(1983)	(1971)	(1971)	(1965)	(1978)	(1944)	(1975)	(1975)	(1998)
MIN	71.1	40.6	61.7	79.9	56.9	22.7	14.9	157	183	169	103	107
(WY)	(1989)	(1976)	(1989)	(1961)	(1961)	(1961)	(1940)	(2002)	(2001)	(1956)	(1943)	(2001)

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	113,451		59,414			
ANNUAL MEAN	311		162		431	
HIGHEST ANNUAL MEAN					853	1978
LOWEST ANNUAL MEAN					133	2002
HIGHEST DAILY MEAN	2,220	Jun 3	300	Jul 23	9,580	May 20, 1978
LOWEST DAILY MEAN	85	Feb 6	91	Sep 23	0.50	Apr 17, 1940
ANNUAL SEVEN-DAY MINIMUM	85	Feb 6	91	Sep 23	0.50	Apr 17, 1940
MAXIMUM PEAK FLOW			a300	Jul 23	10,800	May 20, 1978
MAXIMUM PEAK STAGE			b11.71	Jul 13	c20.00	May 20, 1978
INSTANTANEOUS LOW FLOW					d0.00	Nov 12, 1969
ANNUAL RUNOFF (AC-FT)	225,000		117,800		312,100	
10 PERCENT EXCEEDS	763		261		889	
50 PERCENT EXCEEDS	116		120		250	
90 PERCENT EXCEEDS	86		107		111	

a--Gage height, 11.62 ft. Owing to algae affect, discharge may have been higher.
b--Backwater from ice.
c--From floodmark in well.
d--Result of dam closure.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 151. 1976 to 1995, January 2004 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1980 to December 1986, May 2004 to September 2004 (seasonal operation).

INSTRUMENTATION.--Specific conductance probe installed May 2004.

REMARKS.--Specific conductance record is rated good. Missing data for May 5-20, July 12, 13, Aug. 29, and Sept. 9, 21 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 713 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 27, 2004; minimum daily, 230 µS/cm at 25.0°C, July 1, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: During seasonal operation, maximum daily, 713 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 27; minimum daily, 591 µS/cm at 25.0°C, Aug. 13.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
JAN													
20...	1100	120	679	12.9	111	8.2	713	7.5	4.0	330	68.2	39.0	3.23
FEB													
04...	1430	118	672	13.4	118	8.2	705	6.0	4.5	310	64.9	36.9	3.39
23...	1445	114	671	13.1	117	8.1	715	10.5	5.0	320	65.9	38.0	3.29
MAR													
09...	1500	112	671	11.7	104	8.4	700	19.5	5.0	320	65.6	36.6	3.40
22...	1630	175	673	11.5	101	8.3	676	17.5	4.5	300	62.7	35.1	3.50
APR													
13...	1600	153	672	11.4	114	8.4	766	25.0	9.5	300	61.0	35.1	3.20
26...	1500	156	681	11.8	124	8.6	653	23.0	12.5	290	59.1	33.5	3.33
MAY													
12...	1815	255	683	10.8	111	8.5	650	5.0	11.5	290	57.9	34.1	3.29
26...	1300	240	666	10.8	120	8.5	650	22.0	14.0	300	59.8	35.5	3.42
JUN													
09...	1415	198	672	10.4	121	8.5	646	22.0	16.5	280	55.7	33.7	3.21
22...	1430	210	676	12.1	142	8.5	634	30.0	17.0	270	55.7	32.5	3.13
JUL													
13...	1515	E255	676	11.3	139	8.4	629	33.0	19.5	240	48.9	29.6	3.00
27...	1245	E290	677	10.7	134	8.4	607	26.5	20.5	250	50.6	29.5	3.02
AUG													
17...	1305	E220	679	10.6	135	8.5	598	29.0	21.5	250	47.7	31.6	3.42
23...	1630	E240	667	9.9	130	8.8	593	26.5	22.0	250	45.9	31.8	3.47
SEP													
14...	1500	E115	671	9.9	121	8.5	665	16.0	18.5	280	52.0	36.5	3.87
27...	1230	92	686	8.9	100	8.3	693	12.0	15.5	280	50.7	36.9	3.56

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN													
20...	.8	35.1	252	4.84	.3	5.73	138	446	.61	144	75	21	6.8
FEB													
04...	.9	37.0	210	4.98	.3	5.10	141	421	.57	134	77	7	2.2
23...	.8	33.4	237	4.63	.3	5.09	144	437	.59	134	67	1	.31
MAR													
09...	.9	36.7	223	4.67	.3	4.54	143	429	.58	130	82	2	.60
22...	.9	35.5	217	4.77	.3	3.81	140	416	.57	196	74	28	13
APR													
13...	.9	35.8	216	4.70	.3	3.85	131	405	.55	167	68	16	6.6
26...	.9	33.4	216	4.81	.3	3.55	135	403	.55	170	67	3	1.3
MAY													
12...	.9	33.4	217	4.75	.3	3.19	134	402	.55	276	40	15	10
26...	.9	35.8	209	4.88	.3	1.02	136	402	.55	261	42	16	10
JUN													
09...	.9	35.4	212	4.68	.3	1.04	132	393	.54	210	56	8	4.3
22...	.9	34.9	209	4.67	.3	1.51	130	388	.53	220	79	5	2.8
JUL													
13...	.9	33.6	201	4.26	.3	1.65	127	369	.50	E254	81	4	E2.8
27...	.9	31.2	202	3.98	.3	3.28	118	362	.49	E283	81	4	E3.1
AUG													
17...	.9	32.8	195	3.98	.3	4.74	123	364	.50	E216	90	5	E3.0
23...	.9	33.6	192	3.51	.3	4.30	127	366	.50	E237	84	5	E3.2
SEP													
14...	1	40.3	204	3.87	.3	5.97	150	416	.57	E129	88	4	E2.6
27...	1	45.4	210	4.04	.3	4.36	162	433	.59	107	88	10	2.5

E--Estimated.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)
FEB													
04...	1430	.111	.047	.006	.40	.010	.025	<2	7	.9	E1	58	59
MAR													
09...	1500	.017	.058	E.001	.32	.006	.020	<2	5	.9	E1	52	55
APR													
13...	1600	.012	E.008	E.001	.32	<.006	.017	<2	20	.9	<2	55	56
26...	1500	.013	E.010	E.001	.33	<.006	.013	<2	25	.9	<2	53	55
MAY													
12...	1815	E.009	E.014	.003	.27	E.003	.017	<2	30	.9	<2	55	54
26...	1300	E.009	<.016	E.001	.28	E.003	.017	E1	26	.9	<2	55	56
JUN													
09...	1415	E.009	<.016	E.001	.24	E.003	.019	<2	16	.9	E1	59	55
22...	1430	.015	<.016	<.002	.29	.007	.024	<2	25	.9	E1	61	59
JUL													
27...	1245	.067	<.016	E.001	.39	.023	.053	E1	40	1.5	E2	57	61
AUG													
23...	1630	.025	E.009	.002	.47	.007	.043	E1	31	1.7	E2	51	52

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
04...	<.06	<.06	67	<.04	<.04	2	1.3	3.0	<6	20	<.08	E.04	21.7
MAR													
09...	<.06	<.06	70	<.04	<.04	<1	1.7	1.6	<6	20	<.08	<.06	24.0
APR													
13...	<.06	<.06	66	<.04	<.04	<1	1.2	1.3	<6	40	<.08	E.03	19.7
26...	<.06	<.06	65	<.04	<.04	<1	1.5	1.5	E5	40	<.08	.07	18.5
MAY													
12...	<.06	<.06	70	<.04	<.04	4	1.3	1.5	10	50	<.08	E.05	18.3
26...	<.06	<.06	66	<.04	<.04	5	1.7	2.8	E3	40	<.08	E.05	22.2
JUN													
09...	<.06	<.06	62	<.04	<.04	<1	1.6	2.2	<6	40	E.06	E.03	18.0
22...	<.06	<.06	61	<.04	<.04	1	1.6	1.4	7	50	<.08	E.05	17.9
JUL													
27...	<.06	<.06	58	<.04	<.04	<1	1.7	2.4	E4	80	E.05	.10	19.2
AUG													
23...	<.06	<.06	68	<.04	<.04	<1	1.6	1.8	<6	60	<.08	.14	20.0

E--Estimated.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
FEB										
04...	26.7	54	<.02	1.74	2.71	.4	.4	518	1.2	E1
MAR										
09...	22.3	35	<.02	2.71	2.50	.5	.5	525	1.3	E1
APR										
13...	2.5	26	<.02	1.65	2.09	.5	.5	519	E.5	E1
26...	5.6	17	<.02	1.75	2.89	.5	.6	504	1.1	<2
MAY										
12...	12.2	41	<.02	.82	2.68	.6	.4	479	2.2	3
26...	19.9	37	<.02	2.68	3.12	.6	.4	492	1.3	E1
JUN										
09...	4.9	23	<.02	1.49	2.92	.4	.5	487	1.3	3
22...	7.0	45	<.02	1.91	2.22	E.4	E.4	456	.7	<2
JUL										
27...	101	137	<.02	1.54	2.55	.5	.7	418	.9	E1
AUG										
23...	17.8	37	<.02	1.75	2.39	.7	.7	446	.7	E1

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1	663	656	659	649	642	646	632	619	625	606	601	603
2	662	650	659	648	642	646	635	621	627	610	598	603
3	663	656	660	648	643	646	632	622	626	611	601	604
4	663	657	659	648	643	646	631	618	625	605	596	601
5	---	---	*652	648	643	645	627	614	622	606	597	602
6	---	---	---	651	644	647	626	618	622	605	598	601
7	---	---	---	649	641	645	627	619	624	607	596	602
8	---	---	---	648	642	645	626	617	622	610	601	605
9	---	---	---	648	638	643	625	617	621	609	597	603
10	---	---	---	647	638	642	624	618	621	605	597	601
11	---	---	---	646	635	640	624	616	620	604	594	600
12	---	---	---	641	635	638	---	---	*630	602	594	598
13	---	---	*650	642	636	638	---	---	---	602	591	597
14	---	---	---	640	631	635	626	613	622	605	595	600
15	---	---	---	640	633	636	623	614	619	608	596	604
16	---	---	---	639	629	634	620	613	618	610	598	605
17	---	---	---	637	630	634	619	606	615	616	598	606
18	---	---	*654	637	621	632	619	607	615	617	610	612
19	---	---	*651	634	624	629	619	602	613	617	606	611
20	686	648	661	638	628	632	621	605	611	615	607	611
21	669	645	656	639	625	633	620	598	609	614	608	611
22	---	---	---	636	623	631	616	596	608	616	608	612
23	658	645	652	635	625	630	616	595	609	614	604	610
24	658	647	652	637	625	632	612	595	606	616	610	614
25	653	648	650	635	623	631	615	596	606	616	610	613
26	652	647	650	638	625	632	612	594	606	617	606	612
27	651	648	650	638	624	631	608	599	605	617	613	615
28	651	648	649	635	621	629	606	599	603	617	609	612
29	654	648	651	631	622	627	608	600	604	---	---	---
30	651	646	649	631	623	628	606	597	602	652	636	642
31	650	645	648	---	---	---	607	596	603	648	636	641
MONTH	686	645	654	651	621	637	635	594	615	652	591	608

*--Instantaneous value from USGS sample.

06307500 TONGUE RIVER AT TONGUE RIVER DAM, NEAR DECKER, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
	SEPTEMBER		
1	650	639	645
2	654	633	647
3	658	630	648
4	656	639	646
5	653	638	643
6	646	636	640
7	645	635	639
8	646	638	641
9	---	---	---
10	664	648	654
11	673	655	662
12	672	656	664
13	673	644	656
14	681	645	659
15	673	656	662
16	664	656	661
17	664	657	661
18	664	659	662
19	680	663	667
20	681	669	674
21	---	---	---
22	677	670	674
23	677	669	673
24	693	675	681
25	698	682	689
26	709	694	700
27	713	700	708
28	712	688	698
29	706	696	700
30	708	686	699
31	---	---	---
MONTH	713	630	666

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT

LOCATION (REVISED).--Lat 45°17'44", long 106°30'12" (NAD 27), in NW$\frac{1}{2}$SE$\frac{1}{4}$SE$\frac{1}{4}$ sec.19, T.6 S., R.43 E.,Rosebud County, Hydrologic Unit 10090101, on right bank immediately downstream from bridge on Birney-Otter Road, 0.7 mi downstream from East Fork, 1.9 mi south of Birney, and at river mile 3.8.

DRAINAGE AREA.--470 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1973 to September 1984, October 1985 to September 1995, October 2003 to September 2004.

REVISED RECORDS.--WDR MT-82-1: 1980(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,180 ft (NGVD 29), from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges and those above 1 ft^3/s, which are poor. Diversion for irrigation of about 1,240 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.02	0.09	e0.08	e0.03	e0.03	e0.08	0.27	0.21	0.20	0.09	0.00	0.00
2	e0.02	0.09	e0.08	e0.03	e0.04	e0.08	0.25	0.20	0.20	0.06	0.00	0.00
3	e0.02	0.10	e0.08	e0.03	e0.04	e0.08	0.27	0.21	0.19	0.05	0.00	0.00
4	e0.02	0.10	e0.08	e0.03	e0.04	e0.08	0.26	0.21	0.19	0.05	0.00	0.00
5	e0.02	0.08	e0.08	e0.03	e0.04	e0.08	0.28	0.22	0.19	0.63	0.23	0.00
6	e0.02	0.07	e0.08	e0.03	e0.04	e0.08	0.27	0.21	0.17	0.67	19	0.00
7	e0.02	0.08	e0.08	e0.03	e0.04	e0.08	0.28	0.21	0.15	0.16	0.36	0.00
8	e0.02	0.07	e0.08	e0.03	e0.04	e0.09	0.26	0.21	0.15	0.07	0.06	0.00
9	e0.02	0.08	e0.08	e0.03	e0.04	e0.09	0.25	0.22	0.15	0.06	0.04	0.00
10	e0.02	0.08	e0.08	e0.03	e0.04	e0.09	0.23	0.22	0.14	0.07	0.04	0.00
11	e0.02	0.09	e0.08	e0.03	e0.04	e0.10	0.23	0.21	0.15	0.06	0.03	0.00
12	e0.02	0.11	e0.08	e0.03	e0.04	e0.10	0.23	0.20	0.16	0.05	0.03	0.00
13	e0.02	0.11	e0.06	e0.03	e0.05	e0.10	0.23	0.21	0.17	0.04	0.02	0.00
14	e0.02	0.12	e0.03	e0.03	e0.05	e0.10	0.23	0.22	0.17	0.03	0.02	0.00
15	e0.02	0.12	e0.03	e0.03	e0.05	e0.10	0.24	0.20	0.14	0.01	0.01	0.00
16	e0.03	0.12	e0.03	e0.03	e0.05	e0.10	0.22	0.22	0.13	0.02	0.00	0.00
17	e0.03	0.12	e0.03	e0.03	e0.05	e0.20	0.22	0.25	0.12	0.03	0.00	0.00
18	e0.03	0.12	e0.03	e0.03	e0.06	e0.20	0.22	0.25	0.14	0.00	0.00	0.00
19	e0.03	0.13	e0.03	e0.03	e0.06	e0.20	0.21	0.31	0.13	0.00	0.00	0.00
20	e0.03	0.12	e0.03	e0.03	e0.06	e0.20	0.22	0.30	0.11	0.00	0.00	0.00
21	e0.03	e0.10	e0.03	e0.03	e0.06	e0.20	0.36	0.47	0.10	0.00	0.00	0.00
22	e0.03	e0.10	e0.03	e0.03	e0.06	e0.20	0.35	2.4	0.10	0.00	0.00	0.02
23	e0.03	e0.10	e0.03	e0.03	e0.07	e0.20	0.28	1.6	0.10	0.00	0.00	0.02
24	e0.03	e0.10	e0.03	e0.03	e0.07	e0.20	0.24	0.76	0.10	0.00	0.00	0.02
25	e0.03	e0.10	e0.03	e0.03	e0.07	e0.30	0.21	0.53	0.08	0.00	0.00	0.02
26	e0.04	e0.10	e0.03	e0.03	e0.07	e0.30	0.20	0.42	0.09	0.00	0.00	0.02
27	e0.05	e0.10	e0.03	e0.03	e0.08	e0.30	0.20	0.38	0.08	0.00	0.00	0.02
28	e0.06	e0.10	e0.03	e0.03	e0.08	e0.30	0.21	0.34	0.07	0.00	0.00	0.03
29	e0.07	e0.09	e0.03	e0.03	e0.08	e0.30	0.21	0.31	0.06	0.00	0.00	0.02
30	0.08	e0.08	e0.03	e0.03	---	e0.30	0.21	0.26	0.06	0.00	0.00	0.02
31	0.09	---	e0.03	e0.03	---	0.30	---	0.22	---	0.00	0.00	---
TOTAL	0.99	2.97	1.56	0.93	1.54	5.13	7.34	12.18	3.99	2.15	19.84	0.19
MEAN	0.03	0.10	0.05	0.03	0.05	0.17	0.24	0.39	0.13	0.07	0.64	0.01
MAX	0.09	0.13	0.08	0.03	0.08	0.30	0.36	2.4	0.20	0.67	19	0.03
MIN	0.02	0.07	0.03	0.03	0.03	0.08	0.20	0.20	0.06	0.00	0.00	0.00
AC-FT	2.0	5.9	3.1	1.8	3.1	10	15	24	7.9	4.3	39	0.4

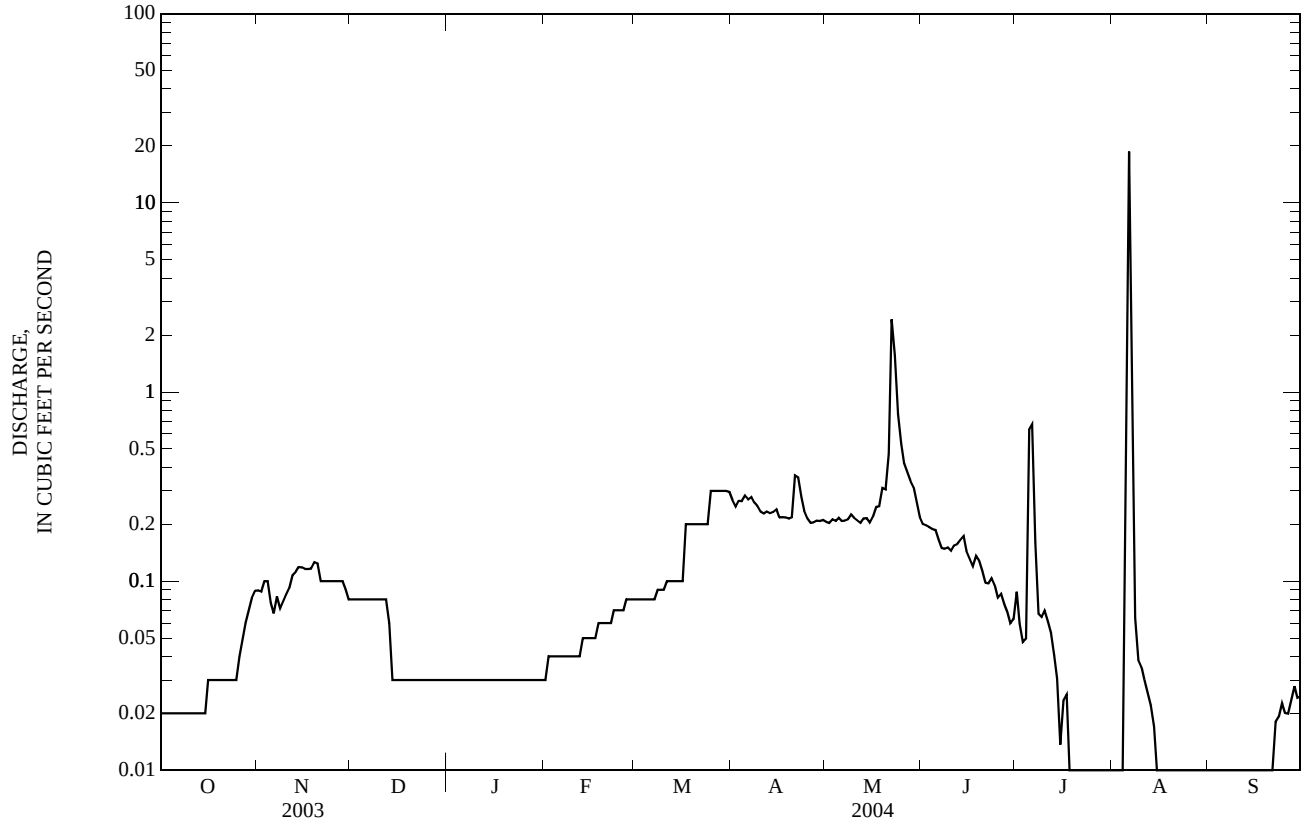
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY)*

MEAN	0.65	0.84	0.91	2.47	9.78	9.33	2.80	6.31	3.50	2.72	1.02	0.42
MAX	3.02	3.05	3.11	21.1	71.3	93.2	17.4	98.5	12.9	18.7	7.18	2.33
(WY)	(1976)	(1976)	(1976)	(1974)	(1995)	(1975)	(1975)	(1978)	(1978)	(1992)	(1991)	(1975)
MIN	0.00	0.00	0.05	0.03	0.05	0.17	0.24	0.39	0.13	0.00	0.00	0.00
(WY)	(1989)	(1990)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(1988)	(1983)	(1983)

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004	
ANNUAL TOTAL	58.81			
ANNUAL MEAN	0.16		b3.37	
HIGHEST ANNUAL MEAN			13.6	1975
LOWEST ANNUAL MEAN			0.16	2004
HIGHEST DAILY MEAN	19	Aug 6	1,730	May 19, 1978
LOWEST DAILY MEAN	0.00	Jul 18	0.00	Aug 13, 1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 18	0.00	Aug 13, 1981
MAXIMUM PEAK FLOW	a77	Aug 6	2,060	May 19, 1978
MAXIMUM PEAK STAGE	2.56	Aug 6	c11.56	May 19, 1978
INSTANTANEOUS LOW FLOW	0.00	Jul 18		
ANNUAL RUNOFF (AC-FT)	117		2,440	
10 PERCENT EXCEEDS	0.25		4.0	
50 PERCENT EXCEEDS	0.06		0.79	
90 PERCENT EXCEEDS	0.00		0.03	

*--During period of operation (September 1973 to September 1984, October 1985 to September 1995, October 2003 to current year).
a--From rating curve extended above 1.0 ft^3/s.
b--Median of yearly mean discharge, 2.24 ft^3/s, 1,620 acre-ft year.
c--From rating curve extended 360 ft^3/s on basis of slope-area measurement of flow, site and datum then in use.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-95, July 2003 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1980 to July 1983, October 1985 to September 1987, May 19, 2004 to July 16, 2004.

INSTRUMENTATION.--A specific conductance probe was installed May 19, 2004.

REMARKS.--Unable to collect water-quality samples from July through September due to no flow. Daily specific conductance record is rated fair. Specific conductance data not available for May 25-28, June 8-24 and July 17 through Sept. 30 due to low or no flow. Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 3,780 microsiemens per centimeter (µS/cm) at 25.0°C, July 3, 1986; minimum daily mean, 263 µS/cm at 25.0°C, Feb. 27, 1986.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily for seasonal operation, 3,070 microsiemens per centimeter (µS/cm) at 25.0°C, May 22; minimum daily mean, 1,270 µS/cm at 25.0°C, July 6.

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
06...	1430	E.02	678	13.7	162	8.5	1,650	23.0	17.5	570	76.4	93.1	12.9
NOV													
03...	1615	.10	677	10.8	85	8.2	1,880	-1.0	0.5	640	88.8	101	13.3
DEC													
04...	0915	E.08	693	7.4	56	7.6	2,370	-1.5	0.0	810	110	131	16.4
FEB													
05...	0845	E.04	686	11.9	92	7.8	3,410	-6.0	0.0	1,100	157	183	26.1
MAR													
10...	0900	E.09	688	7.1	54	8.0	2,000	-1.0	0.0	660	90.6	104	12.5
APR													
13...	1430	.25	677	11.6	124	8.1	2,720	25.0	12.5	730	98.2	118	14.7
26...	1330	.22	687	8.8	97	8.3	2,430	22.5	14.5	810	108	131	16.2
MAY													
12...	1630	.22	683	11.2	108	8.3	2,210	7.0	8.5	710	92.2	117	15.0
25...	1500	.54	679	9.7	110	8.2	2,570	18.0	15.5	780	98.3	129	19.8
JUN													
08...	1450	.14	685	10.9	140	8.5	1,880	22.0	22.0	680	77.4	119	15.8
22...	1700	.10	681	9.9	126	8.6	2,000	23.5	21.0	630	65.6	113	15.1

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT													
06...	3	176	39	432	8.66	1.3	18.3	387	1,030	1.41	E.06	--	<.016
NOV													
03...	4	217	42	494	13.0	1.4	23.6	503	1,260	1.71	.34	--	<.016
DEC													
04...	5	313	45	477	13.4	1.3	21.1	825	1,720	2.33	E.37	--	.018
FEB													
05...	6	467	46	722	24.7	1.8	32.1	1,230	2,560	3.48	E.28	.184	.136
MAR													
10...	4	260	46	462	12.3	1.0	15.1	727	1,500	2.04	E.36	.012	<.016
APR													
13...	5	302	47	490	13.2	1.3	15.9	760	1,620	2.20	1.09	.012	<.016
26...	5	327	46	605	13.5	1.3	17.2	801	1,780	2.42	1.06	.010	<.016
MAY													
12...	5	285	46	582	11.8	1.4	17.6	677	1,570	2.13	.93	E.005	<.016
25...	5	341	48	525	14.9	1.1	11.9	957	1,890	2.57	2.76	<.010	<.016
JUN													
08...	5	303	48	543	11.6	1.3	9.98	720	1,590	2.16	.60	<.010	<.016
22...	5	268	47	527	9.76	1.3	7.57	589	1,390	1.89	.37	<.010	<.016

E--Estimated.

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Suspnd. sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT							
06...	.002	.29	<.006	.025	94	63	<.01
NOV							
03...	<.002	.45	.007	.032	76	78	.02
DEC							
04...	.002	.35	.013	.042	24	120	E.02
FEB							
05...	.006	1.01	.087	.169	34	64	<.01
MAR							
10...	E.001	.36	.008	.047	76	33	<.01
APR							
13...	E.001	.38	E.005	.038	70	54	.04
26...	<.002	.34	.007	.025	74	65	.04
MAY							
12...	E.001	.30	.008	.028	48	46	.03
25...	<.002	.53	.008	.037	68	23	.03
JUN							
08...	E.001	.47	E.004	.029	96	17	.01
22...	<.002	.46	E.004	.029	87	20	.01

Date	Time	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
FEB												
05...	0845	E1	50	1.4	E1	65	70	<.06	<.12	346	E.02	<.08
MAR												
10...	0900	E1	108	.8	E1	28	32	<.06	<.06	204	<.04	<.04
APR												
13...	1430	<3	157	1.1	E2	30	34	<.12	<.12	268	<.08	<.08
26...	1330	<3	59	1.2	E1	28	30	<.06	<.06	293	<.04	E.02
MAY												
12...	1630	<2	37	1.6	E1	25	25	<.06	<.06	300	<.04	<.04
25...	1500	E1	43	1.3	E1	31	32	<.06	<.06	298	<.04	E.02
JUN												
08...	1450	E1	27	1.7	3	27	27	<.06	<.06	304	<.04	<.04
22...	1700	E1	56	1.6	E2	18	19	<.06	<.06	302	<.04	<.04

Date	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)
FEB										
05...	9	5.5	8.2	210	690	<.08	E.09	147	485	496
MAR										
10...	<1	3.4	4.4	77	500	<.08	.21	78.9	115	101
APR										
13...	<1	3.6	5.4	22	540	<.16	.38	94.1	48.7	59
26...	<1	4.1	5.1	20	220	<.08	.12	93.1	50.8	54
MAY										
12...	10	3.9	4.1	29	220	<.08	.07	91.2	44.6	45
25...	14	5.2	9.3	24	250	<.08	.14	117	24.6	29
JUN										
08...	<1	4.1	6.6	29	230	.18	.07	91.1	31.8	35
22...	<1	4.0	5.0	34	200	<.08	.09	97.4	18.4	23

E--Estimated.

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, fltrd, ug/L (01145)	Selen- ium, water, unfltrd ug/L (01147)	Stront- ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)
FEB								
05...	<.02	4.30	6.69	.9	.8	2,150	4.8	8
MAR								
10...	<.02	4.06	4.29	.6	.6	1,190	2.8	3
APR								
13...	<.02	2.65	4.40	E.6	<.8	1,480	2.5	7
26...	<.02	3.34	5.87	.6	.4	1,560	2.6	E2
MAY								
12...	<.02	1.43	5.38	.5	.6	1,350	2.8	2
25...	<.02	5.65	6.81	.8	.7	1,490	2.3	4
JUN								
08...	<.02	2.49	5.49	.5	.5	1,270	2.6	3
22...	<.02	2.71	3.48	E.3	.5	1,070	2.3	4

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY	
1				2,280	2,180	2,240	2,080	1,930	2,000
2				2,280	2,240	2,260	2,080	1,970	2,040
3				2,310	2,240	2,260	2,120	2,000	2,060
4				2,290	2,240	2,270	2,130	2,000	2,060
5				2,290	2,240	2,270	2,100	1,760	1,930
6				2,320	2,240	2,280	1,840	1,270	1,430
7				2,310	2,250	2,280	1,410	1,290	1,330
8				---	---	*1,880	1,480	1,400	1,440
9				---	---	---	1,580	1,420	1,520
10				---	---	---	1,600	1,470	1,560
11				---	---	---	1,700	1,520	1,640
12			*2,210	---	---	---	1,910	1,620	1,750
13				---	---	---	1,950	1,700	1,830
14				---	---	---	2,170	1,720	1,930
15				---	---	---	2,290	2,040	2,190
16				---	---	---	2,280	2,040	2,190
17				---	---	---			
18				---	---	---			
19				---	---	---			
20				---	---	---			
21				---	---	---			
22	3,070	2,200	2,730	---	---	*2,000			
23	2,780	2,710	2,760	---	---	---			
24	2,720	2,630	2,660	2,070	1,960	2,020			
25	---	---	---	2,060	1,960	2,010			
26	---	---	---	2,070	1,980	2,020			
27	---	---	---	2,080	1,950	2,020			
28	---	---	---	2,090	2,000	2,040			
29	2,370	2,340	2,350	2,180	2,020	2,090			
30	2,350	2,290	2,320	2,160	2,000	2,070			
31	2,320	2,180	2,240	---	---	---			
MONTH	3,070	2,180	2,510	2,320	1,950	2,150	2,290	1,270	1,810

*--Instantaneous value from USGS sample.

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Biomass periphyton, ashfree drymass g/m2 (49954)	Periphyton biomass ash weight, g/m2 (00572)	Periphyton biomass dry weight, g/m2 (00573)	Biomass chlorophyll ratio, periphyton, number (70950)	Pheophytin a, periphyton, mg/m2 (62359)	Chlorophyll a periphyton, mg/m2 (70957)
OCT 24...	1030	E.03	8.2	1,680	27.0	7.0	79.2	1,916	1,996	1,900	30	41.6

BENTHIC INVERTEBRATE SAMPLES
OCTOBER 24, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Tubificidae	360	14.3
Lumbricidae	15	0.6
Hirudinea	5	0.2
Physidae	560	22.3
Planorbidae	130	5.2
Hyalella azteca	120	4.8
ONDONATA		
Coenagrionidae	55	2.2
EPHEMEROPTERA		
Callibaetis	25	1.0
Fallceon quilleri	5	0.2
Caenis	15	0.6
HEMIPTERA		
Corixidae	5	0.2
Notonecta	15	0.6
TRICHOPTERA		
Cheumatopsyche	70	2.8
Limnephilidae	185	7.4
COLEOPTERA		
Colymbetinae	5	0.2
Coptotomus	5	0.2
Laccophilus	5	0.2
Dubiraphia	150	6.0
Haliplus	35	1.4
Peltodytes	5	0.2
Ochthebius	15	0.6
Tropisternus	5	0.2
DIPTERA		
Ceratopogonidae	225	8.9
Pericoma	15	0.6
Psychoda	15	0.6
Simulium	115	4.6
Dicranota	5	0.2
CHIRONOMIDAE		
Acricotopus	65	2.6
Chaetocladius	5	0.2
Hydrobaenus	5	0.2
Micropsectra	15	0.6
Natarsia	5	0.2
Paramerina	5	0.2
Paraphaenocladius	30	1.2
Paratendipes	10	0.4
Procladius	5	0.2
Pseudochironomus	80	3.2
Pseudosmittia	120	4.8
Thienemannimyia Complex	5	0.2

Richest targeted habitat sample--riffles
Composite of 20 samples (area 0.023 m^2/sample)
Equipment type--Mini-Surber sampler;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Nematoda	3	0.2
Tubificidae	46	3.8
Hirudinea	3	0.2
Lymnaeidae	5	0.4
Physidae	164	13.4
Planorbidae	38	3.1
Hyalella azteca	14	1.1
Acari	5	0.4
EPHEMEROPTERA		
Callibaetis	8	0.7
TRICHOPTERA		
Cheumatopsyche	25	2.0
Limnephilidae	180	14.7
COLEOPTERA		
Agabus	3	0.2
Colymbetinae	22	1.8
Dubiraphia	156	12.7
Microcylloepus	8	0.7
Haliplus	3	0.2
Peltodytes	3	0.2
DIPTERA		
Ceratopogonidae	85	6.9
Muscidae	11	0.9
Pericoma	8	0.7
Psychoda	11	0.9
Simulium	218	17.9
Stratiomyiidae	3	0.2
Tabanidae	3	0.2
Dicranota	11	0.9
Tipula	3	0.2
CHIRONOMIDAE		
Acricotopus	5	0.4
Chaetocladius	3	0.2
Cricotopus/Orthocladius	3	0.2
Diplocladius	3	0.2
Hydrobaenus	22	1.8
Micropsectra	66	5.4
Parakiefferiella	3	0.2
Paraphaenocladius	3	0.2
Paratendipes	11	0.9
Pseudochironomus	16	1.3
Pseudosmittia	19	1.6
Rheocricotopus	8	0.7
Thienemannimyia Complex	25	2.0

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

BENTHIC INVERTEBRATE SAMPLES
OCTOBER 24, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Total number of taxon	39
Total number of organisms	2515
Hilsenhoff biotic index	7.46
EPT abundance	300
Number of EPT taxon	5

Richest targeted habitat sample--riffles
Composite of 20 samples (area 0.023 m^2/sample)
Equipment type--Mini-Surber sampler;
mesh size--500 µm

Total number of taxon	39
Total number of organisms	1223
Organisms per m^2	2658
Hilsenhoff biotic index	6.77
EPT abundance	213
Number of EPT taxon	3
EPT abundance per m^2	463

ALGAE SAMPLES
OCTOBER 24, 2003

Richest targeted habitat sample
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.49	34.1
Adlafia minuscula	0.18	12.8
Amphora libyca	0.12	8.51
Amphora pediculus	0.18	12.8
Bacillaria paradoxa	0.18	12.8
Biremis circumtexta	0.31	21.3
Caloneis silicula	0.12	8.51
Cocconeis placentula	0.67	46.8
Cyclotella meneghiniana	1.04	72.4
Diploneis puella	0.12	8.51
Encyonema silesiacum	0.24	17.0
Entomoneis paludosa	0.37	25.5
Fallacia pygmaea	0.43	29.8
Fragilaria capucina	0.37	25.5
Gomphonema mexicanum	0.67	46.8
Gomphonema parvulum	0.12	8.51
Hippodonta hungarica	0.12	8.51
Luticola mutica	0.06	4.26
Mastogloia elliptica	0.24	17.0
Melosira varians	0.18	12.8
Navicula canalis	0.98	68.1
Navicula caterva	0.49	34.1
Navicula cincta	0.12	8.51
Navicula erifuga	1.59	111
Navicula germainii	0.12	8.51
Navicula gregaria	0.86	59.6
Navicula peregrina	0.24	17.0
Navicula permitis	0.12	8.51
Navicula reichardtiana	0.12	8.51
Navicula tenera	0.06	4.26
Navicula veneta	4.89	341
Nitzschia acicularis	0.98	68.1
Nitzschia agnita	1.77	123
Nitzschia amphibia	0.24	17.0
Nitzschia archibaldii	0.12	8.51
Nitzschia aurariae	0.73	51.1
Nitzschia capitellata	0.18	12.8
Nitzschia communis	0.80	55.3
Nitzschia dissipata	0.37	25.5
Nitzschia frustulum	8.07	562
Nitzschia incognita	0.12	8.51
Nitzschia liebetruthii	0.12	8.51
Nitzschia linearis	0.31	21.3
Nitzschia microcephala	6.48	451
Nitzschia palea	4.83	336
Nitzschia pusilla	2.39	166
Nitzschia reversa	0.43	29.8
Nitzschia solita	0.12	8.51
Nitzschia supralitorea	0.92	63.8
Nitzschia valdestriata	0.24	17.0
Pleurosigma delicatulum	0.06	4.26
Reimeria sinuata	0.12	8.51
Rhoicosphenia abbreviata	0.18	12.8
Rhopalodia brebissonii	0.24	17.0
Rhopalodia gibba	0.61	42.6
Rhopalodia musculus	0.06	4.26
Staurosira construens	0.24	17.0
Surirella minuta	0.92	63.8
Synedra famelica	0.12	8.51

Depositional targeted habitat sample
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Adlafia minuscula	0.12	0.39
Amphora libyca	0.12	0.39
Amphora pediculus	0.25	0.78
Anomoeoneis sphaerophora	0.06	0.20
Biremis circumtexta	0.43	1.37
Caloneis bacillum	0.12	0.39
Cocconeis placentula	1.12	3.51
Cyclotella meneghiniana	1.30	4.10
Cylindrotheca gracilis	0.12	0.39
Cymbella pusilla	1.86	5.86
Diploneis puella	0.25	0.78
Encyonema silesiacum	0.06	0.20
Epithemia adnata	0.06	0.20
Epithemia turgida	0.31	0.98
Fragilaria capucina	0.12	0.39
Gomphonema gracile	0.12	0.39
Gomphonema mexicanum	0.06	0.20
Gomphonema olivaceum	0.06	0.20
Gomphonema parvulum	0.25	0.78
Gyrosigma acuminatum	0.12	0.39
Hantzschia amphioxys	0.19	0.59
Hippodonta hungarica	0.19	0.59
Luticola mutica	0.06	0.20
Navicula canalis	1.37	4.29
Navicula capitatoradiata	0.12	0.39
Navicula caterva	0.12	0.39
Navicula cincta	0.62	1.95
Navicula erifuga	1.99	6.25
Navicula goersii	0.19	0.59
Navicula gregaria	0.12	0.39
Navicula omissa	0.12	0.39
Navicula peregrina	0.37	1.17
Navicula recens	0.37	1.17
Navicula salinarum	0.12	0.39
Navicula trivialis	0.12	0.39
Navicula veneta	5.15	16.2
Navicula weinzierlii	0.06	0.20
Nitzschia acicularis	0.06	0.20
Nitzschia agnita	1.61	5.08
Nitzschia capitellata	0.25	0.78
Nitzschia communis	0.62	1.95
Nitzschia desertorum	0.12	0.39
Nitzschia filiformis	0.12	0.39
Nitzschia frustulum	8.63	27.1
Nitzschia gracilis	0.12	0.39
Nitzschia inconspicua	0.12	0.39
Nitzschia liebetruthii	0.43	1.37
Nitzschia microcephala	6.33	19.9
Nitzschia palea	2.30	7.22
Nitzschia pusilla	0.74	2.34
Nitzschia reversa	0.31	0.98
Nitzschia sigma	0.12	0.39
Nitzschia solita	0.12	0.39
Nitzschia supralitorea	1.92	6.05
Nitzschia valdestriata	0.12	0.39
Plagiotropis lepidoptera	0.06	0.20
Planothidium lanceolatum	0.25	0.78
Pleurosigma delicatulum	0.06	0.20
Rhoicosphenia abbreviata	0.50	1.56

06307600 HANGING WOMAN CREEK NEAR BIRNEY, MT—Continued

ALGAE SAMPLES
OCTOBER 24, 2003

	Richest targeted habitat sample Sample method--Top rock scrape	
BACILLARIOPHYTA--Continued		
Tabularia fasciculata	0.12	8.51
Tryblionella apiculata	0.31	21.3
Tryblionella hungarica	0.43	29.8
CHLOROPHYTA		
Stigeoclonium sp.	2.43	169
CHRYSOPHYTA		
Tribonema sp.	1.87	130
CYANOPHTA		
Spirulina sp.	47.2	3284
Total algae cells/mm^2		6958

	Depositional targeted habitat sample Sample method--Inverted petri dish	
BACILLARIOPHYTA--Continued		
Rhopalodia brebissonii	0.12	0.39
Rhopalodia gibba	0.68	2.15
Staurosira construens	0.43	1.37
Surirella minuta	0.12	0.39
Surirella sp.	0.12	0.39
Synedra acus	0.19	0.59
Synedra ulna	0.06	0.20
Tabularia fasciculata	0.25	0.78
Tryblionella apiculata	0.19	0.59
Tryblionella gracilis	0.12	0.39
Tryblionella hungarica	0.43	1.37
Tryblionella levidensis	0.06	0.20
CHLOROPHYTA		
Ankistrodesmus sp.	0.18	0.57
Scenedesmus sp.	0.37	1.15
Selenastrum sp.	0.18	0.57
Spirogyra sp.	0.18	0.57
CHRYSOPHYTA		
Tribonema sp.	3.28	10.3
CYANOPHYTA		
Oscillatoria sp.	49.8	157
Total algae cells/mm^2		315

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT

LOCATION.--Lat 45°24'42", long 106°27'26" (NAD 27), in SE¼SW¼SW¼ sec.8, T.5 S., R.43 E., Rosebud County, Hydrologic Unit 10090102, on left bank, 60 ft upstream from Bureau of Indian Affairs bridge, 0.2 mi east of Birney Day School, 5.5 mi downstream from Cook Creek, 6.5 mi northeast of Birney, and at river mile 144.3.

DRAINAGE AREA.--2,621 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,060 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	113	e80	e90	e100	e90	181	170	179	252	257	122
2	141	113	e80	e90	e100	e90	181	170	168	253	251	122
3	124	112	e80	e90	e95	e90	182	170	167	251	260	128
4	122	112	e80	e85	e95	e90	183	168	159	252	266	131
5	122	110	e85	e80	e95	e95	183	186	158	271	256	112
6	117	e80	e85	e80	e95	e100	183	212	156	268	270	109
7	110	e85	e85	e85	e95	e100	183	214	172	246	255	108
8	111	e85	e85	e95	e95	e110	179	228	174	248	241	108
9	111	e85	e85	e95	e95	e120	165	238	178	249	242	108
10	111	e85	e85	e95	e95	e135	165	237	186	243	234	107
11	113	e90	e85	e95	e95	135	164	232	243	241	221	107
12	111	e85	e85	e95	e95	134	165	235	242	243	211	104
13	112	e85	e85	e95	e90	135	165	237	235	238	213	111
14	111	e90	e85	e95	e95	133	164	237	243	258	211	110
15	112	e100	e85	e95	e95	132	165	236	238	260	208	118
16	111	108	e85	e95	e95	134	165	238	242	271	206	97
17	111	108	e85	e95	e95	134	163	241	244	258	211	96
18	111	106	e85	e100	e95	134	163	234	244	257	222	95
19	111	102	e90	e100	e90	149	165	242	249	268	220	96
20	111	98	e90	e100	e90	178	164	240	250	264	222	103
21	111	e90	e90	e100	e90	180	167	247	232	276	219	110
22	111	e80	e90	e100	e90	181	175	257	222	283	220	96
23	111	e70	e90	e100	e90	181	169	234	222	290	232	95
24	111	e80	e90	e100	e90	182	164	224	231	289	194	97
25	111	e80	e90	e100	e90	182	165	217	232	284	151	94
26	111	e80	e90	e100	e90	182	164	218	229	283	149	95
27	112	e80	e90	e95	e90	182	162	213	232	279	141	96
28	114	e80	e90	e95	e90	182	171	222	233	266	128	102
29	119	e80	e90	e100	e90	181	171	223	245	261	127	92
30	114	e80	e90	e100	---	181	170	189	254	261	124	94
31	114	---	e90	e100	---	181	---	186	---	264	122	---
TOTAL	3,565	2,752	2,680	2,940	2,705	4,413	5,106	6,795	6,459	8,127	6,484	3,163
MEAN	115	91.7	86.5	94.8	93.3	142	170	219	215	262	209	105
MAX	143	113	90	100	100	182	183	257	254	290	270	131
MIN	110	70	80	80	90	90	162	168	156	238	122	92
AC-FT	7,070	5,460	5,320	5,830	5,370	8,750	10,130	13,480	12,810	16,120	12,860	6,270

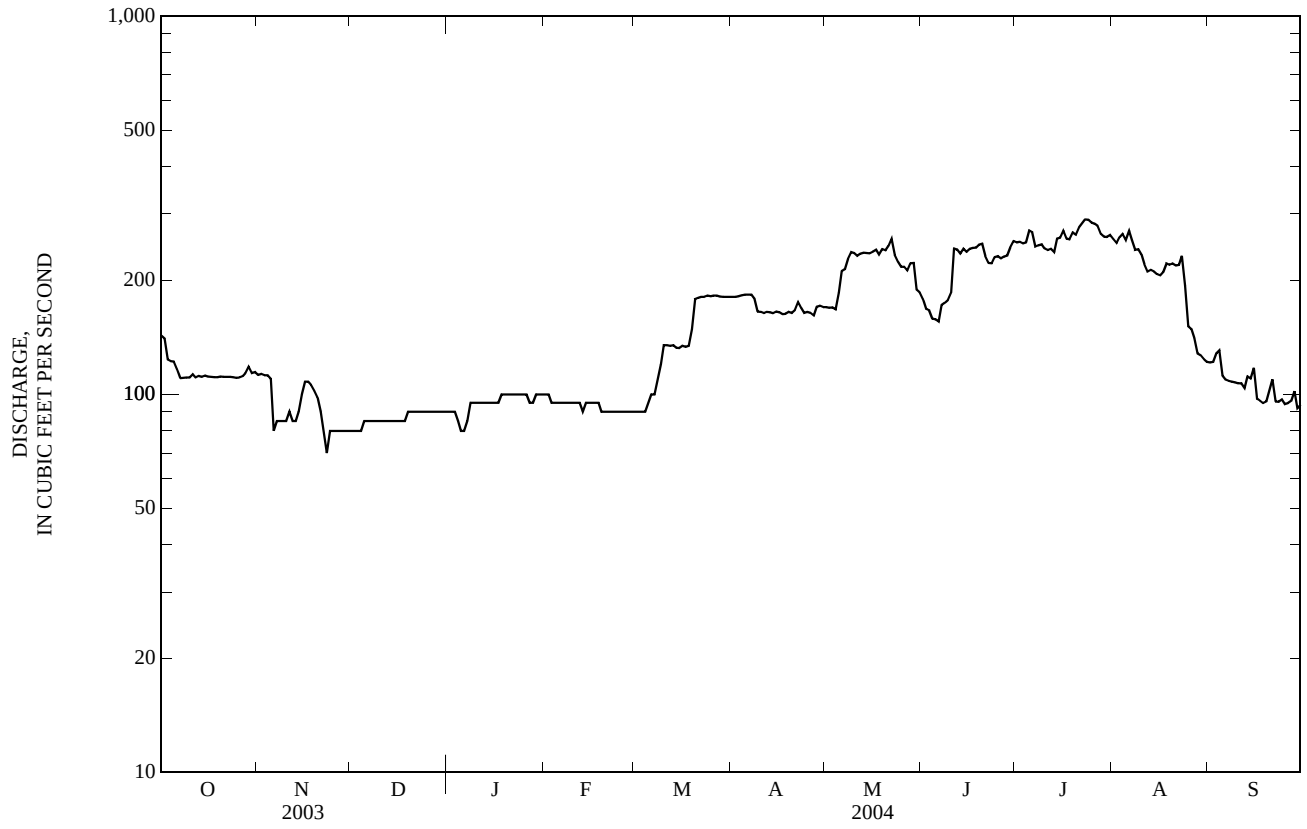
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2004, BY WATER YEAR (WY)

MEAN	235	209	173	173	189	225	265	633	1,089	542	389	307
MAX	381	347	260	287	350	434	583	1,769	2,921	1,269	676	694
(WY)	(1996)	(1987)	(1987)	(1983)	(1983)	(1996)	(1996)	(1984)	(1984)	(1995)	(1997)	(1998)
MIN	84.7	65.6	63.5	91.3	90.0	78.0	65.9	144	215	234	159	105
(WY)	(1989)	(1989)	(1989)	(1989)	(2002)	(1987)	(1992)	(2002)	(2004)	(2001)	(2002)	(2004)

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1980 - 2004	
ANNUAL TOTAL	115,715		55,189			
ANNUAL MEAN	317		151		369	
HIGHEST ANNUAL MEAN					644	1984
LOWEST ANNUAL MEAN					133	2002
HIGHEST DAILY MEAN	2,230	Jun 3	290	Jul 23	3,740	Jun 14, 1984
LOWEST DAILY MEAN	70	Nov 23	70	Nov 23	28	Apr 6, 1987
ANNUAL SEVEN-DAY MINIMUM	79	Nov 22	79	Nov 22	28	Apr 5, 1987
MAXIMUM PEAK FLOW			a294	Jul 23	c4,520	Jun 14, 1984
MAXIMUM PEAK STAGE			b3.20	Jan 1	b6.92	Feb 8, 1996
ANNUAL RUNOFF (AC-FT)	229,500		109,500		267,500	
10 PERCENT EXCEEDS	841		248		654	
50 PERCENT EXCEEDS	115		122		243	
90 PERCENT EXCEEDS	89		85		104	

a--Gage height, 1,84 ft.
b--Backwater from ice.
c--Gage height, 6.43 ft, from rating curve extended above 2,700 ft^3/s.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980 to 1993, October 2003 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 29, 2004 through September 30, 2004.

INSTRUMENTATION.--Specific conductance probe installed April 28, 2004.

REMARKS.--Daily specific conductance record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 693 microsiemens per centimeter (µS/cm), Sept. 30, 2004; minimum daily mean, 548 µS/cm , Aug. 6, 2004.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 693 microsiemens per centimeter (µS/cm), Sept. 30; minimum daily mean, 548 µS/cm , Aug. 6.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
JAN									
07...	1630	E85	681	8.9	69	8.2	787	-3.0	0.0
FEB									
05...	1030	E95	690	8.9	67	8.2	762	-5.0	0.0
23...	1300	E90	682	12.7	97	8.4	694	12.5	0.0
MAR									
10...	1000	E135	691	10.7	87	8.5	680	-1.0	2.5
22...	1500	181	681	9.8	99	8.4	703	23.5	10.5
APR									
13...	1245	165	680	11.8	125	8.4	788	23.0	12.5
26...	1215	165	689	9.3	100	8.5	676	20.0	14.0
MAY									
12...	1415	236	667	9.3	96	8.5	664	4.5	10.5
25...	1200	218	684	10.3	114	8.5	671	18.0	15.0
JUN									
08...	1200	174	685	8.8	105	8.5	638	19.5	18.5
23...	1015	215	685	8.2	95	8.5	621	28.0	17.0
JUL									
13...	1145	220	686	8.3	108	8.5	630	34.5	23.0
26...	1630	288	681	8.3	111	8.4	604	32.0	24.0
AUG									
17...	1100	195	686	7.8	97	8.4	581	26.5	21.0
23...	1440	241	674	8.3	108	8.5	609	28.0	22.0
SEP									
14...	1245	109	680	9.0	103	8.6	624	18.0	16.0
27...	1015	96	692	8.1	90	8.4	670	15.5	15.5

Date	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
JAN												
07...	360	73.4	42.8	3.91	1	42.6	20	227	5.41	.3	4.39	166
FEB												
05...	330	68.3	39.7	3.83	1	42.7	22	223	5.08	.3	3.71	155
23...	300	58.9	36.2	3.31	.9	34.6	20	189	4.29	.3	1.93	142
MAR												
10...	310	63.2	37.7	3.81	1	42.3	22	217	4.29	.3	1.91	143
22...	300	60.8	36.2	3.66	1	38.6	22	213	4.87	.3	2.34	147
APR												
13...	300	58.1	36.4	3.34	1	40.0	23	205	4.94	.3	1.25	143
26...	290	57.6	36.0	3.59	1	39.1	22	217	4.85	.3	1.63	144
MAY												
12...	290	58.1	36.0	3.43	.9	36.7	21	210	4.87	.3	2.16	140
25...	300	57.8	36.7	3.61	1	38.7	22	200	4.81	.3	.96	144
JUN												
08...	260	45.7	36.0	3.31	1	40.2	25	194	4.76	.3	.90	140
23...	260	46.1	34.8	3.39	1	39.9	25	192	4.52	.3	.50	136
JUL												
13...	230	42.3	31.2	3.39	1	36.7	25	192	4.35	.3	1.50	133
26...	250	47.0	31.1	3.31	.9	33.8	23	193	4.13	.3	3.15	124
AUG												
17...	230	39.2	32.8	3.47	1	34.5	24	181	4.25	.3	4.25	128
23...	240	43.3	32.4	3.85	1	37.3	25	183	3.68	.3	4.24	136
SEP												
14...	250	39.4	36.2	4.15	1	42.9	27	177	4.00	.3	2.86	152
27...	260	41.6	37.5	3.99	1	48.1	28	190	4.11	.3	1.86	161

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN						
07...	475	.65	E109	84	28	E6.43
FEB						
05...	453	.62	E116	73	10	E2.56
23...	395	.54	E96	74	6	E1.46
MAR						
10...	427	.58	E156	65	11	E4.01
22...	422	.57	206	69	42	21
APR						
13...	410	.56	183	74	17	7.6
26...	418	.57	186	62	7	3.1
MAY						
12...	408	.55	260	72	34	22
25...	407	.55	240	76	39	23
JUN						
08...	388	.53	182	85	21	9.9
23...	382	.52	222	93	12	7.0
JUL						
13...	367	.50	218	87	16	9.5
26...	363	.49	283	81	32	25
AUG						
17...	355	.48	187	90	13	6.8
23...	371	.50	241	97	205	133
SEP						
14...	388	.53	114	92	2	.59
27...	413	.56	107	77	6	1.6

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat unf mg/L (62855)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
FEB													
05...	1030	<.010	.033	.003	<.006	.008	.26	<2	13	.9	E1	60	61
MAR													
10...	1000	<.010	<.016	<.002	<.006	.016	.26	<2	47	.8	E1	55	57
APR													
13...	1245	<.010	<.016	<.002	<.006	.011	.26	E1	23	.9	E1	52	55
26...	1215	<.010	<.016	<.002	<.006	.012	.27	<2	20	.9	E1	52	56
MAY													
12...	1415	<.010	<.016	E.001	<.006	.025	.35	E1	84	.9	E1	55	55
25...	1200	<.010	<.016	<.002	<.006	.030	.24	2	123	.8	<2	55	58
JUN													
08...	1200	<.010	<.016	E.001	<.006	.031	.24	3	120	1.0	<2	55	54
23...	1015	<.010	<.016	<.002	<.006	.019	.28	E1	97	.8	<2	50	51
JUL													
26...	1630	<.010	<.016	<.002	<.006	.026	.38	2	123	1.2	E1	54	59
AUG													
23...	1440	E.006	E.009	E.001	<.006	.127	.53	4	1,370	1.2	2	54	79

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
05...	<.06	<.06	72	<.04	<.04	2	1.4	3.7	11	40	<.08	E.03	22.9
MAR													
10...	<.06	<.06	79	<.04	<.04	<1	1.5	1.5	23	120	<.08	E.04	22.6
APR													
13...	<.06	<.06	66	<.04	<.04	<1	1.4	1.4	12	80	<.08	E.04	20.6
26...	<.06	<.06	66	<.04	<.04	<1	1.5	1.4	19	70	E.07	.08	20.1
MAY													
12...	<.06	<.06	70	<.04	<.04	4	1.4	1.6	12	200	<.08	.17	19.7
25...	<.06	<.06	69	<.04	<.04	5	1.8	3.1	9	310	<.08	.33	25.0
JUN													
08...	<.06	<.06	70	<.04	<.04	<1	1.5	2.7	20	310	<.08	.27	20.1
23...	<.06	<.06	68	<.04	<.04	<1	1.6	1.9	12	210	<.08	.19	20.4
JUL													
26...	<.06	<.06	64	<.04	<.04	<1	1.5	2.1	8	290	<.08	.28	20.4
AUG													
23...	<.06	.17	74	<.04	.05	9	1.8	7.3	E5	4,300	<.08	3.32	20.9

Date	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)
FEB										
05...	8.4	13	<.02	1.62	2.82	.4	E.3	551	1.7	2
MAR										
10...	21.5	32	<.02	1.93	2.41	.5	.5	514	1.1	E2
APR										
13...	13.3	22	<.02	1.54	1.97	.5	.7	522	1.0	<2
26...	14.6	21	<.02	1.63	2.71	.4	E.4	507	1.3	E1
MAY										
12...	8.6	34	<.02	.94	3.05	.5	.5	494	.8	E2
25...	8.1	39	<.02	2.68	3.44	.4	.5	504	.7	E2
JUN										
08...	14.0	44	<.02	5.49	2.04	.5	E.4	476	1.6	3
23...	6.2	25	<.02	1.81	1.89	E.3	.5	452	1.0	E2
JUL										
26...	6.0	43	<.02	2.14	2.65	.4	E.4	436	1.0	E2
AUG										
23...	3.9	86	<.02	1.70	5.33	.5	.8	447	1.2	13

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1				669	657	663	656	639	650	619	582	604
2				658	649	654	652	636	645	627	602	619
3				657	642	650	646	632	638	613	599	607
4				657	633	644	642	625	633	616	601	609
5				---	---	*690	642	621	632	607	586	598
6				---	---	---	643	613	632	610	588	598
7				---	---	---	638	609	625	620	601	610
8				---	---	---	646	611	629	611	602	607
9				---	---	---	647	625	636	617	600	608
10				---	---	---	648	628	638	614	602	609
11				---	---	---	638	611	628	617	604	610
12				---	---	---	645	611	631	617	600	608
13				676	665	672	637	611	628	624	607	615
14			*788	676	668	673	637	610	624	627	605	615
15				---	---	---	633	606	623	633	604	622
16				679	662	673	629	605	618	632	600	618
17				666	654	662	639	616	629	625	600	618
18				660	649	657	632	620	626	619	597	607
19				661	647	656	636	618	626	620	601	610
20				---	---	---	636	613	627	627	604	614
21				---	---	---	624	611	618	624	602	614
22				---	---	---	627	614	622	617	600	608
23				---	---	---	628	613	621	614	598	606
24				---	---	---	624	603	618	611	595	602
25				---	---	*671	615	598	606	611	595	603
26			*676	658	642	652	622	601	614	615	590	602
27				658	642	651	611	595	603	615	589	604
28				659	645	653	614	597	606	598	571	589
29	675	666	671	655	636	647	605	593	598	587	569	577
30	676	666	670	657	636	650	605	585	595	592	571	581
31	---	---	---	661	647	656	---	---	---	586	571	577
MONTH	676	666	670	679	633	657	656	585	624	633	569	605
		AUGUST				SEPTEMBER						
1	580	564	571	624	608	614						
2	571	560	565	638	623	630						
3	569	557	562	635	619	627						
4	572	549	561	645	626	635						
5	573	550	565	674	641	656						
6	658	548	574	674	653	661						
7	579	558	567	663	641	651						
8	576	559	565	655	641	648						
9	572	556	564	655	639	645						
10	571	556	562	650	635	641						
11	575	556	565	647	628	636						
12	577	566	571	650	634	641						
13	582	560	570	650	618	631						
14	580	562	571	642	620	629						
15	590	570	578	653	635	643						
16	595	579	587	661	644	650						
17	590	579	583	664	649	656						
18	587	578	582	662	651	657						
19	594	585	589	661	643	651						
20	586	583	584	655	625	639						
21	592	583	586	638	625	631						
22	592	580	588	650	635	639						
23	618	582	593	665	650	659						
24	607	584	598	667	653	660						
25	611	607	608	666	657	661						
26	610	602	605	672	664	668						
27	620	604	612	674	659	667						
28	616	609	612	675	665	669						
29	617	608	612	686	669	675						
30	623	610	616	693	686	690						
31	623	612	616	---	---	---						
MONTH	658	548	583	693	608	649						

*--Instantaneous value from USGS sample or field measurement.

06307740 OTTER CREEK AT ASHLAND, MT

LOCATION.--Lat 45°38'18", long 106°15'17" (NAD 27), in NE¼NE¼SE¼ sec.11, T.3 S., R.44 E.,Rosebud County, Hydrologic Unit 10090102, on left bank 200 ft downstream from bridge on U.S. Highway 212, 0.3 mi southeast of Ashland, and at river mile 2.7.

DRAINAGE AREA.--707 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to November 1985, October 1987 to September 1995, October 2003 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 2,916.57 ft (NGVD 29).

REMARKS.--Water-discharge records poor. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). Diversion for irrigation of about 4,200 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.50	1.9	e1.0	e0.90	e0.80	e1.0	7.4	e0.60	e1.5	e1.2	e0.70	e0.40
2	e0.50	1.7	e1.0	e0.80	e0.80	e1.0	7.1	e0.50	e1.5	e1.2	e0.70	e0.40
3	e0.50	1.6	e1.0	e0.70	e0.75	e1.0	7.0	e0.50	e1.5	e1.1	e0.70	e0.40
4	e0.50	1.5	e1.0	e0.50	e0.75	e1.0	6.2	e0.50	1.4	e1.1	e0.60	e0.40
5	e0.50	1.5	e0.90	e0.40	e0.75	e1.0	6.1	e0.50	1.2	e1.0	e0.50	e0.40
6	e0.55	1.6	e1.0	e0.50	e0.70	e1.0	6.5	e0.50	1.1	e1.1	e0.40	e0.40
7	e0.55	1.4	e1.0	e0.70	e1.0	e0.90	5.8	e0.50	0.96	e1.1	e0.40	e0.40
8	0.50	1.5	e1.0	e0.90	e0.80	e0.90	6.4	e0.50	e0.75	e1.0	e0.40	e0.40
9	0.50	1.2	e1.0	e1.0	e0.80	e1.0	6.0	e0.40	e0.75	e1.0	e0.40	e0.40
10	0.50	0.96	e1.0	e1.0	e1.0	e1.5	5.8	e0.50	e0.75	e1.0	e0.40	e0.40
11	e0.50	0.88	e0.90	e1.0	e1.0	e2.5	5.3	e0.50	e0.80	e1.0	e0.40	e0.40
12	e0.60	0.75	e0.80	e1.0	e0.80	4.8	4.8	e0.50	e0.80	e1.0	e0.40	e0.40
13	e0.60	0.38	e0.90	e1.0	e0.90	8.3	4.4	e0.50	e0.80	e1.0	e0.40	e0.40
14	e0.60	0.44	e1.0	e1.0	e1.0	14	3.9	e0.50	e0.80	1.0	e0.40	e0.40
15	e0.60	0.65	e1.0	e1.0	e1.0	14	e4.0	e0.50	e0.80	e1.0	e0.40	e0.40
16	e0.60	0.63	e1.0	e1.0	e1.0	13	e4.0	e0.50	e0.80	e1.0	e0.40	e0.45
17	e0.60	0.70	e1.0	e0.90	e1.0	14	e3.5	e0.60	e0.90	e1.0	0.40	e0.50
18	e0.60	0.72	e1.0	e1.0	e1.0	13	e3.5	e0.60	e0.90	e1.0	e0.40	e0.50
19	e0.60	0.71	e1.0	e1.0	e1.0	11	e3.0	e0.70	e1.0	e1.0	e0.40	e0.50
20	e0.60	0.70	e1.0	e1.0	e1.0	10	e3.0	e0.80	e1.0	e1.0	e0.40	e0.50
21	e0.60	e0.65	e1.0	e1.0	e1.5	8.2	e2.5	2.9	1.1	e0.90	e0.40	e0.50
22	e0.60	e0.60	e1.0	e1.0	e1.0	6.9	e2.5	1.6	e1.1	e0.90	e0.40	e0.50
23	e0.60	e0.50	e1.0	e1.5	e1.0	5.8	e2.0	e1.6	e1.1	e0.90	e0.40	e0.50
24	e0.60	e0.60	e1.0	e1.5	e1.0	7.2	e1.5	e1.8	e1.1	e0.90	e0.40	e0.50
25	e0.60	e0.70	e1.0	e1.0	e1.5	7.6	e1.3	e1.5	1.1	e0.80	e0.40	e0.50
26	e0.70	e0.80	e1.0	e0.90	e1.5	7.2	e1.2	e1.5	e1.1	e0.80	e0.40	0.63
27	e0.80	e1.0	e1.5	e0.80	e1.5	7.4	e1.0	e1.5	e1.2	e0.80	e0.40	0.56
28	e1.0	e1.0	e1.0	e0.70	e1.0	7.5	e0.90	e1.5	e1.2	e0.80	e0.40	0.72
29	e1.5	e1.0	e0.90	e0.80	e1.0	7.4	e0.80	e1.5	e1.2	e0.80	e0.40	0.93
30	1.7	e1.0	e1.0	e0.90	---	7.1	e0.70	e1.5	e1.2	e0.80	e0.40	0.89
31	2.1	---	e1.0	e0.90	---	7.9	---	e1.5	---	e0.80	e0.40	---
TOTAL	21.80	29.27	30.90	28.30	28.85	195.10	118.10	29.10	31.41	30.00	13.60	14.68
MEAN	0.70	0.98	1.00	0.91	0.99	6.29	3.94	0.94	1.05	0.97	0.44	0.49
MAX	2.1	1.9	1.5	1.5	1.5	14	7.4	2.9	1.5	1.2	0.70	0.93
MIN	0.50	0.38	0.80	0.40	0.70	0.90	0.70	0.40	0.75	0.80	0.40	0.40
AC-FT	43	58	61	56	57	387	234	58	62	60	27	29

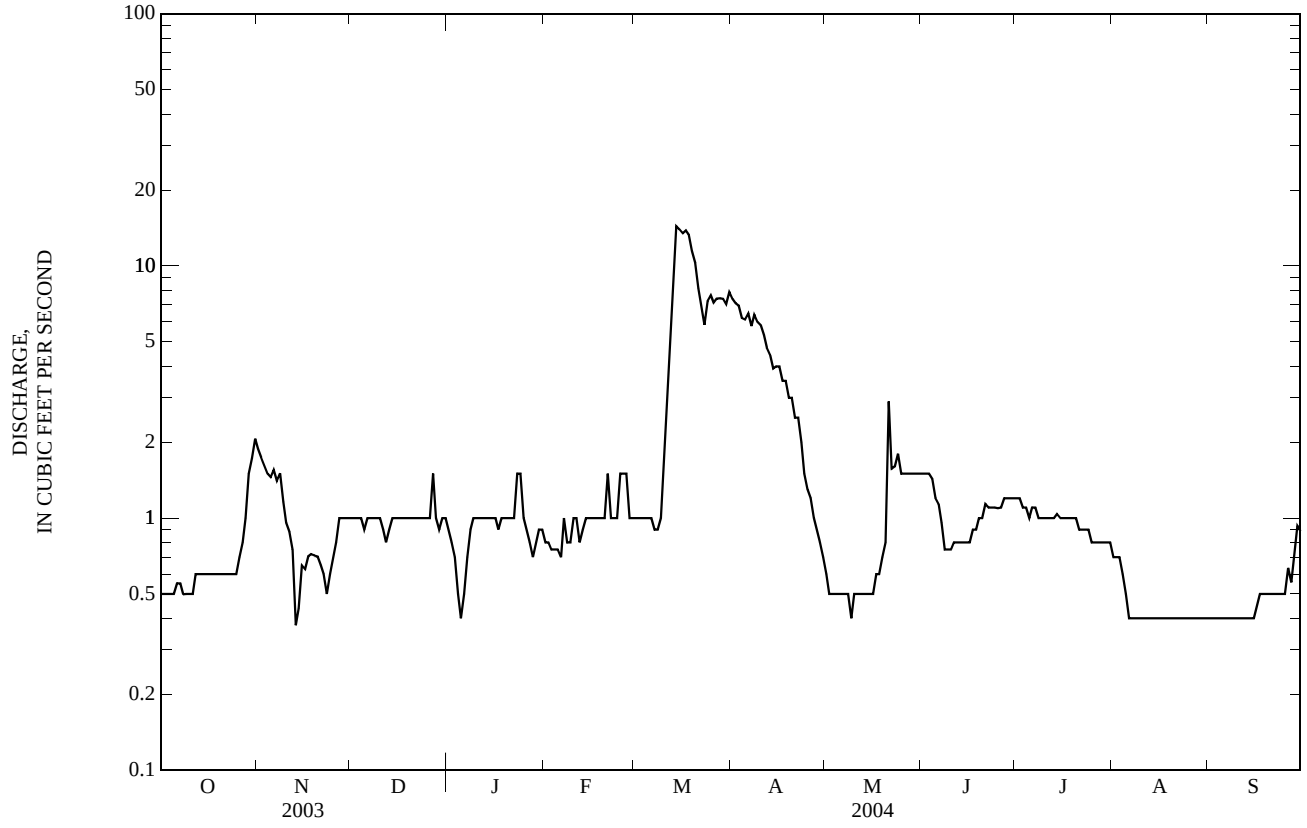
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY*)

MEAN	1.39	2.45	2.44	4.73	6.78	15.0	6.35	6.98	4.25	2.23	1.32	0.87
MAX	4.43	6.12	7.03	30.2	34.9	107	28.1	53.1	15.7	8.93	5.53	4.08
(WY)	(1973)	(1980)	(1976)	(1975)	(1974)	(1975)	(1975)	(1978)	(1978)	(1978)	(1982)	(1978)
MIN	0.18	0.71	0.57	0.10	0.36	1.26	0.99	0.71	0.36	0.28	0.00	0.00
(WY)	(1993)	(1992)	(1993)	(1991)	(1993)	(1992)	(1992)	(1992)	(1993)	(1977)	(1992)	(1992)

06307740 OTTER CREEK AT ASHLAND, MT—Continued

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004*	
ANNUAL TOTAL	571.11			
ANNUAL MEAN	1.56		b4.57	
HIGHEST ANNUAL MEAN			19.0	1975
LOWEST ANNUAL MEAN			0.60	1992
HIGHEST DAILY MEAN	14	Mar 14	350	Mar 6, 1994
LOWEST DAILY MEAN	0.38	Nov 13	0.00	Oct 14, 1976
ANNUAL SEVEN-DAY MINIMUM	0.40	Aug 6	0.00	Jun 24, 1977
MAXIMUM PEAK FLOW	Unknown		425	Mar 21, 1978
MAXIMUM PEAK STAGE	a5.15	Feb 21	a9.08	Mar 6, 1994
INSTANTANEOUS LOW FLOW			c0.00	Oct 1, 1990
ANNUAL RUNOFF (AC-FT)	1,130		3,310	
10 PERCENT EXCEEDS	3.6		8.0	
50 PERCENT EXCEEDS	0.98		2.0	
90 PERCENT EXCEEDS	0.40		0.29	

*--During period of operation (1973-85, 1988-95, October 2003 to September 2004).
a--Backwater from ice and beaver dam.
b--Median of yearly mean discharge, 3.4 ft^3/s, 2,460 acre-ft/yr.
c--No flow at times most years.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-85, July 2003 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1980 to August 1985, May 2004 to September 2004.

INSTRUMENTATION.--A specific conductance probe was installed in May 2004.

REMARKS.--Specific conductance record is rated good. Missing daily specific conductance data for June 19-21, July 7-13, 20-21, 23-31, Aug. 3, Sept. 15-16 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 3,850 microsiemens per centimeter (µS/cm), Dec. 3, 1983; minimum daily mean, 942 µS/cm , Feb. 19, 1982.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 3,050 microsiemens per centimeter (µS/cm), June 6; minimum daily mean, 2,310 µS/cm, May 25.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
07...	1400	E.55	678	13.1	151	8.8	2,210	26.0	16.0	610	53.6	116	16.3
NOV													
13...	1400	.84	685	12.0	101	8.5	2,200	12.0	3.5	680	75.3	119	17.0
DEC													
03...	1200	E1.0	686	13.7	105	8.2	2,740	0.0	0.0	840	90.6	150	21.3
FEB													
03...	0945	E.75	687	13.0	100	7.6	2,640	-4.0	0.0	750	86.2	129	18.1
MAR													
10...	1300	E1.5	691	--	--	8.4	1,960	7.0	0.5	600	64.0	107	13.3
APR													
14...	0830	4.7	677	7.6	78	8.5	2,760	12.0	11.0	840	81.0	154	19.5
26...	1000	E1.2	694	6.5	69	8.5	2,820	18.0	13.5	740	72.2	135	17.4
MAY													
12...	1030	E.50	687	9.0	90	8.5	2,870	6.5	10.5	820	77.3	152	20.2
24...	1100	1.8	652	7.6	89	8.4	2,330	13.0	14.5	660	64.2	121	17.0
JUN													
08...	0845	E.75	685	8.2	98	8.6	2,930	15.0	18.0	810	73.0	151	20.9
23...	1200	E1.1	688	10.3	131	8.5	2,670	30.0	21.5	740	65.0	140	19.9
JUL													
13...	0830	E1.0	680	--	--	8.2	2,690	19.0	20.0	700	56.6	135	20.3
AUG													
18...	0745	E.40	689	7.8	97	8.0	2,390	17.5	20.5	650	51.9	126	19.3

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT													
07...	5	296	454	11.9	.8	7.4	786	1,560	2.12	E2.32	39	59	E.09
NOV													
13...	5	295	506	12.8	.9	18.2	715	1,560	2.12	3.53	88	186	.42
DEC													
03...	6	401	565	15.0	1.0	17.7	1,020	2,060	2.80	E5.55	77	69	E.19
FEB													
03...	6	368	511	13.0	1.0	20.8	943	1,890	2.57	E3.83	50	53	E.12
MAR													
10...	5	270	357	9.37	.6	7.39	761	1,450	1.97	E5.87	86	19	E.08
APR													
14...	6	404	525	13.7	.9	7.97	1,040	2,040	2.77	25.9	68	158	2.0
26...	6	377	587	13.1	.9	6.97	1,050	2,020	2.75	E6.56	92	131	E.42
MAY													
12...	7	444	579	14.0	1.0	8.38	1,110	2,170	2.96	E2.94	85	103	E.14
24...	6	332	503	10.7	.8	9.09	829	1,690	2.29	8.20	95	73	.35
JUN													
08...	7	434	610	12.9	1.0	7.36	1,050	2,120	2.89	E4.29	68	113	E.23
23...	6	402	575	13.7	.9	5.69	944	1,940	2.64	E5.76	95	92	E.27
JUL													
13...	7	397	598	13.7	1.0	8.12	961	1,950	2.66	E5.27	97	26	E.07
AUG													
18...	6	330	580	13.4	.9	13.0	825	1,730	2.35	E1.87	95	112	E.12

E--Estimated.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)
FEB													
03...	0945	.061	.677	.009	1.01	<.006	.019	<3	129	1.0	E1	29	33
MAR													
10...	1300	<.010	E.013	.002	.54	<.006	.046	E1	60	1.0	E1	23	25
APR													
14...	0830	E.009	<.016	<.002	.90	<.006	.066	<3	371	1.7	2	38	48
26...	1000	E.005	<.016	<.002	.67	<.006	.089	<3	589	1.7	E2	43	57
MAY													
12...	1030	<.010	<.016	E.001	.63	<.006	.043	<3	183	1.9	E2	41	43
24...	1100	<.010	<.016	E.001	.44	<.006	.085	2	467	1.9	2	60	69
JUN													
08...	0845	<.010	<.016	E.001	.60	<.006	.05	<3	172	3.0	3	54	58
23...	1200	.011	<.016	<.002	.69	<.006	.054	<3	234	2.3	2	46	50
JUL													
13...	0830	E.005	<.016	<.002	.87	<.006	.082	E2	276	4.5	3	46	55
AUG													
18...	0745	.025	E.012	.002	.93	<.006	.111	3	726	3.7	4	42	60

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
03...	<.12	<.12	464	<.08	E.04	6	4.0	6.6	E16	390	<.16	.51	114
MAR													
10...	<.06	<.06	289	<.04	<.04	<1	3.7	4.9	50	310	<.08	.15	74.1
APR													
14...	<.12	<.12	491	<.08	<.08	12	4.2	7.0	E14	890	<.16	.91	111
26...	<.12	<.12	472	<.08	E.07	1	4.8	8.0	<19	1,360	E.11	1.41	107
MAY													
12...	<.12	<.12	588	<.08	<.08	12	6.1	6.2	<19	490	<.16	.52	121
24...	<.06	E.05	468	E.02	E.03	14	4.2	7.3	E12	1,030	<.08	1.13	119
JUN													
08...	<.12	<.12	594	<.08	<.08	<1	5.9	8.1	<19	470	<.16	.45	124
23...	<.12	<.12	584	<.08	<.08	<1	5.8	7.3	E13	540	<.16	.55	114
JUL													
13...	<.12	<.12	611	<.08	E.04	E3	4.7	7.3	E14	620	<.16	.69	113
AUG													
18...	<.06	.06	613	E.04	.07	<1	6.4	6.8	<19	1,600	.09	1.61	107

E--Estimated.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
FEB										
03...	54.2	67	<.02	3.15	4.84	2.3	1.9	1,990	8.9	11
MAR										
10...	76.4	77	<.02	3.34	4.02	1.2	1.1	1,250	2.3	3
APR										
14...	51.8	144	<.02	3.67	5.84	1.6	1.0	1,710	2.6	7
26...	40.4	146	<.02	3.88	7.74	1.5	.9	1,760	3.3	8
MAY										
12...	28.7	69	<.02	3.19	5.87	1.5	1.2	1,780	5.0	5
24...	40.8	141	<.02	4.34	5.36	1.3	1.4	1,400	2.0	6
JUN										
08...	76.6	107	<.02	3.61	7.00	1.4	1.3	1,740	3.1	12
23...	36.0	85	<.02	3.71	5.30	.9	1.3	1,430	3.4	6
JUL										
13...	65.6	119	<.02	3.57	5.69	1.3	1.0	1,320	2.6	7
AUG										
18...	16.4	139	<.02	2.92	5.99	1.4	1.9	1,210	3.3	8

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1	---	---	---	2,870	2,830	2,850	2,820	2,770	2,800	2,860	2,840	2,850
2	---	---	---	2,920	2,870	2,890	2,800	2,750	2,770	2,860	2,840	2,860
3	---	---	---	3,000	2,920	2,980	2,800	2,750	2,770	---	---	---
4	---	---	---	3,030	3,000	3,020	2,840	2,740	2,780	2,830	2,770	2,810
5	---	---	---	3,020	2,990	3,000	2,810	2,660	2,730	2,810	2,710	2,780
6	---	---	---	3,050	3,000	3,020	2,740	2,600	2,640	2,800	2,740	2,780
7	---	---	---	3,020	2,970	2,990	2,660	2,590	2,630	2,780	2,760	2,770
8	---	---	---	3,020	2,980	3,000	---	---	---	2,770	2,710	2,760
9	---	---	---	3,010	2,970	2,990	---	---	---	2,770	2,690	2,720
10	---	---	---	3,000	2,960	2,990	---	---	---	2,760	2,700	2,740
11	---	---	---	2,980	2,920	2,950	---	---	---	2,760	2,650	2,720
12	---	---	*2,870	2,920	2,900	2,910	---	---	---	2,740	2,680	2,720
13	---	---	---	2,930	2,890	2,910	---	---	*2,690	2,740	2,690	2,710
14	---	---	---	2,890	2,860	2,870	2,780	2,620	2,770	2,720	2,680	2,700
15	---	---	---	2,880	2,840	2,860	2,790	2,770	2,780	2,700	2,670	2,680
16	---	---	---	2,880	2,810	2,850	2,780	2,760	2,770	2,690	2,670	2,680
17	---	---	---	2,860	2,820	2,830	2,780	2,770	2,770	2,680	2,640	2,670
18	---	---	---	2,820	2,800	2,800	2,780	2,770	2,780	2,690	2,640	2,670
19	---	---	---	---	---	---	2,800	2,780	2,790	2,680	2,650	2,670
20	---	---	*2,700	---	---	---	---	---	---	2,680	2,660	2,670
21	---	---	---	---	---	*2,670	---	---	---	2,670	2,640	2,660
22	---	---	---	2,720	2,700	2,700	2,840	2,770	2,830	2,660	2,590	2,650
23	---	---	---	2,710	2,650	2,680	---	---	---	2,650	2,610	2,630
24	---	---	*2,330	2,700	2,660	2,670	---	---	---	2,630	2,590	2,600
25	2,350	2,310	2,330	2,690	2,660	2,680	---	---	---	2,650	2,570	2,620
26	2,450	2,350	2,410	2,730	2,680	2,710	---	---	---	2,650	2,540	2,590
27	2,470	2,440	2,450	2,760	2,720	2,750	---	---	---	2,710	2,550	2,660
28	2,620	2,470	2,520	2,780	2,760	2,770	---	---	---	2,730	2,550	2,650
29	2,670	2,620	2,650	2,790	2,780	2,790	---	---	---	2,760	2,560	2,640
30	2,740	2,670	2,700	2,800	2,780	2,800	---	---	---	2,600	2,560	2,570
31	2,830	2,740	2,790	---	---	---	---	---	---	2,590	2,570	2,580
MONTH	2,830	2,310	2,550	3,050	2,650	2,860	2,840	2,590	2,760	2,860	2,540	2,690

*--Instantaneous value from USGS sample or field inspection.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
		SEPTEMBER	
1	2,610	2,590	2,600
2	2,640	2,610	2,620
3	2,640	2,620	2,630
4	2,630	2,610	2,620
5	2,640	2,630	2,630
6	2,640	2,640	2,640
7	2,640	2,630	2,640
8	2,650	2,630	2,640
9	2,660	2,650	2,650
10	2,680	2,660	2,670
11	2,700	2,680	2,690
12	2,740	2,700	2,710
13	2,730	2,700	2,720
14	2,720	2,640	2,700
15	---	---	*2,590
16	---	---	---
17	2,690	2,680	2,680
18	2,700	2,680	2,690
19	2,690	2,650	2,670
20	2,660	2,600	2,630
21	2,620	2,590	2,600
22	2,620	2,560	2,590
23	2,630	2,570	2,590
24	2,660	2,570	2,600
25	2,660	2,610	2,630
26	2,670	2,570	2,620
27	2,650	2,570	2,620
28	2,600	2,500	2,550
29	2,540	2,460	2,500
30	2,490	2,440	2,470
31	---	---	---
MONTH	2,740	2,440	2,630

*--Instantaneous value from USGS sample or field inspection.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT

LOCATION.--Lat 45°50'24", long 106°13'22" (NAD 27), in SE¼SW¼NE¼ sec.14, T.1N., R.44E., Rosebud County, Hydrologic Unit 10090102, on right bank downstream from county bridge, 22 mi north of Ashland, and at river mile 81.3.

DRAINAGE AREA.--3,948 mi^2. Area at site used prior to July 2000, 4,062 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to September 1984, July 2000 to current year.

GAGE--Water-stage recorder. Elevation of gage is 2,760 ft (NGVD 29), from topographic map. October 1973 to September 1984, water-stage recorder at site 6.5 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming combined capacity (about 15,000 acre-ft). Diversions for irrigation for about 73,000 acres above station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	144	e160	e100	e110	e190	186	152	188	202	229	116
2	154	143	e140	e90	e110	e190	183	154	179	206	231	110
3	153	142	e130	e80	e120	e200	184	154	164	201	244	115
4	147	142	e120	e70	e120	e200	184	144	160	207	244	118
5	140	e100	e100	e60	e120	e200	185	138	148	210	246	121
6	136	e110	e130	e80	e120	e200	183	133	147	213	280	121
7	e135	e120	e120	e100	e140	e220	168	157	140	213	277	109
8	e135	e130	e130	e100	e160	234	165	164	145	183	242	105
9	e136	e140	e130	e110	e140	246	173	162	156	184	227	103
10	140	e140	e130	e120	e120	208	169	175	156	187	222	101
11	139	e150	e120	e120	e100	188	167	177	166	195	214	100
12	139	e150	e100	e120	e90	176	166	175	188	192	201	103
13	140	e150	e110	e120	e100	165	165	181	214	183	190	111
14	140	e150	e120	e120	e110	159	165	183	206	178	185	115
15	142	e140	e130	e120	e120	158	151	182	211	184	192	113
16	144	e130	e130	e120	e120	155	149	212	207	189	187	109
17	144	e120	e140	e110	e130	155	149	236	214	200	178	112
18	143	e100	e140	e120	e160	155	153	240	217	203	168	97
19	142	e100	e150	e120	e250	153	154	238	216	202	170	99
20	144	e90	e150	e130	e170	150	144	236	e200	196	172	105
21	146	e80	e140	e130	e160	173	147	232	e200	204	177	109
22	150	e70	e140	e120	e150	187	147	276	e190	205	184	111
23	147	e90	e140	e120	e170	188	151	263	e190	217	197	112
24	138	e110	e140	e100	e180	187	145	251	192	238	182	103
25	137	e140	e150	e90	e180	188	146	228	184	248	175	100
26	138	186	e160	e80	e200	189	145	217	192	242	144	100
27	139	258	e160	e70	e220	188	135	212	198	237	126	98
28	140	e200	e150	e70	e210	187	135	206	200	241	126	99
29	161	e180	e140	e80	e200	188	139	208	183	232	125	103
30	154	e170	e130	e90	---	186	147	214	186	229	120	105
31	149	---	e120	e120	---	186	---	205	---	228	119	---
TOTAL	4,453	4,075	4,150	3,180	4,280	5,749	4,780	6,105	5,537	6,449	5,974	3,223
MEAN	144	136	134	103	148	185	159	197	185	208	193	107
MAX	161	258	160	130	250	246	186	276	217	248	280	121
MIN	135	70	100	60	90	150	135	133	140	178	119	97
AC-FT	8,830	8,080	8,230	6,310	8,490	11,400	9,480	12,110	10,980	12,790	11,850	6,390

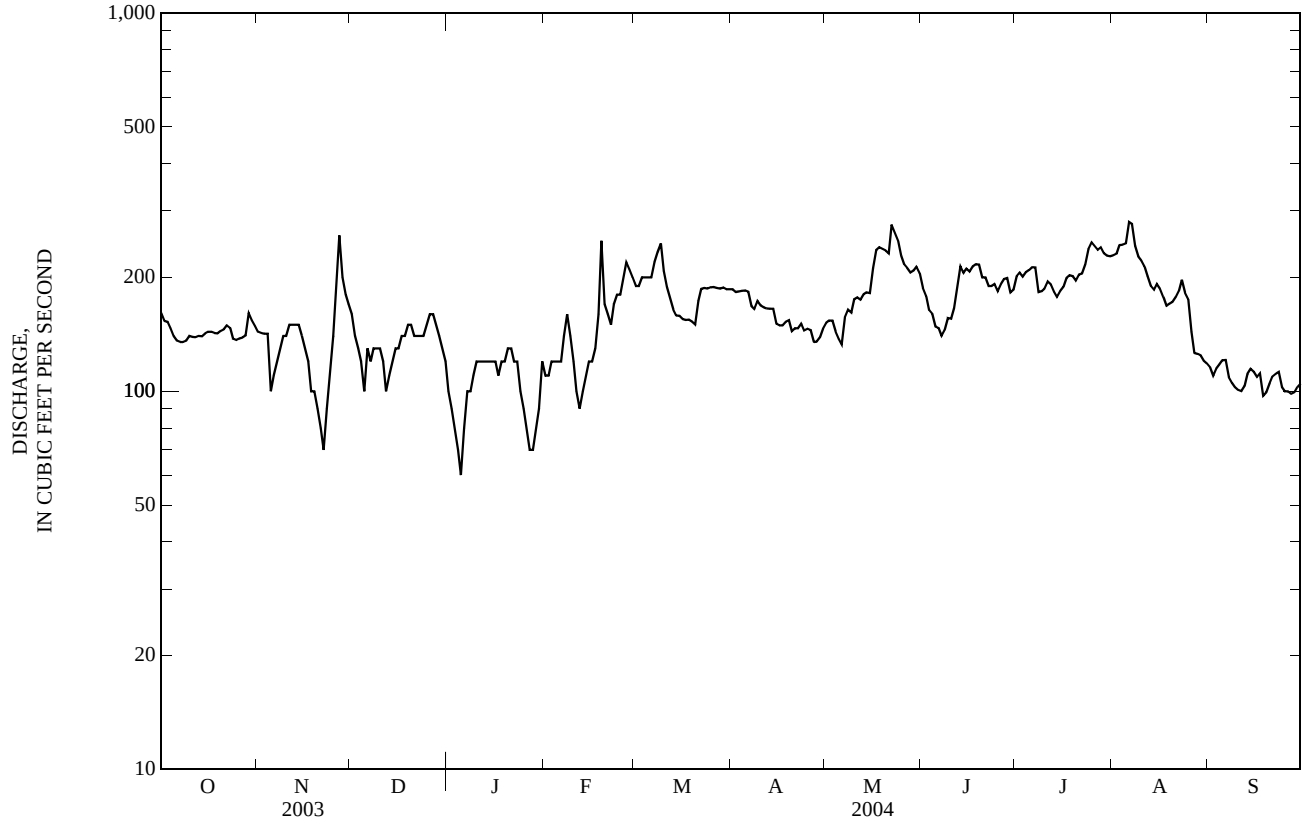
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY)*

MEAN	257	203	184	204	216	287	300	759	1,323	630	405	292
MAX	511	388	389	334	406	705	594	2,502	3,452	2,261	915	436
(WY)	(1974)	(1974)	(1979)	(1975)	(1983)	(1975)	(1975)	(1978)	(1978)	(1975)	(1975)	(1979)
MIN	104	84.3	95.5	93.1	90.4	81.3	98.3	111	185	183	125	107
(WY)	(2002)	(1976)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2004)	(2002)	(2001)	(2004)

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004*	
ANNUAL TOTAL	121,306		57,955			
ANNUAL MEAN	332		158		424	
HIGHEST ANNUAL MEAN					885	1975
LOWEST ANNUAL MEAN					120	2002
HIGHEST DAILY MEAN	2,500	Mar 15	280	Aug 6	7,600	May 22, 1978
LOWEST DAILY MEAN	50	Feb 24	60	Jan 5	45	Nov 30, 1975
ANNUAL SEVEN-DAY MINIMUM	81	Feb 22	83	Jan 1	53	Nov 25, 1975
MAXIMUM PEAK FLOW			a394	Aug 6	c8,280	May 22, 1978
MAXIMUM PEAK STAGE			b8.36	Feb 22	b11.49	Mar 15, 2003
ANNUAL RUNOFF (AC-FT)	240,600		115,000		307,000	
10 PERCENT EXCEEDS	844		216		858	
50 PERCENT EXCEEDS	161		150		262	
90 PERCENT EXCEEDS	100		103		110	

*--During period of operation (October 1973 to September 1984, July 2000 to current year).
a--Gage height, 4.15 ft.
b--Backwater from ice.
c--Gage height, 9.96 ft, site and datum then in use.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-81, June 2000 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 2000 to current year, (seasonal operation dependent on ice conditions).
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1981.

INSTRUMENTATION.--Conductance probe installed Aug. 23, 2000.

REMARKS.--Specific conductance rated excellent from Oct. 24 to Nov. 13, May 12 to June 23, and Aug. 23 to Sept. 30. Record is rated good for the remaining period of operation. Missing conductance record for Oct. 2-23, May 18 and 19, June 9, 10, 20-23 due to equipment problems. Missing water-quality data for Sept. 15 due to loss of samples during shipment to lab. Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,140 microsiemens per centimeter (µS/cm), Jan. 2, 3, 2002; minimum, 361 µS/cm, July 1 and 2, 2003.
SEDIMENT CONCENTRATION: Maximum daily mean, 6,400 µg/L July 26, 1979; minimum daily mean, 1 mg/L Oct. 18, 24, 1976.
SEDIMENT LOAD: Maximum daily, 27,200 tons May 19, 1978; minimum daily, 0.47 ton Nov. 15-17, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: During period of seasonal operation, maximum, 850 microsiemens per centimeter (µS/cm), Nov. 8; minimum, 584 µS/cm, May 17.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
07...	1030	134	685	9.4	98	8.6	703	19.0	12.5	290	55.5	37.0	4.76
NOV													
13...	1200	E150	692	12.6	95	8.5	700	13.0	.0	300	57.7	36.6	4.07
DEC													
03...	1015	E130	691	11.7	89	8.1	756	8.0	.0	330	61.4	43.4	4.12
JAN													
22...	0900	E120	694	9.1	69	8.3	806	-1.0	.0	350	68.5	43.1	4.11
FEB													
04...	1000	E120	686	9.6	73	8.9	907	-10.0	.0	380	74.8	45.8	4.48
18...	1000	E160	687	9.2	70	8.1	870	8.0	.0	380	75.6	46.4	4.16
MAR													
10...	1430	199	696	--	--	8.2	720	6.5	5.0	290	56.1	36.4	3.75
23...	1100	189	652	10.8	110	7.9	808	13.5	9.0	340	64.2	44.6	4.57
APR													
14...	1100	167	682	9.4	99	8.5	784	19.0	12.5	320	58.8	41.6	4.46
28...	1230	137	681	9.4	102	8.5	780	10.5	14.0	330	61.2	42.4	4.56
MAY													
12...	1400	179	691	10.5	103	8.4	718	5.0	10.0	310	58.4	39.2	4.14
24...	1300	249	657	9.0	101	8.5	702	11.0	13.5	300	57.2	38.4	4.03
JUN													
08...	1215	146	690	8.5	100	8.5	764	17.0	18.0	310	53.0	42.0	4.77
23...	1430	E190	690	9.7	123	8.5	712	33.0	22.0	290	51.8	38.3	3.94
JUL													
13...	1130	189	680	7.9	105	8.4	680	31.0	23.5	250	42.1	35.4	4.03
26...	1400	246	688	8.0	108	8.4	670	35.0	25.0	260	46.7	33.8	3.82
AUG													
18...	1015	174	694	8.2	98	8.1	674	26.0	19.5	260	43.9	36.4	4.19
23...	1300	199	680	8.6	111	8.6	641	27.5	22.0	250	41.3	34.6	3.93
SEP													
15...	1230	110	687	9.3	105	8.6	736	19.0	16.0	--	--	--	--
28...	0900	101	692	9.2	95	8.4	780	14.0	12.5	290	48.6	41.7	4.79

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT													
07...	1	50.8	189	4.50	.3	4.4	167	437	.59	158	39	31	11
NOV													
13...	1	45.9	195	4.21	.4	4.4	162	432	.59	E175	73	50	E20
DEC													
03...	1	47.0	208	4.54	.3	4.1	177	466	.63	E164	85	22	E7.7
JAN													
22...	1	50.9	197	5.28	.4	5.45	173	469	.64	E152	87	17	E5.5
FEB													
04...	1	56.6	246	6.14	.4	5.87	200	543	.74	E176	82	29	E9.4
18...	1	58.5	221	5.42	.4	5.24	186	515	.70	E218	88	14	E6.0
MAR													
10...	1	50.2	194	4.59	.3	3.51	170	442	.60	237	86	36	19
23...	1	56.4	217	5.37	.4	1.80	188	496	.67	253	74	35	18
APR													
14...	1	53.6	214	5.60	.3	2.52	178	474	.64	214	83	26	12
28...	1	54.0	223	5.66	.3	3.15	185	490	.67	181	79	14	5.2
MAY													
12...	1	45.9	219	5.40	.3	3.87	169	458	.62	221	70	34	16
24...	1	44.6	209	5.05	.3	2.94	157	435	.59	293	90	61	41
JUN													
08...	1	57.1	221	5.65	.3	4.14	177	478	.65	188	81	41	16
23...	1	48.9	208	5.21	.3	2.24	161	437	.59	E224	91	48	E25
JUL													
13...	1	47.3	196	4.94	.3	2.68	157	411	.56	210	41	185	94
26...	1	38.9	202	4.64	.3	2.94	140	393	.53	261	91	50	33
AUG													
18...	1	45.7	198	4.53	.3	4.93	152	410	.56	193	96	50	23
23...	1	41.6	194	4.18	.4	4.61	149	396	.55	219	96	50	27
SEP													
15...	--	--	--	--	--	--	--	--	--	--	98	7	2.1
28...	1	55.3	228	4.93	.4	4.98	196	493	.67	134	69	27	7.4

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
FEB													
04...	1000	E.005	<.016	<.002	.17	<.006	.004	<2	25	.7	<2	65	69
MAR													
10...	1430	<.010	<.016	<.002	.21	<.006	.021	E1	152	.6	E1	45	48
APR													
14...	1100	<.010	<.016	<.002	.25	<.006	.014	2	60	.8	<2	62	64
28...	1230	<.010	<.016	<.002	.24	<.006	.010	2	34	.7	<2	61	59
MAY													
12...	1400	<.010	<.016	<.002	.34	<.006	.029	<2	131	.8	<2	62	60
24...	1300	<.010	<.016	<.002	.23	<.006	.054	2	360	.7	<2	58	67
JUN													
08...	1215	<.010	<.016	E.001	.24	<.006	.029	2	176	1.0	E1	65	65
23...	1430	<.010	<.016	<.002	.34	<.006	.035	4	276	.7	<2	57	62
JUL													
26...	1400	<.010	<.016	<.002	.36	<.006	.039	4	353	1.0	<2	58	64
AUG													
23...	1300	<.010	<.016	<.002	.37	<.006	.043	2	459	1.0	<2	58	68

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)
FEB													
04...	<.06	<.06	99	--	.10	<.04	<1	1.9	1.6	11	90	E.04	.10
MAR													
10...	<.06	<.06	78	--	<.04	<.04	<1	1.5	1.9	13	320	<.08	.25
APR													
14...	<.06	<.06	103	--	<.04	<.04	<1	1.7	1.8	15	160	<.08	.11
28...	<.06	<.06	114	--	<.04	<.04	<1	2.2	1.4	13	100	<.08	.09
MAY													
12...	<.06	<.06	92	--	<.04	<.04	5	1.9	1.9	12	320	<.08	.34
24...	<.06	E.03	85	--	<.04	<.04	6	1.9	10.6	10	820	E.05	.82
JUN													
08...	<.06	<.06	103	--	<.04	<.04	<1	2.1	3.0	15	400	E.05	.40
23...	<.06	<.06	84	--	<.04	E.02	<1	2.4	2.5	E5	590	<.08	.59
JUL													
26...	<.06	<.06	76	--	<.04	E.02	<1	2.0	3.5	<6	630	<.08	.66
AUG													
23...	<.06	E.05	84	91	<.04	<.04	<1	1.5	2.9	E4	1,000	<.08	.88

Date	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
FEB											
04...	24.7	10.4	13	<.02	2.09	3.05	.5	E.3	670	2.3	4
MAR											
10...	19.6	20.9	36	<.02	2.50	2.51	E.4	E.4	532	.9	3
APR											
14...	23.0	13.7	35	<.02	1.80	2.38	.4	E.4	617	1.1	E2
28...	23.4	16.7	25	<.02	2.15	1.39	E.4	E.2	627	2.5	E2
MAY											
12...	22.3	8.1	48	<.02	1.56	2.79	.5	.6	576	1.0	E2
24...	23.2	5.6	76	<.02	2.82	3.28	E.4	E.4	545	.8	4
JUN											
08...	26.5	4.9	70	<.02	1.80	3.17	.5	.6	616	1.1	2
23...	19.2	6.2	54	<.02	1.96	2.13	E.2	E.4	531	1.2	3
JUL											
26...	23.6	3.2	55	<.02	3.92	3.31	.5	.5	497	1.6	4
AUG											
23...	23.8	3.5	50	<.02	2.80	3.85	E.3	.6	475	.8	5

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 (SEASONAL)

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			APRIL			MAY	
1	694	638	685	733	726	729				811	752	761
2	---	---	---	746	732	736				822	765	792
3	---	---	---	748	733	741				766	756	761
4	---	---	---	757	736	741				765	756	761
5	---	---	---	813	757	786				767	756	762
6	---	---	---	846	810	827				771	762	766
7	---	---	703*	844	818	833				769	747	757
8	---	---	---	850	818	837				747	739	743
9	---	---	---	838	796	819				744	736	739
10	---	---	---	806	767	789				737	724	728
11	---	---	---	767	731	753				724	694	719
12	---	---	---	747	721	735				730	702	721
13	---	---	---							732	727	730
14	---	---	---							730	722	726
15	---	---	---							738	727	732
16	---	---	---							735	696	725
17	---	---	---							715	584	695
18	---	---	---							---	---	---
19	---	---	---							---	---	---
20	---	---	---							720	706	714
21	---	---	---							724	713	718
22	---	---	---							745	673	692
23	---	---	---							776	686	712
24	736	732	734							699	685	693
25	737	734	736							708	698	704
26	737	731	734							726	697	708
27	739	734	735							735	720	729
28	741	716	737				---	---	*780	740	725	735
29	716	691	698				776	767	772	734	723	730
30	716	696	705				768	756	761	726	718	722
31	728	715	722				---	---	---	730	716	723
MONTH	741	638	721	850	721	777	776	756	766	822	584	731
		JUNE			JULY			AUGUST			SEPTEMBER	
1	740	726	733	695	677	683	662	647	654	748	733	742
2	748	731	739	679	667	673	664	649	655	749	740	744
3	761	742	751	672	645	661	651	621	639	743	728	736
4	762	751	759	670	655	662	652	633	644	738	726	731
5	763	756	761	680	664	674	645	625	635	730	720	726
6	766	760	763	678	661	671	644	621	634	732	720	726
7	771	761	765	680	664	670	650	602	631	752	732	743
8	768	758	764	691	665	676	658	616	638	762	740	750
9	---	---	---	698	661	682	700	653	673	766	746	756
10	---	---	---	698	680	691	675	662	668	775	759	765
11	739	707	726	690	655	673	670	653	662	773	761	768
12	719	708	713	684	655	669	669	656	663	771	761	766
13	710	696	702	684	669	676	670	658	664	765	736	745
14	707	687	697	687	676	681	675	663	669	736	720	725
15	708	687	698	687	675	680	671	664	668	733	717	724
16	707	694	701	687	678	681	667	657	662	740	723	730
17	697	686	691	684	670	678	668	659	663	750	734	740
18	690	677	684	685	672	679	665	659	661	772	749	758
19	684	668	677	693	668	679	661	653	658	777	764	769
20	---	---	---	693	683	689	657	652	654	778	758	766
21	---	---	---	693	671	682	657	653	655	766	753	759
22	---	---	---	686	669	680	661	654	659	767	763	765
23	---	---	*712	678	666	672	656	645	649	767	762	764
24	708	694	699	670	652	664	657	652	655	771	762	766
25	708	702	705	663	648	656	661	651	655	772	763	768
26	705	694	699	657	645	650	684	661	673	776	764	769
27	700	691	696	658	647	653	710	684	704	780	770	775
28	696	682	689	651	644	649	716	707	712	791	761	782
29	707	695	700	656	643	650	720	715	717	784	745	769
30	704	688	694	660	646	653	729	719	724	786	766	780
31	---	---	---	662	648	655	738	727	733	---	---	---
MONTH	771	668	717	698	643	671	738	602	666	791	717	754

*--Instantaneous value from USGS sample.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

BIOLOGICAL SAMPLE, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Biomass periphyton, ashfree drymass g/m2 (49954)	Periphyton biomass ash weight, g/m2 (00572)	Periphyton biomass dry weight, g/m2 (00573)	Biomass chlorophyll ratio, periphyton, number (70950)	Pheophytin a, periphyton, mg/m2 (62359)	Chlorophyll a periphyton, mg/m2 (70957)
SEP 24...	1100	186	8.3	640	10.0	13.5	114.5	1,500	1,604	4,880	3.9	23.5

BENTHIC INVERTEBRATE SAMPLES
SEPTEMBER 23, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Nematoda	8	0.2
Tubificidae	15	0.5
Sphaeriidae	15	0.5
ODONATA		
Gomphidae	15	0.5
Calopterygidae	143	4.3
Coenagrionidae	30	0.9
EPHEMEROPTERA		
Acentrella insignificans	218	6.6
Acentrella parvula	15	0.5
Camelobaetidius warreni	75	2.3
Fallceon quilleri	270	8.2
Brachycercus	8	0.2
Rhithrogena	15	0.5
Stenonema	45	1.4
Asioplax	8	0.2
Tricorythodes	263	8.0
Neochoroterpes	113	3.4
PLECOPTERA		
Acroneuria abnormis	23	0.7
HEMIPTERA		
Corixidae	8	0.2
Ambrysus	8	0.2
TRICHOPTERA		
Brachycentrus occidentalis	23	0.7
Protoptila	8	0.2
Cheumatopsyche	390	11.8
Hydropsyche	90	2.7
Nectopsyche	68	2.0
Oecetis	8	0.2
Neureclipsis	15	0.5
LEPIDOPTERA		
Petrophila	30	0.9
COLEOPTERA		
Dubiraphia	180	5.5
Microcylloepus	645	19.5
Stenelmis	353	10.7
DIPTERA		
Simulium	120	3.6
Dicranota	8	0.2
CHIRONOMIDAE		
Chironomidae-pupae	15	0.5
Cricotopus/Orthocladius	30	0.9
Parakiefferiella	8	0.2
Paralauterborniella	8	0.2
Thienemanniella	15	0.5
Total number of taxon	37	
Total number of organisums	3,300	
Hilsenhoff biotic index	7	
EPT abundance	1,650	
Number of EPT taxon	18	

Richest targeted habitat sample--riffles
Composite of 5 samples (area of 0.25 m^2/sample)
Equipment type--Slack sampler;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Tubificidae	6	0.2
Lumbricidae	6	0.2
Sphaeriidae	6	0.2
ODONATA		
Gomphidae	12	0.4
Calopterygidae	12	0.4
EPHEMEROPTERA		
Acentrella insignificans	696	22.5
Acentrella parvula	6	0.2
Camelobaetidius warreni	36	1.2
Fallceon quilleri	300	9.7
Rhithrogena	198	6.4
Stenonema	24	0.8
Asioplax	12	0.4
Tricorythodes	78	2.5
Neochoroterpes	156	5.0
PLECOPTERA		
Acroneuria abnormis	6	0.2
Isogenoides	24	0.8
HEMIPTERA		
Metrobates	18	0.6
Ambrysus	6	0.2
TRICHOPTERA		
Protoptila	18	0.6
Cheumatopsyche	438	14.1
Hydropsyche	354	11.4
Ochrotrichia	12	0.4
Oecetis	18	0.6
LEPIDOPTERA		
Petrophila	186	6.0
COLEOPTERA		
Microcylloepus	138	4.5
Stenelmis	108	3.5
DIPTERA		
Simulium	210	6.8
CHIRONOMIDAE		
Tvetenia	12	0.4
Total number of taxon	28	
Total number of organisums	3,096	
Organisums per m^2	2,476	
Hilsenhoff biotic index	6.08	
EPT abundance	2,376	
Number of EPT taxon	16	
EPT per m^2	1,900	

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

ALGAE SAMPLES
SEPTEMBER 23, 2003

Richest targeted habitat sample--gravel, cobble
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.16	1.13
Adlafia minuscula	0.02	0.17
Adlafia suchlandtii	0.02	0.17
Amphipleura pellucida	0.01	0.09
Amphora inariensis	0.41	2.96
Amphora pediculus	0.20	1.48
Cocconeis pediculus	0.12	0.87
Cocconeis placentula	0.53	3.83
Diatoma moniliformis	0.19	1.39
Diatoma tenuis	0.01	0.09
Epithemia adnata	0.19	1.39
Epithemia sorex	2.42	17.6
Fragilaria vaucheriae	0.91	6.62
Gomphonema minutum	0.02	0.17
Gomphonema olivaceum	0.07	0.52
Navicula cryptotenella	0.18	1.31
Navicula cryptotenelloides	0.91	6.62
Navicula gregaria	0.01	0.09
Navicula minima	0.05	0.35
Navicula perpusilla	0.02	0.17
Navicula pseudanglica	0.01	0.09
Navicula tripunctata	0.02	0.17
Nitzschia acicularis	0.02	0.17
Nitzschia archibaldii	0.02	0.17
Nitzschia dissipata	0.37	2.70
Nitzschia frustulum	0.36	2.61
Nitzschia palea	0.10	0.70
Nitzschia valdestriata	0.08	0.61
Planothidium dubium	0.01	0.09
Reimeria sinuata	0.41	2.96
Rhoicosphenia abbreviata	0.11	0.78
Staurosirella pinnata	0.02	0.17
Synedra ulna	0.01	0.09
CHLOROPHYTA		
Ankistrodesmus sp.	0.17	1.24
CYANOPHYTA		
Amphithrix sp.	34.2	248
Anabaena sp.	1.71	12.4
Calothrix sp.	10.61	77.0
Chroococcus sp.	0.17	1.24
Oscillatoria sp.	32.0	232
Phormidium sp.	9.58	70
RHODOPHYTA		
Audouinella sp.	3.5	25.5
Total algae cells/mm^2		725

Depositional targeted habitat sample--fine sediment
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.37	3.38
Amphipleura pellucida	0.30	2.76
Amphora inariensis	0.40	3.68
Amphora libyca	0.13	1.23
Aneumastus tusculus	0.07	0.61
Asterionella formosa	0.07	0.61
Aulacoseira granulata	0.27	2.45
Biremis circumtexta	0.10	0.92
Caloneis silicula	0.03	0.31
Cocconeis pediculus	0.70	6.44
Cocconeis placentula	4.23	39.0
Cylindrotheca gracilis	0.27	2.45
Diatoma moniliformis	0.07	0.61
Epithemia adnata	0.07	0.61
Epithemia sorex	1.03	9.51
Fragilaria crotonensis	0.23	2.15
Fragilaria vaucheriae	0.73	6.75
Gomphonema minutum	0.13	1.23
Gomphonema olivaceum	0.03	0.31
Gomphonema parvulum	0.07	0.61
Gomphonema pumilum	0.07	0.61
Hantzschia amphioxys	0.07	0.61
Hippodonta hungarica	0.03	0.31
Karayevia clevei	0.17	1.53
Navicula antonii	0.07	0.61
Navicula canalis	0.73	6.75
Navicula cryptotenelloides	0.33	3.07
Navicula decussis	0.07	0.61
Navicula enigmatica	0.13	1.23
Navicula erifuga	0.30	2.76
Navicula germainii	0.37	3.38
Navicula gregaria	0.23	2.15
Navicula pseudanglica	0.23	2.15
Navicula recens	0.07	0.61
Navicula reichardtiana	0.17	1.53
Navicula rostellata	0.07	0.61
Nitzschia acicularis	0.63	5.83
Nitzschia agnita	1.57	14.4
Nitzschia angustatula	0.17	1.53
Nitzschia archibaldii	0.20	1.84
Nitzschia capitellata	0.07	0.61
Nitzschia desertorum	0.07	0.61
Nitzschia dissipata	0.43	3.99
Nitzschia filiformis	0.10	0.92
Nitzschia frustulum	0.67	6.14
Nitzschia gracilis	0.13	1.23
Nitzschia lorenziana	0.07	0.61
Nitzschia palea	3.07	28.2
Nitzschia paleacea	0.03	0.31
Nitzschia pusilla	0.10	0.92
Nitzschia recta	0.03	0.31
Nitzschia reversa	0.03	0.31
Nitzschia sociabilis	0.20	1.84
Nitzschia solita	0.10	0.92
Nitzschia sp.	0.27	2.45
Nitzschia supralitorea	0.20	1.84
Nitzschia valdestriata	0.10	0.92
Nitzschia vermicularis	0.13	1.23
Pinnularia sp.	0.17	1.53
Planothidium dubium	0.13	1.23
Planothidium lanceolatum	0.27	2.45
Reimeria sinuata	0.43	3.99
Rhoicosphenia abbreviata	0.23	2.15
Rhopalodia brebissonii	0.03	0.31
Sellaphora pupula	0.13	1.23
Simonsenia delognei	0.13	1.23
Staurosira construens	0.30	2.76
Staurosirella pinnata	0.07	0.61
Stephanodiscus medius	0.03	0.31
Surirella angusta	0.07	0.61
Surirella linearis	0.07	0.61
Tryblionella apiculata	0.20	1.84
Tryblionella levidensis	0.03	0.31

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

ALGAE SAMPLES--CONTINUED
SEPTEMBER 23, 2003

Depositional targeted habitat sample--fine sediment
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm^2
CYANOPHYTA		
Anabaena sp.	9.09	83.7
Chroococcus sp.	0.45	4.18
Oscillatoria sp.	52.3	481
Spirulina sp.	15.1	139
Total algae cells/mm^2		920

06308400 PUMPKIN CREEK NEAR MILES CITY, MT

LOCATION.--Lat 46°13'42", long 105°41'24" (NAD 27), in SW¼NE¼SW¼ sec.35, T.6 N., R.48 E., Custer County, Hydrologic Unit 10090102, on right bank 12 ft upstream from bridge on U.S.Highway 312, 7.5 mi upstream from mouth, and 16 mi southeast of Miles City.

DRAINAGE AREA.--697 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to November 1985, May 2004 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 2,475.86 ft (NGVD 29). Prior to May 2004, recording gage at same site at different datum.

REMARKS.--Water-discharge records fair. Diversion for irrigation of about 3,600 acres above station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								0.00	0.42	0.00	0.00	0.00
2								0.00	0.20	0.00	0.00	0.00
3								0.00	0.10	0.00	0.00	0.00
4								0.00	0.05	0.00	0.00	0.00
5								0.00	0.02	14	0.00	0.00
6								0.00	0.00	71	0.00	0.00
7								0.00	0.00	21	0.00	0.00
8								0.00	0.00	12	0.00	0.00
9								0.00	0.00	19	0.00	0.00
10								0.00	12	4.3	0.00	0.00
11								0.00	12	2.1	0.00	0.00
12								0.00	22	1.1	0.00	0.00
13								0.00	11	16	0.00	0.00
14								0.00	4.7	8.1	0.00	0.33
15								0.00	1.7	2.9	0.00	0.02
16								0.00	0.78	1.2	0.00	0.56
17								0.00	0.39	0.56	0.00	3.5
18								0.00	0.22	0.27	0.00	2.7
19								0.00	0.13	0.12	0.00	1.3
20								0.00	0.07	0.05	0.00	0.90
21								0.00	0.04	0.01	0.00	1.3
22								0.00	0.03	0.00	0.00	4.4
23								41	0.02	0.00	0.00	1.8
24								88	0.00	0.00	0.00	0.68
25								18	0.00	0.00	0.00	0.29
26								5.5	0.00	0.00	0.00	0.17
27								3.1	0.00	0.00	0.00	0.08
28								1.9	0.00	0.00	0.00	0.12
29								1.3	0.00	0.00	0.00	0.13
30								0.97	0.00	0.00	0.00	0.09
31								0.67	---	0.00	0.00	---
TOTAL								160.44	65.87	173.71	0.00	18.37
MEAN								5.18	2.20	5.60	0.00	0.61
MAX								88	22	71	0.00	4.4
MIN								0.00	0.00	0.00	0.00	0.00
AC-FT								318	131	345	0.00	36

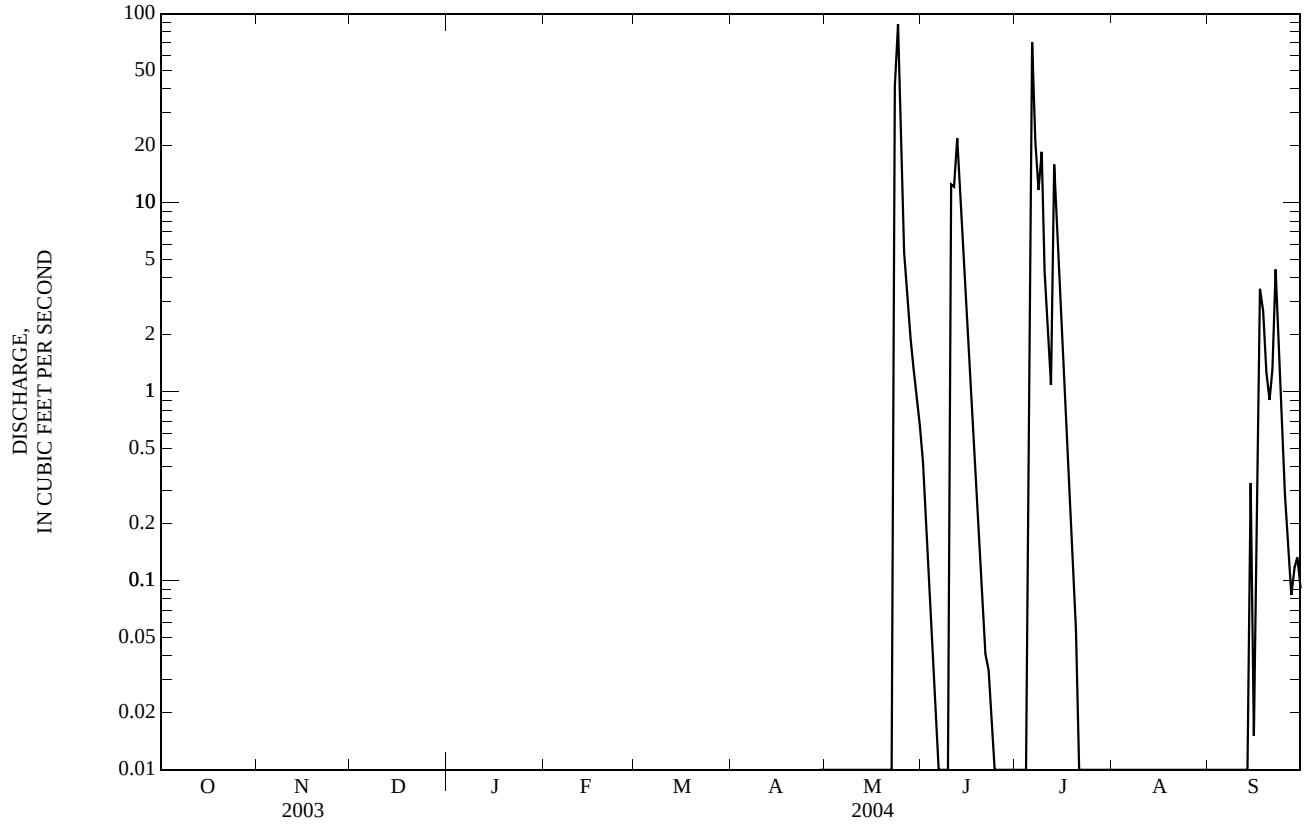
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY)*

MEAN	1.35	0.33	0.17	4.66	30.0	53.7	16.6	33.9	15.5	3.93	1.90	6.21
MAX	9.72	2.65	0.74	29.4	134	299	84.0	205	64.2	18.1	16.2	59.8
(WY)	(1983)	(1975)	(1973)	(1983)	(1983)	(1978)	(1979)	(1978)	(1975)	(1978)	(1985)	(1973)
MIN	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1977)	(1977)	(1975)	(1977)	(1978)	(1981)	(1981)	(1980)	(1977)	(1977)	(1974)	(1974)

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004*	
ANNUAL MEAN			14.3	
HIGHEST ANNUAL MEAN			49.5	1978
LOWEST ANNUAL MEAN			0.22	1980
HIGHEST DAILY MEAN	88	May 24	1,980	May 19, 1978
LOWEST DAILY MEAN	0.00	May 1	a0.00	Dec 10, 1972
ANNUAL SEVEN-DAY MINIMUM			0.00	Dec 10, 1972
MAXIMUM PEAK FLOW	333	May 23	2,890	May 6, 1975
MAXIMUM PEAK STAGE	5.41	May 23	b12.27	May 6, 1975
ANNUAL RUNOFF (AC-FT)			10,330	
10 PERCENT EXCEEDS			17	
50 PERCENT EXCEEDS			0.06	
90 PERCENT EXCEEDS			0.00	

*--During period of operation (1972-85, May 2004 to September 2004).
a--No flow at times most years.
b--Datum then in use.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to 1985, March 2004 to September 2004.

PERIOD OF DAILY RECORD.-
SPECIFIC CONDUCTANCE: May 2004 to September 2004.

INSTRUMENTATION.--A specific conductance probe was installed on May 20, 2004.

REMARKS.--No water-quality samples could be collected during eight site visits between February and August due to no flow. The specific conductance record is rated fair to poor for the period of operation. Missing daily specific conductance values for the periods May 21-24, June 5-13, June 23 to July 5, July 21 to Sept. 14, 16-18 and 25-30 are due to no flow or equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,350 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 24, 2004; minimum daily, 444 µS/cm at 25.0°C, May 25, 2004.

EXTREMES FOR CURRENT YEAR.
SPECIFIC CONDUCTANCE: Maximum daily, 1350 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 24; minimum daily, 444 µS/cm at 25.0°C, May 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
MAR													
10...	1700	6.2	703	--	--	8.1	647	7.0	4.5	60	14.9	5.49	4.97
MAY													
24...	1530	121	687	10.3	94	8.7	311	7.5	7.0	14	3.87	1.12	2.79
JUN													
16...	1300	.72	--	--	--	8.2	700	18.0	17.5	44	12.0	3.34	7.53
JUL													
06...	1200	90	698	8.9	100	8.2	797	31.0	16.5	57	15.3	4.56	6.16
13...	1430	16	686	5.3	73	8.1	706	31.5	25.5	47	12.9	3.55	6.63
SEP													
28...	1134	.12	699	10.4	108	8.8	1,730	20.0	13.0	140	33.3	13.8	8.98

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR													
10...	7	130	81	146	1.91	.3	6.25	153	408	.56	6.83	.012	.732
MAY													
24...	7	56.9	87	64	1.22	.3	3.41	64.3	178	.24	58.3	<.010	1.27
JUN													
16...	9	137	85	175	2.75	.6	11.6	146	430	.59	.84	.146	.866
JUL													
06...	10	179	86	191	3.40	.7	7.31	236	569	.77	137	.022	.398
13...	8	131	84	184	2.76	.6	12.5	144	426	.58	18.4	.091	.213
SEP													
28...	12	323	82	300	5.56	.7	6.69	574	1,150	1.56	.37	E.007	.308

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)	Beryllium, water, fltrd, ug/L (01010)	Beryllium, water, unfltrd recoverable, ug/L (01012)	Boron, water, fltrd, ug/L (01020)
MAR													
10...	.018	4.87	E.005	1.14	4	26,700	.9	9	28	415	<.06	2.98	102
MAY													
24...	.015	2.04	.009	5.29	6	42,900	1.0	10	10	1,800	<.06	9.38	67
JUN													
16...	.038	6.54	.036	3.01	6	45,200	2.0	13	34	1,080	<.06	7.71	166
JUL													
06...	.024	5.91	.013	1.52	7	40,700	1.7	13	38	1,240	<.06	8.17	203
13...	.026	6.86	.017	1.43	6	58,100	1.8	14	32	1,330	<.06	9.06	187
SEP													
28...	.021	1.52	<.006	.157	5	1,280	1.7	E1	93	111	<.06	.09	313

Date	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)
MAR													
10...	<.04	.67	35	7.1	58.5	23	33,500	.08	53.8	9.0	9.3	474	.16
MAY													
24...	E.03	2.47	69	4.6	136	25	60,400	.11	139	4.0	3.4	2,180	.48
JUN													
16...	E.02	1.72	76	14.3	119	29	58,000	.23	131	10.7	.4	1,150	.40
JUL													
06...	E.02	2.04	64	10.2	146	20	56,900	.11	155	12.5	1.4	1,550	.46
13...	<.04	2.25	102	11.0	157	21	85,100	.08	180	11.3	.3	1,870	.50
SEP													
28...	E.03	.04	1	16.8	15.3	16	960	.16	2.79	20.9	1.3	41	--

E--Estimated.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
MAR										
10...	5.47	57.9	1.6	1.9	252	.8	188	99	3,030	51
MAY										
24...	3.83	146	1.3	2.5	63.6	1.0	399	99	10,500	3,410
JUN										
16...	10.8	133	2.9	2.7	231	2.2	393	99	8,310	16
JUL										
06...	10.1	147	2.4	3.1	320	1.8	400	99	9,580	2,310
13...	9.10	173	1.9	3.6	257	3.1	513	99	10,100	435
SEP										
28...	9.28	11.9	2.7	2.7	706	2.4	8	99	57	.02

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1				813	769	789	---	---	---	---	---	---
2				826	812	820	---	---	---	---	---	---
3				860	823	853	---	---	---	---	---	---
4				888	858	877	---	---	---	---	---	---
5				---	---	---	---	---	---	---	---	---
6				---	---	---	822	532	621	---	---	---
7				---	---	---	837	522	623	---	---	---
8				---	---	---	536	503	520	---	---	---
9				---	---	---	647	504	588	---	---	---
10				---	---	---	731	647	696	---	---	---
11				---	---	---	739	722	728	---	---	---
12				---	---	---	728	715	722	---	---	---
13				---	---	---	730	696	714	---	---	---
14				699	634	652	799	720	766	---	---	---
15				745	674	724	749	725	742	---	---	---
16				729	700	714	790	718	749	---	---	---
17				733	706	719	869	790	833	---	---	---
18				760	720	743	921	867	889	---	---	---
19				782	760	772	945	920	933	---	---	---
20				822	782	800	979	943	960	---	---	---
21				853	821	838	---	---	---	---	---	---
22				870	853	862	---	---	---	---	---	---
23				---	---	---	---	---	---	---	---	---
24	---	---	*311	---	---	---	---	---	---	---	---	---
25	851	444	803	---	---	---	---	---	---	---	---	---
26	832	517	685	---	---	---	---	---	---	---	---	---
27	603	581	590	---	---	---	---	---	---	---	---	---
28	644	603	622	---	---	---	---	---	---	---	---	---
29	682	644	661	---	---	---	---	---	---	---	---	---
30	723	682	700	---	---	---	---	---	---	---	---	---
31	769	708	745	---	---	---	---	---	---	---	---	---
MONTH	851	444	640	931	173	750	979	503	739	---	---	---

*--Instantaneous value from USGS sample.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
	SEPTEMBER		
1	---	---	---
2	---	---	---
3	---	---	---
4	---	---	---
5	---	---	---
6	---	---	---
7	---	---	---
8	---	---	---
9	---	---	---
10	---	---	---
11	---	---	---
12	---	---	---
13	---	---	---
14	---	---	---
15	---	---	---
16	---	---	---
17	---	---	---
18	---	---	---
19	1,300	1,160	1,230
20	1,160	1,070	1,110
21	1,070	1,020	1,040
22	1,020	1,000	1,010
23	1,130	1,020	1,070
24	1,350	1,130	1,220
25	---	---	---
26	---	---	---
27	---	---	---
28	---	---	*1,730
29	---	---	---
30	---	---	---
31	---	---	---
MONTH	1,350	1,000	1,200

*--Instantaneous value from USGS sample.

06308500 TONGUE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°23'05", long 105°50'41" (NAD 27), in SE¼SE¼SE¼ sec. 4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi^2. Area at site used prior to Oct. 4, 1995, 5,379 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. April 1946 to Oct. 4, 1995, at site 2.5 mi upstream from present site. Flows at present site are equivalent with flows at site operated from 1946. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft (NGVD 29). April 1938 to April 1942, nonrecording gage at site 8 mi upstream from present site at different elevation. April 1946 to Sept. 30, 1963, at elevation 1.00 ft higher than present site. Oct. 4, 1995, gage was moved 2.5 miles downstream.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (station 0630700) with capacity of 79,100 acre-feet, and many small reservoirs in Wyoming with combined capacity about 15,000 acre-ft. Diversions for irrigation of about 100,800 acres upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	e70	e110	e90	e70	e100	221	11	112	53	50	17
2	63	e70	e120	e80	e70	e90	200	11	97	32	49	16
3	53	e60	e120	e70	e70	e90	188	8.5	91	21	55	18
4	48	e50	e120	e60	e70	e100	208	8.7	65	24	36	18
5	44	e40	e120	e50	e70	e100	226	8.9	39	34	33	18
6	39	e50	e120	e60	e70	e110	227	8.3	23	213	27	17
7	37	e60	e120	e70	e70	e150	221	8.3	19	120	25	15
8	39	e60	e120	e80	e80	e200	208	7.6	16	76	49	16
9	43	e70	e110	e90	e70	e250	180	9.1	16	49	54	15
10	43	e80	e100	e100	e70	e500	162	10	15	36	39	14
11	48	e80	e110	e100	e70	e300	162	12	122	23	29	14
12	51	e80	e110	e100	e70	e250	153	10	246	19	27	15
13	46	e80	e110	e100	e70	225	152	9.7	120	18	27	19
14	43	e80	e100	e90	e65	176	134	8.4	106	24	26	40
15	47	e80	e90	e90	e60	168	117	8.0	108	26	23	54
16	54	e80	e90	e90	e70	166	113	9.5	88	22	20	49
17	69	e80	e100	e100	e80	161	109	13	90	16	26	49
18	71	e90	e100	e100	e90	166	113	14	83	13	29	48
19	71	e90	e100	e100	e90	170	119	20	92	13	29	51
20	71	e70	e100	e100	e100	151	120	40	103	14	23	56
21	74	e50	e100	e100	e100	138	130	47	103	16	21	57
22	72	e30	e100	e100	e90	143	135	50	97	19	21	72
23	69	e35	e100	e110	e90	176	125	71	99	20	21	80
24	60	e40	e90	e100	e90	207	109	298	98	16	23	79
25	51	e50	e100	e90	e100	210	89	232	53	13	27	79
26	69	e60	e100	e70	e100	213	64	165	33	14	26	74
27	80	e70	e110	e60	e100	207	18	140	21	35	24	74
28	e90	e80	e110	e60	e100	199	10	109	18	50	22	75
29	e100	e90	e100	e60	e100	193	9.4	92	21	49	21	77
30	e80	e100	e100	e60	---	197	11	90	34	50	19	75
31	e70	---	e100	e70	---	216	---	97	---	52	18	---
TOTAL	1,853	2,025	3,280	2,600	2,345	5,722	4,033.4	1,627.0	2,228	1,180	919	1,301
MEAN	59.8	67.5	106	83.9	80.9	185	134	52.5	74.3	38.1	29.6	43.4
MAX	100	100	120	110	100	500	227	298	246	213	55	80
MIN	37	30	90	50	60	90	9.4	7.6	15	13	18	14
AC-FT	3,680	4,020	6,510	5,160	4,650	11,350	8,000	3,230	4,420	2,340	1,820	2,580

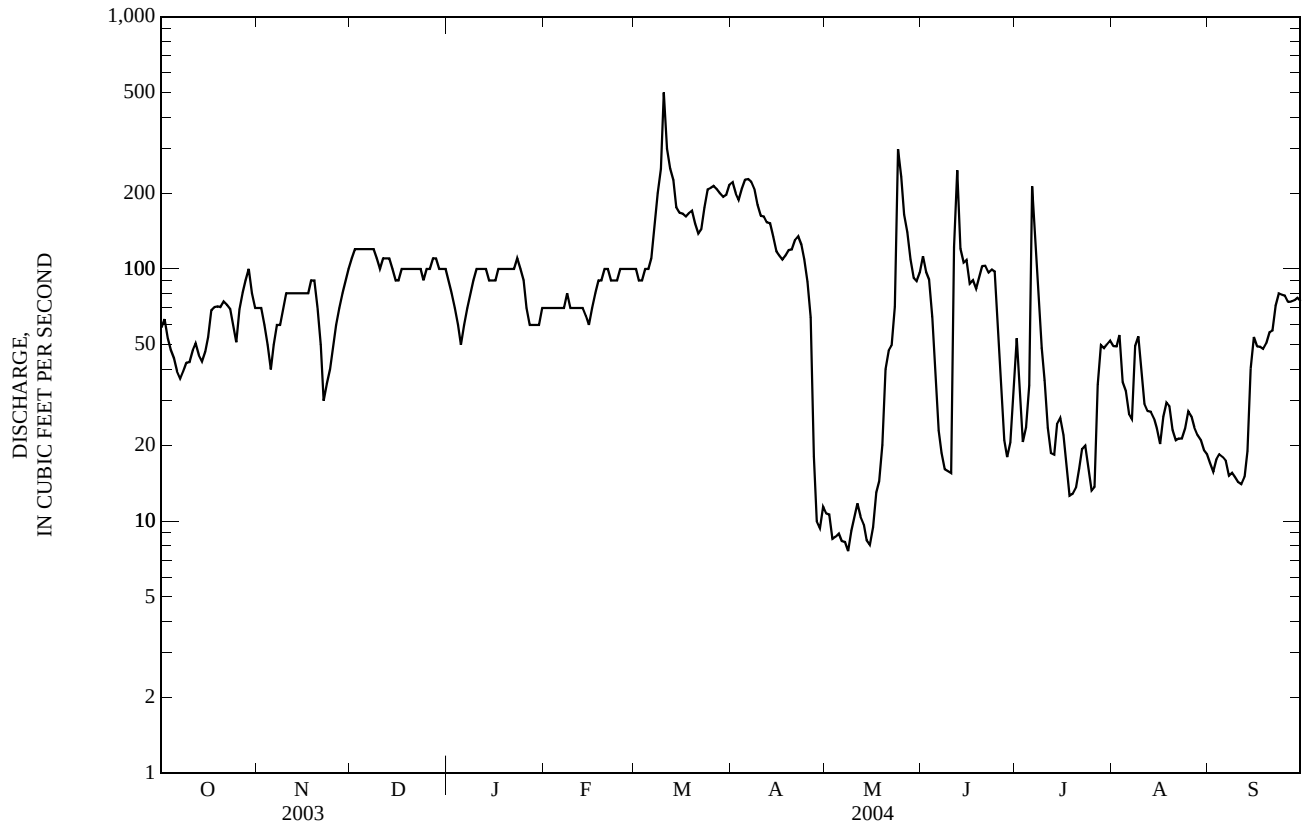
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)*

MEAN	241	251	189	193	275	528	432	677	1,244	457	178	196
MAX	694	585	423	529	1,794	1,783	1,693	2,983	3,825	2,207	700	599
(WY)	(1972)	(1942)	(1950)	(1999)	(1971)	(1971)	(1965)	(1978)	(1978)	(1975)	(1975)	(1968)
MIN	10.3	60.9	68.0	76.9	74.5	74.5	12.5	29.2	41.9	12.6	6.08	2.40
(WY)	(1961)	(1989)	(1990)	(2002)	(2003)	(2002)	(1961)	(1961)	(2002)	(1960)	(1949)	(1938)

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004*	
ANNUAL TOTAL	95,263		29,113.4			
ANNUAL MEAN	261		79.5		402	
HIGHEST ANNUAL MEAN					986	1978
LOWEST ANNUAL MEAN					57.2	1961
HIGHEST DAILY MEAN	4,000	Mar 15	500	Mar 10	9,290	Jun 15, 1962
LOWEST DAILY MEAN	30	Nov 22	7.6	May 8	0.00	Jul 9, 1940
ANNUAL SEVEN-DAY MINIMUM	42	Oct 4	8.5	May 3	0.00	Jul 9, 1940
MAXIMUM PEAK FLOW			unknown		b13,300	Jun 15, 1962
MAXIMUM PEAK STAGE			a5.07	Mar 10	c13.27	Mar 19, 1960
INSTANTANEOUS LOW FLOW					0.00	Jul 9, 1940
ANNUAL RUNOFF (AC-FT)	189,000		57,750		291,000	
10 PERCENT EXCEEDS	711		161		900	
50 PERCENT EXCEEDS	110		70		220	
90 PERCENT EXCEEDS	69		16		65	

*--During period of record (April 1938 to April 1942, April 1946 to current year.
a--About, backwater from ice.
b--At previous site and elevation.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946 to September 1994, October 1977 to December 1985, May 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1981, April 29, 2004 to September 30, 2004.
WATER TEMPERATURE: Sesonal records, April 2000 to September 2003.
SUSPENDED-SEDIMENT DISCHARGE: October 1977 to December 1985.

INSTRUMENTATION.--A specific conductance probe was installed on April 28, 2004.

REMARKS--Missing daily specific conductance values for June 9 to 16 due to equipment error. The Sept. 16 water-quality sample was lost in transit to the lab.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,520 microsiemens per centimeter (µS/cm) at 25.0°C, May 24, 1981; minimum daily, 215 µS/cm at 25.0°C, Feb. 16, 1971.
WATER TEMPERATURE (seasonal records): Maximum, 37.0°C, Aug. 22, 2001; minimum 0.0°C, Apr. 5, 2002.
SEDIMENT CONCENTRATION: Maximum daily mean, 14,200 mg/L, Aug. 3, 1985; minimum daily mean, 3 mg/L, Dec. 20, 1983.
SEDIMENT LOAD: Maximum daily, 84,400 tons May 18, 1978; minimum daily, 0.13 tons May 5, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 µS/cm at 25.0°C, May 16; minimum daily, 508 µS/cm at 25.0°C, May 24.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
JAN										
23...	0745	E110	695	10.3	78	8.5	863	3.0	.0	360
FEB										
04...	1300	E70	697	10.3	77	8.4	1,030	-14.0	.0	400
18...	1245	E90	696	9.7	73	8.3	920	6.5	.0	370
MAR										
11...	0930	E300	708	14.4	106	7.9	683	2.5	.0	250
23...	1300	179	692	11.8	116	8.0	938	21.0	10.0	360
APR										
14...	1530	133	691	10.1	111	8.6	850	22.5	15.0	320
28...	1000	10	689	9.4	100	8.4	1,060	9.5	13.5	390
MAY										
13...	1030	10	706	12.0	107	8.4	1,280	9.0	7.0	380
25...	1230	218	689	10.0	102	8.3	585	16.0	11.5	170
JUN										
09...	0930	16	700	9.0	98	8.7	951	18.0	15.0	400
23...	0745	101	627	7.0	91	8.5	807	14.0	18.0	290
JUL										
14...	1000	20	690	8.3	109	8.2	1,120	31.5	23.5	320
26...	1100	15	698	7.1	92	8.3	1,290	32.5	23.0	370
AUG										
18...	1415	29	703	7.6	97	8.1	1,180	29.0	23.0	350
23...	1055	21	690	8.2	98	8.4	1,150	27.5	19.0	360
SEP										
16...	0830	49	696	8.6	91	8.2	962	14.0	13.5	--
28...	1330	74	700	10.3	112	8.5	922	22.5	15.5	310

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
JAN											
23...	69.8	44.7	4.41	1	64.1	28	215	5.59	.4	6.19	201
FEB											
04...	79.6	49.3	4.98	2	77.9	29	245	6.55	.4	7.39	241
18...	72.5	45.8	4.52	2	68.2	28	229	5.78	.3	5.58	207
MAR											
11...	49.2	31.0	3.63	2	56.9	33	200	4.32	.3	3.86	162
23...	65.6	47.0	5.04	2	81.9	33	238	6.02	.4	2.48	239
APR											
14...	59.1	42.4	4.61	2	68.2	31	220	5.93	.3	3.27	206
28...	73.5	51.0	6.40	2	106	36	277	6.91	.3	6.20	273
MAY											
13...	67.7	52.0	7.66	4	160	47	326	7.93	.4	8.82	340
25...	36.0	18.4	4.94	2	61.8	44	160	3.51	.3	4.09	133
JUN											
09...	72.9	53.2	7.65	3	127	40	323	7.21	.4	10.6	303
23...	52.1	39.2	4.54	2	66.3	33	236	5.61	.3	3.70	195
JUL											
14...	62.9	39.5	7.31	3	127	46	314	6.49	.4	9.80	277
26...	65.9	50.7	8.37	3	142	45	337	7.75	.4	8.42	344
AUG											
18...	59.3	48.7	7.38	3	124	43	291	6.47	.4	8.99	296
23...	61.7	50.8	7.43	3	129	43	322	6.62	.4	9.15	303
SEP											
16...	--	--	--	--	--	--	--	--	--	--	--
28...	51.0	43.8	5.37	2	80.3	36	251	5.58	.4	5.92	241

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN						
23...	525	.71	E156	78	30	E8.9
FEB						
04...	615	.84	E116	76	24	E4.5
18...	547	.74	E133	88	14	E3.4
MAR						
11...	432	.59	E350	99	175	E142
23...	590	.80	285	87	65	31
APR						
14...	522	.71	188	90	47	17
28...	691	.94	18.7	87	32	.86
MAY						
13...	842	1.14	22.7	92	37	1.0
25...	361	.49	212	99	4,560	2,680
JUN						
09...	777	1.06	33.6	78	103	4.4
23...	509	.69	139	99	88	24
JUL						
14...	718	.98	38.8	96	94	5.1
26...	831	1.13	33.7	98	87	3.5
AUG						
18...	725	.99	56.8	91	27	2.1
23...	763	1.04	43.3	92	29	1.6
SEP						
16...	--	--	--	99	241	32
28...	584	.79	117	99	197	39

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
FEB													
04...	1300	.010	.029	<.002	.21	<.006	.006	<2	37	.5	<2	70	71
MAR													
11...	0930	E.007	.041	E.001	.49	<.006	.11	E2	3,150	.4	2	44	75
APR													
14...	1530	<.010	<.016	<.002	.28	<.006	.021	2	210	.6	E1	60	68
28...	1000	<.010	<.016	E.001	.28	<.006	.019	2	129	.7	<2	76	74
MAY													
13...	1030	<.010	.020	.002	.38	<.006	.020	<2	35	.7	<2	70	64
25...	1230	.031	.520	.011	.91	.007	2.56	3	26,400	.7	8	62	819
JUN													
09...	0930	<.010	.016	.002	.30	E.003	.040	<2	212	.8	E1	81	81
23...	0745	<.010	<.016	<.002	.37	<.006	.053	2	699	.6	<2	63	74
JUL													
26...	1100	<.010	E.012	E.001	.40	<.006	.028	2	280	.9	<2	86	89
AUG													
23...	1055	E.007	.132	.004	.52	<.006	.025	E1	228	1.0	E1	63	65

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
04...	<.06	<.06	114	.06	<.04	3	2.3	4.6	10	90	E.05	.06	26.4
MAR													
11...	<.06	.22	74	<.04	.06	2	1.7	5.9	<6	2,770	<.08	3.33	17.2
APR													
14...	<.06	E.03	107	<.04	<.04	<1	2.0	2.2	<6	370	<.08	.37	23.9
28...	<.06	<.06	163	<.04	<.04	<1	3.0	2.6	E5	210	<.08	.25	28.4
MAY													
13...	<.06	<.06	225	<.04	<.04	6	3.1	3.1	8	100	<.08	.07	32.0
25...	<.06	4.56	89	<.04	1.21	51	3.2	79.3	6	46,900	.10	79.8	15.5
JUN													
09...	<.06	<.06	199	<.04	<.04	<1	2.7	4.2	<6	340	<.08	.40	33.5
23...	<.06	E.06	108	<.04	E.03	1	2.8	3.8	<6	1,080	<.08	1.26	20.7
JUL													
26...	<.06	<.06	241	<.04	E.02	<1	3.7	6.1	<6	330	<.08	.45	39.3
AUG													
23...	<.06	<.06	220	<.04	E.02	<1	2.7	3.8	E4	310	<.08	.45	33.1

Date	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)
FEB										
04...	10.3	13	<.02	2.35	3.66	.5	.4	738	2.6	3
MAR										
11...	4.3	93	E.02	2.58	6.00	E.3	.5	481	.7	14
APR										
14...	5.2	70	<.02	1.81	2.74	.4	.5	665	1.2	3
28...	46.7	98	<.02	2.67	2.13	.5	E.3	821	2.1	2
MAY										
13...	49.1	106	<.02	1.72	3.41	.5	.6	901	2.0	E1
25...	4.5	1,180	--	3.52	85.0	.9	1.3	523	.9	247
JUN										
09...	25.6	88	<.02	2.46	4.18	.8	.5	951	1.4	3
23...	5.2	66	<.02	2.22	3.40	E.4	.5	603	1.7	7
JUL										
26...	13.4	35	<.02	4.02	4.70	.8	.9	1,010	1.5	5
AUG										
23...	34.2	58	<.02	2.59	4.09	.7	1.0	930	1.2	3

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1				1,080	1,060	1,070	877	867	871	911	887	897
2				1,110	1,070	1,080	883	866	873	1,080	888	944
3				1,120	1,100	1,110	886	868	878	1,140	1,080	1,120
4				1,140	1,120	1,130	910	886	893	1,130	1,110	1,120
5				1,140	1,100	1,120	972	910	936	1,110	1,020	1,080
6				1,150	1,100	1,120	1,060	972	1,010	1,020	651	778
7				1,140	1,110	1,130	1,130	1,060	1,100	768	601	674
8				1,190	1,120	1,160	1,170	1,130	1,150	829	768	807
9				1,210	1,160	1,190	---	---	---	891	815	857
10				1,200	1,180	1,190	---	---	---	922	890	905
11				1,200	1,170	1,190	---	---	---	946	910	924
12				1,200	1,180	1,190	---	---	---	1,070	946	994
13				1,310	1,180	1,250	---	---	---	1,140	1,040	1,090
14				1,320	1,270	1,300	---	---	---	1,170	1,110	1,140
15				1,340	1,320	1,330	---	---	---	1,140	1,120	1,130
16				1,360	1,330	1,350	---	---	---	1,140	1,080	1,100
17				1,330	1,300	1,320	869	845	852	1,170	1,120	1,150
18				1,330	1,300	1,310	853	842	846	1,230	1,160	1,210
19				1,300	1,270	1,290	854	840	846	1,290	1,230	1,260
20				1,270	1,030	1,170	840	824	831	1,280	1,250	1,260
21				1,030	901	953	836	819	824	1,290	1,240	1,270
22				905	888	898	826	820	823	1,280	1,230	1,260
23				888	824	860	827	811	818	1,270	1,180	1,220
24				883	508	699	825	809	814	1,180	1,130	1,160
25				743	589	651	918	817	854	1,220	1,170	1,200
26				805	687	770	974	918	947	1,320	1,210	1,280
27				816	799	806	1,040	973	1,000	1,320	1,210	1,290
28				837	813	822	1,110	1,040	1,080	1,210	905	982
29	1,040	998	1,030	857	837	850	1,140	1,100	1,120	912	895	904
30	1,060	1,040	1,060	866	854	859	1,130	911	1,090	914	887	905
31	---	---	---	872	865	869	---	---	---	902	864	882
MONTH	1,060	998	1,040	1,360	508	1,070	1,170	809	930	1,320	601	1,060
		AUGUST			SEPTEMBER							
1	900	874	891	1,290	1,220	1,270						
2	911	894	904	1,270	1,260	1,270						
3	912	895	902	1,270	1,250	1,260						
4	957	905	930	1,260	1,230	1,250						
5	1,020	957	994	1,270	1,230	1,250						
6	1,060	1,020	1,040	1,250	1,210	1,240						
7	1,080	1,040	1,060	1,260	1,230	1,250						
8	1,110	972	1,090	1,290	1,250	1,270						
9	972	863	884	1,310	1,260	1,280						
10	940	888	916	1,330	1,300	1,320						
11	1,000	940	969	1,340	1,300	1,320						
12	1,040	1,000	1,020	1,340	1,300	1,320						
13	1,060	1,040	1,050	1,320	1,260	1,290						
14	1,070	1,050	1,060	1,290	1,160	1,240						
15	1,090	1,060	1,080	1,180	968	1,020						
16	1,120	1,080	1,110	990	970	978						
17	1,140	1,080	1,110	988	964	977						
18	1,160	1,100	1,120	999	988	992						
19	1,130	1,100	1,120	989	967	980						
20	1,140	1,100	1,120	1,040	970	1,010						
21	1,160	1,140	1,160	1,010	987	996						
22	1,190	1,160	1,180	987	912	951						
23	1,200	1,170	1,190	931	908	916						
24	1,180	1,140	1,160	939	920	931						
25	1,180	1,140	1,160	943	933	938						
26	1,170	1,110	1,150	943	936	939						
27	1,120	1,100	1,110	944	940	942						
28	1,200	1,120	1,170	948	941	945						
29	1,200	1,120	1,160	946	937	942						
30	1,200	1,150	1,180	951	942	946						
31	1,250	1,170	1,210	---	---	---						
MONTH	1,250	863	1,070	1,340	908	1,110						

06309000 YELLOWSTONE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°25'18", long 105°51'38" (NAD 27), in NE¼SW¼NW¼ sec.28, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, on left bank at upstream side of bridge on State Highway 22 at Miles City, 0.8 mi downstream from Tongue River, and at river mile 184.2.
DRAINAGE AREA.--48,253 mi^2.
PERIOD OF RECORD.--September 1922 to September 1923, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,333.3 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to May 6, 1929, nonrecording gages .2 mi downstream at different elevations. May 6, 1929, to Sept. 30, 1931, nonrecording gage, and Oct. 1, 1931, to Nov. 10, 1937, water-stage recorder 300 ft upstream from present site at same elevation. Nov. 11, 1937, to Sept. 30, 1946, water-stage recorder 1.2 mi downstream at different elevation. Oct. 1, 1946, to Mar. 15, 1979, water-stage recorder at site 300 ft upstream at present elevation. Mar. 16, 1979, to Sept. 21, 1979, nonrecording gage at present site and elevation. Sept. 22, 1979, recording gage established at same site and elevation.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation by reservoirs on tributary streams. Diversions for irrigation of about 1,100,000 acres upstream from station (does not include flood irrigation). Several observations of water temperature and specific conductance were obtained during the year. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,190	4,600	e4,200	e2,600	e3,800	e4,600	5,390	3,970	11,300	15,400	5,990	4,650
2	3,300	4,600	e4,500	e2,500	e3,800	e4,700	5,010	5,170	10,600	15,600	5,850	4,120
3	3,380	4,410	e4,500	e2,300	e3,800	e4,700	5,010	4,640	9,590	16,400	5,620	3,750
4	3,390	4,160	e4,500	e2,100	e4,200	e4,800	5,420	3,940	8,730	15,300	5,340	3,890
5	3,360	4,150	e4,500	e2,000	e4,200	e4,800	5,920	3,680	8,560	14,900	5,160	4,180
6	3,340	4,040	e4,500	e1,900	e4,200	e4,900	6,200	3,700	9,330	14,700	5,350	4,480
7	3,480	3,930	e4,400	e1,900	e4,200	e5,000	5,930	5,620	12,200	16,400	5,530	4,620
8	3,520	4,140	e4,400	e1,900	e4,300	e5,200	5,930	8,590	16,900	15,900	5,220	4,580
9	3,500	3,790	e4,400	e2,100	e4,300	e5,400	6,220	10,800	20,400	14,500	4,830	4,430
10	3,320	4,120	e4,600	e2,300	e4,300	e5,200	6,450	11,100	20,600	14,100	4,580	4,350
11	3,330	4,420	e4,700	e3,400	e4,300	5,480	6,640	11,000	21,300	13,500	4,390	4,280
12	3,480	4,360	e4,700	e4,600	e4,300	5,660	7,050	10,300	28,900	12,300	4,040	4,170
13	3,560	4,550	e4,700	e4,700	e4,200	5,690	7,020	9,450	30,300	11,400	3,740	4,040
14	3,710	4,560	4,270	e4,700	e3,900	5,180	6,390	9,500	25,800	10,900	3,570	4,040
15	3,690	4,400	e4,500	e4,800	e3,700	5,070	6,210	8,680	22,100	10,100	3,360	4,320
16	3,820	4,430	e4,600	e4,800	e3,800	5,010	6,030	7,480	18,900	9,430	3,170	4,480
17	4,120	4,480	e4,700	e4,800	e4,000	4,850	6,240	6,760	17,100	9,030	3,070	4,560
18	4,130	4,630	e4,800	e4,800	e4,200	4,940	6,550	6,230	16,300	8,930	2,940	5,070
19	4,000	4,920	e4,800	e4,800	e4,400	5,080	6,450	5,980	15,600	8,570	2,780	5,180
20	3,980	4,890	4,720	e4,800	e4,500	4,810	5,990	5,990	14,700	8,210	2,710	5,020
21	4,310	4,810	4,890	e4,800	e4,500	4,760	5,670	5,950	14,100	7,730	2,850	5,310
22	4,670	4,950	4,900	e4,900	e4,500	4,830	5,570	6,330	13,600	7,950	3,060	5,600
23	4,410	4,920	4,950	e4,900	e4,500	5,020	5,470	7,000	13,400	8,190	3,110	5,700
24	4,130	4,410	5,110	e4,900	e4,500	5,340	4,960	8,140	13,100	7,860	3,050	6,090
25	3,850	4,060	4,670	e4,900	e4,500	5,220	4,500	9,160	13,200	7,880	2,970	6,100
26	4,240	4,140	4,800	e4,900	e4,500	5,150	4,250	10,100	14,500	7,860	2,900	5,910
27	4,340	3,960	4,780	e4,800	e4,500	5,270	4,240	9,630	16,100	7,270	2,910	5,640
28	4,350	e3,900	4,030	e4,800	e4,500	5,380	3,980	8,790	17,200	6,710	3,410	5,780
29	4,670	e4,100	e4,000	e4,600	e4,500	5,470	3,640	8,160	17,300	6,330	3,950	5,910
30	4,440	e4,200	e3,500	e4,400	---	5,520	3,600	7,910	16,400	6,340	5,150	5,660
31	4,550	---	e3,000	e4,000	---	5,630	---	9,240	---	6,130	4,950	---
TOTAL	119,560	131,030	139,620	119,700	122,900	158,660	167,930	232,990	488,110	335,820	125,550	145,910
MEAN	3,857	4,368	4,504	3,861	4,238	5,118	5,598	7,516	16,270	10,830	4,050	4,864
MAX	4,670	4,950	5,110	4,900	4,500	5,690	7,050	11,100	30,300	16,400	5,990	6,100
MIN	3,190	3,790	3,000	1,900	3,700	4,600	3,600	3,680	8,560	6,130	2,710	3,750
AC-FT	237,100	259,900	276,900	237,400	243,800	314,700	333,100	462,100	968,200	666,100	249,000	289,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2004, BY WATER YEAR (WY)*

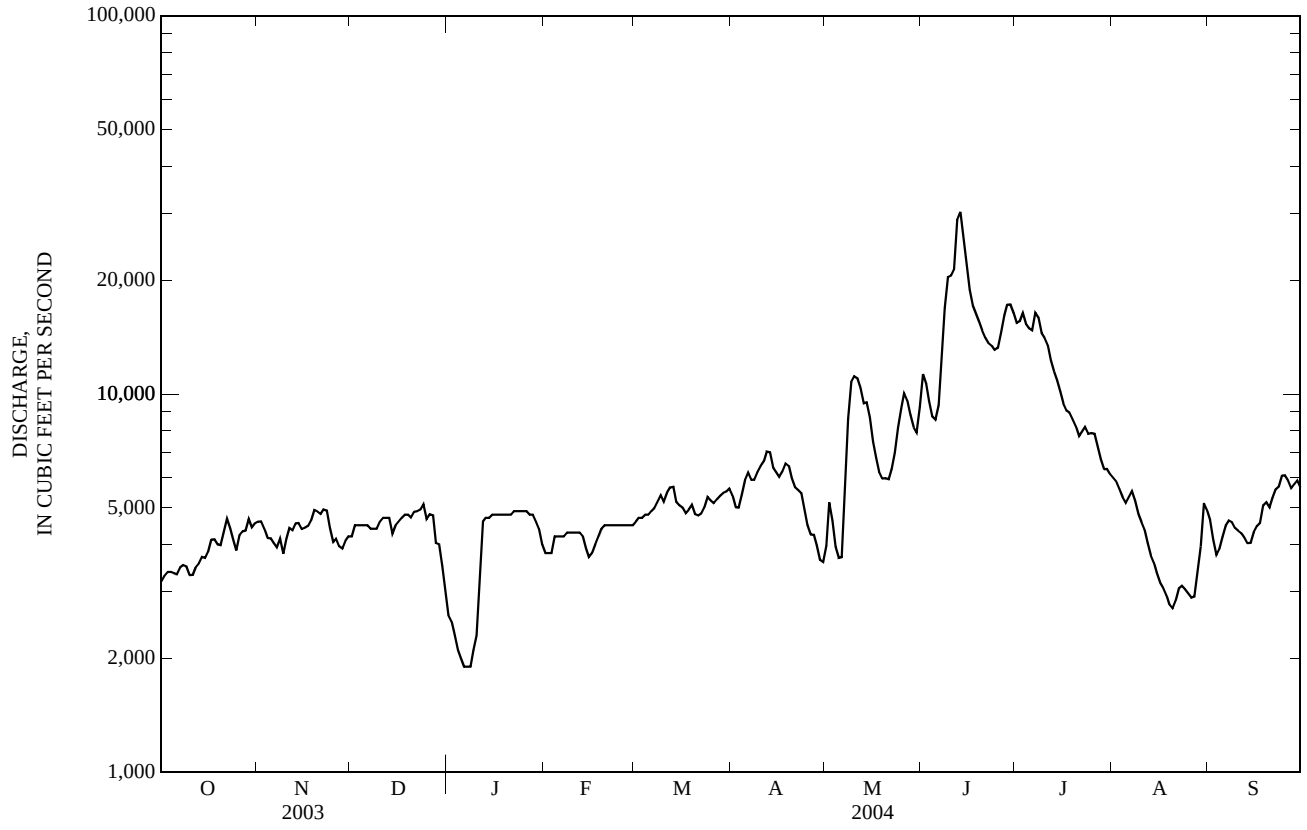
MEAN	7,654	7,062	5,711	5,272	6,167	8,228	8,193	17,130	34,460	19,980	8,067	7,133
MAX	12,970	10,850	9,342	8,897	16,160	18,560	15,210	29,100	61,860	46,310	16,540	13,710
(WY)	(1972)	(1973)	(1983)	(1968)	(1971)	(1929)	(1943)	(1978)	(1997)	(1967)	(1997)	(1941)
MIN	3,857	3,976	2,921	2,034	2,344	3,027	2,729	7,334	13,030	3,988	2,615	2,964
(WY)	(2004)	(1932)	(1933)	(1937)	(1932)	(2002)	(1961)	(1961)	(1934)	(1934)	(1961)	(1934)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1922 - 2004*	
ANNUAL TOTAL	2,808,560		2,287,780			
ANNUAL MEAN	7,695		6,251		11,260	
HIGHEST ANNUAL MEAN					17,470	1997
LOWEST ANNUAL MEAN					6,141	1934
HIGHEST DAILY MEAN	50,900	Jun 3	30,300	Jun 13	92,400	May 30, 1923
LOWEST DAILY MEAN	2,420	Mar 10	1,900	Jan 6	996	Dec 14, 1932
ANNUAL SEVEN-DAY MINIMUM	2,830	Aug 25	2,030	Jan 3	1,220	Dec 12, 1932
MAXIMUM PEAK FLOW			a32,200	Jun 12	c102,000	May 22, 1978
MAXIMUM PEAK STAGE			b8.36	Feb 2	b21.70	Mar 20, 1944
INSTANTANEOUS LOW FLOW					1,800	Mar 7, 1995
ANNUAL RUNOFF (AC-FT)	5,571,000		4,538,000		8,156,000	
10 PERCENT EXCEEDS	15,700		11,600		25,100	
50 PERCENT EXCEEDS	4,420		4,800		7,460	
90 PERCENT EXCEEDS	3,240		3,490		4,030	

06309000 YELLOWSTONE RIVER AT MILES CITY, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1922 - 1961**		WATER YEARS 1967 - 2004***	
ANNUAL MEAN	10,710		11,640	
HIGHEST ANNUAL MEAN	16,600	1943	17,470	1997
LOWEST ANNUAL MEAN	6,141	1934	6,176	2001
HIGHEST DAILY MEAN	92,400	May 30, 1923	82,300	Jun 15, 1997
LOWEST DAILY MEAN	996	Dec 14, 1932	1,640	Nov 25, 1977
ANNUAL SEVEN-DAY MINIMUM	1,220	Dec 12,1932	2,030	Jan 3, 2004
MAXIMUM PEAK FLOW	96,300	Jun 19, 1944	c102,000	May 22, 1978
MAXIMUM PEAK STAGE	b21.70	Mar 20, 1944	b20.78	Mar 15, 1979
ANNUAL RUNOFF (AC-FT)	7,756,000		8,431,000	
10 PERCENT EXCEEDS	25,000		25,000	
50 PERCENT EXCEEDS	6,620		8,130	
90 PERCENT EXCEEDS	3,500		4,600	

*--During period of operation (1922-23, 1928 to current year).
**--Prior to construction of Yellowtail Dam, during period of operation (1922-23, 1928-61).
***--After completion of Yellowtail Dam.
a--Gage height, 8.14 ft.
b--Backwater from ice jam.
c--Gage height, 16.50 ft.
e--Estimated.



06324500 POWDER RIVER AT MOORHEAD, MT

LOCATION.--Lat 45°03'28", long 105°52'39" (NAD 27), in SE¼NE¼NE¼ sec.18, T.9S., R.48E., Powder River County, Hydrologic Unit 10090207, on left bank 25 ft downstream from bridge on Powder River, 7.3 mi upstream from Buffalo Creek, and at river mile 183.7.

DRAINAGE AREA.--8,086 mi^2; Sept. 13, 1956 to Aug. 27, 2001 published as 8,088 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1929 to September 1972, October 1974 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1932(M). WSP 1729: Drainage area; WDR MT-04-01: 2003.

GAGE.--Water-stage recorder. Elevation of gage is 3,350.6 ft (NGVD 29). Prior to Aug. 28, 1931, nonrecording gage at site 0.8 mi downstream at different elevation. Aug. 28, 1931, to Mar. 21, 1956, water-stage recorder at site 0.1 mi upstream at different elevation. Mar. 22 to July 24, 1956, nonrecording gage at site 1.4 mi downstream at different elevation. July 25 to Sept. 12, 1956, nonrecording gage at different site and elevation. Sept. 13, 1956 to Aug. 27, 2001, water-stage recorder during period of gage operation 1.1 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 66,300 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1923, reached a stage of 19 ft, site and elevation used 1931-56, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND , WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	e90	e200	e100	e60	e200	230	137	64	23	163	44
2	95	e80	e200	e90	e55	e300	217	137	59	23	122	43
3	87	e90	e200	e80	e55	e500	222	135	55	25	91	40
4	79	e80	e170	e70	e55	e450	231	147	52	32	80	32
5	72	e70	e150	e40	e55	398	236	151	48	89	58	26
6	70	e75	e200	e45	e50	376	226	135	48	106	49	23
7	73	e75	e200	e50	e60	307	230	128	44	99	43	58
8	73	e80	e190	e60	e60	345	234	119	37	73	39	74
9	70	e90	e160	e60	e55	430	222	120	33	69	35	73
10	64	e100	e150	e55	e50	384	210	136	31	109	30	58
11	59	e110	e140	e55	e45	293	218	179	32	80	28	48
12	55	e100	e130	e55	e50	296	235	172	33	58	22	38
13	60	e100	e150	e50	e55	975	257	164	30	50	25	30
14	64	e100	e170	e50	e60	739	273	152	28	40	22	32
15	74	e100	e170	e50	e70	577	265	146	23	30	19	42
16	73	e100	e160	e50	e80	461	231	133	20	27	16	41
17	77	e100	e150	e50	e90	437	226	147	18	21	14	52
18	80	e110	e150	e50	e100	419	205	135	17	17	11	59
19	82	e120	e150	e50	e100	357	193	131	19	15	9.8	55
20	83	e100	e150	e50	e100	315	189	120	19	13	9.4	60
21	82	e90	e150	e55	e90	306	196	116	25	10	9.3	58
22	81	e70	e150	e55	e90	294	196	112	27	11	7.5	56
23	81	e60	e150	e60	e90	278	199	104	26	14	6.6	68
24	78	e70	e140	e55	e90	266	224	101	23	23	5.0	100
25	76	e80	e150	e50	e100	257	191	100	20	57	7.2	104
26	81	e80	e160	e50	e100	257	179	86	19	292	20	111
27	89	e80	e170	e45	e100	248	165	80	19	736	19	92
28	96	e90	e150	e50	e100	237	151	90	19	552	14	86
29	103	e100	e100	e55	e150	231	149	84	23	434	13	74
30	101	e150	e90	e60	---	240	144	75	21	288	18	67
31	e90	---	e100	e60	---	247	---	69	---	218	25	---
TOTAL	2,449	2,740	4,850	1,755	2,215	11,420	6,344	3,841	932	3,634	1,030.8	1,744
MEAN	79.0	91.3	156	56.6	76.4	368	211	124	31.1	117	33.3	58.1
MAX	103	150	200	100	150	975	273	179	64	736	163	111
MIN	55	60	90	40	45	200	144	69	17	10	5.0	23
AC-FT	4,860	5,430	9,620	3,480	4,390	22,650	12,580	7,620	1,850	7,210	2,040	3,460

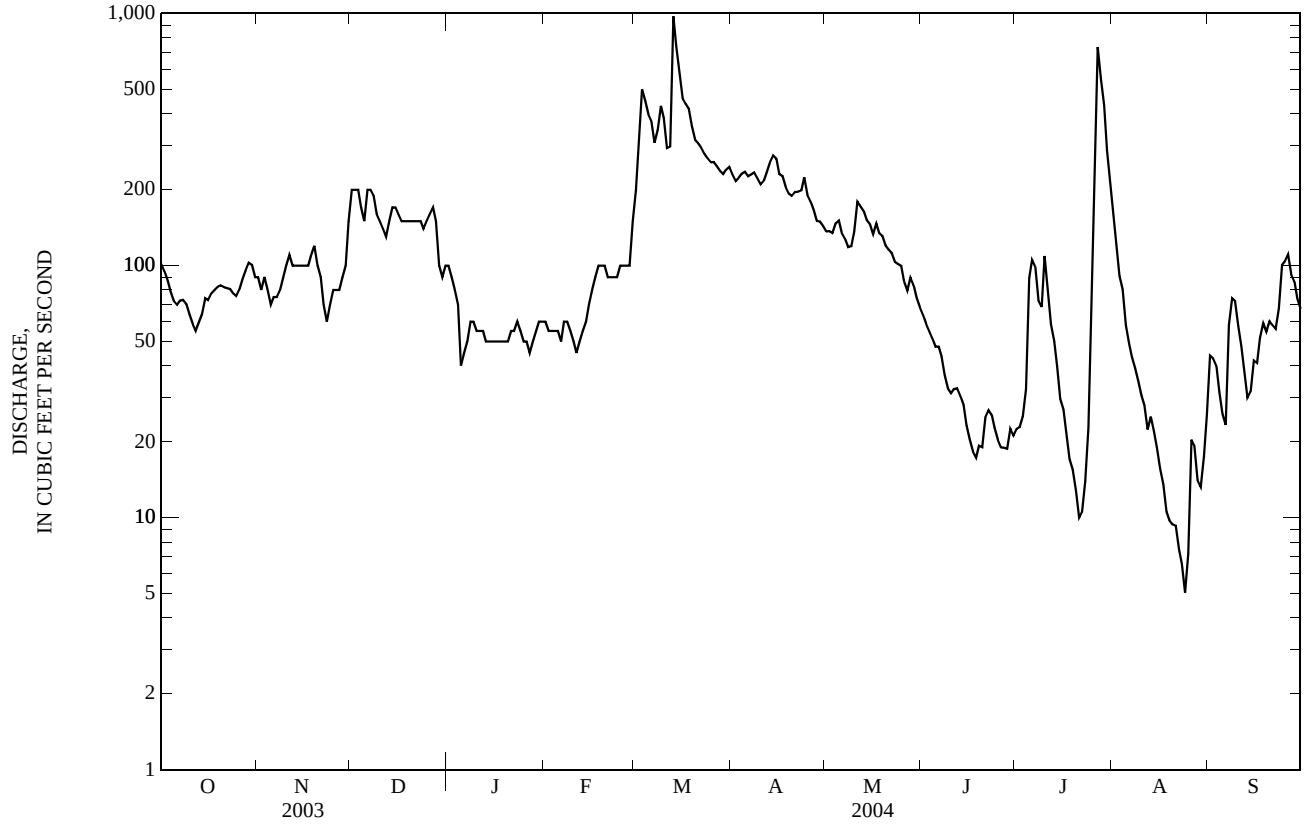
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2004, BY WATER YEAR (WY)*

MEAN	223	223	159	152	284	608	505	1,037	1,338	458	171	143
MAX	897	660	326	445	1,200	2,290	1,314	5,553	4,131	2,500	1,219	686
(WY)	(1995)	(1999)	(1981)	(1981)	(1930)	(1947)	(1965)	(1978)	(1967)	(1937)	(1941)	(1982)
MIN	16.1	80.0	56.2	27.2	20.9	185	117	82.6	31.1	33.9	0.60	1.28
(WY)	(1955)	(1936)	(1933)	(1950)	(1933)	(2002)	(1961)	(1934)	(2004)	(1961)	(1966)	(1960)

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1930 - 2004*	
ANNUAL TOTAL	101,324		42,954.8			
ANNUAL MEAN	278		117		442	
HIGHEST ANNUAL MEAN					1,091	1978
LOWEST ANNUAL MEAN					109	1961
HIGHEST DAILY MEAN	2,000	Mar 16	975	Mar 13	27,500	May 20, 1978
LOWEST DAILY MEAN	11	Jul 26	5.0	Aug 24	0.00	Jul 15, 1931
ANNUAL SEVEN-DAY MINIMUM	15	Jul 25	7.8	Aug 19	0.00	Sep 4, 1960
MAXIMUM PEAK FLOW			a1,180	Mar 13	d33,000	May 20, 1978
MAXIMUM PEAK STAGE			b5.18	Nov 21	f17.70	Mar 21, 1956
INSTANTANEOUS LOW FLOW			c4.1	Aug 25	g0.00	Jul 15, 1931
ANNUAL RUNOFF (AC-FT)	201,000		85,200		320,000	
10 PERCENT EXCEEDS	705		238		1,020	
50 PERCENT EXCEEDS	160		81		215	
90 PERCENT EXCEEDS	23		23		45	

*--During period of operation (1930-72, 1975 to current year).
a--Gage height, 3.97 ft.
b--Backwater from ice.
c--Gage height, 1.71 ft.
d--Gage height, 15.24 ft.
e--Estimated.
f--Ice jam, site and datum then in use.
g--Site and datum then in use.



06324500 POWDER RIVER AT MOORHEAD, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-53, 1956-67, 1969-72, 1975-77, 2001 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1986 to November 1989, May 2001 to current year (seasonal operation).
WATER TEMPERATURE: February 1951 to September 1953, October 1955 to September 1957, October 1974 to September 1977, March 1978 to September 1981 (seasonal records only).
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1977, March 1978 to September 1996 (seasonal records only).

INSTRUMENTATION.--Specific conductance probe installed May 20, 2001.

REMARKS.--Specific conductance record is rated good. The continuous monitor was seasonally discontinued during winter ice conditions, Nov. 1 to Mar. 10. No data are available for May 1 to June 21 due to equipment problems. An observer was hired to collect samples approximately twice-weekly during winter period and during period when equipment malfunctioned. Water-quality sample for Sept. 14 was lost in transit to the lab.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE : Maximum daily, 5,920 microsiemens per centimeter (µS/cm), July 16, 2002; minimum daily, 642 µS/cm at 25.0°C, May 20, 1988.
WATER TEMPERATURE: Maximum daily, 33.0°C, July 14, 1981; minimum daily 0.0°C on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 53,500 mg/L May 27, 1980; minimum daily mean, 3 mg/L Sept. 16-18, 1996.
SEDIMENT LOAD: Maximum daily, 2,230,000 tons May 20, 1978; minimum daily, 0.17 ton Aug. 1, 1988 and Sept. 16, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: For period of available record, maximum, 4,170 microsiemens per centimeter (µS/cm), July 5; minimum, 543 µS/cm, Feb. 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
07...	1700	79	668	8.8	107	8.7	1,630	28.5	18.0	520	115	56.6	7.39
22...	1230	84	678	10.4	108	8.3	2,140	23.0	11.5	590	122	68.1	8.81
NOV													
03...	1100	E90	673	11.9	93	8.4	2,170	-1.0	0.0	620	136	67.5	8.23
13...	1630	E100	672	10.6	83	8.5	1,820	7.5	0.0	680	156	71.1	7.70
DEC													
03...	1445	E200	674	13.9	108	8.0	1,930	9.0	0.0	740	168	77.5	7.23
16...	1230	E160	676	10.7	83	7.9	1,820	3.0	0.0	640	156	61.0	6.70
JAN													
07...	1400	E50	672	9.7	76	8.4	2,190	-3.0	0.0	740	180	71.5	7.69
21...	1100	E55	680	9.0	69	8.0	1,850	7.5	0.0	620	150	60.2	7.10
FEB													
03...	1330	E55	673	11.4	89	7.7	2,110	-1.0	0.0	670	166	62.4	8.43
24...	1300	E90	671	12.3	96	7.9	1,410	22.0	0.0	450	109	43.8	6.65
MAR													
09...	1230	368	652	12.7	117	8.0	1,790	17.5	5.0	520	128	47.8	7.45
23...	1030	281	669	10.7	102	8.4	1,870	18.5	7.5	550	134	53.4	7.68
APR													
13...	1200	262	672	10.9	112	8.5	1,810	23.0	10.5	520	123	52.4	7.09
20...	1440	194	668	9.9	108	8.4	1,830	15.0	13.0	530	123	53.1	7.18
MAY													
11...	1230	189	663	8.6	103	8.4	2,450	15.5	17.0	560	131	57.4	10.9
17...	1140	150	675	--	--	8.4	1,820	15.0	13.0	460	106	47.4	7.89
JUN													
07...	1130	47	667	7.4	95	8.5	3,370	22.5	20.5	730	151	86.8	14.3
23...	1120	27	682	11.4	135	8.1	3,360	25.5	17.5	790	157	97.5	12.7
JUL													
12...	1300	60	668	8.4	120	8.3	3,050	31.0	26.0	680	150	75.2	13.5
26...	1300	226	670	8.0	111	8.3	1,710	34.0	25.0	720	156	79.2	8.87
AUG													
17...	1115	14	676	7.6	98	8.3	2,330	24.5	21.5	710	140	86.6	11.1
24...	1630	5.1	668	8.2	112	8.4	2,290	30.5	24.0	780	146	102	10.8
SEP													
14...	1230	33	668	9.4	111	8.3	1,220	20.0	16.5	--	--	--	--
27...	1830	94	682	9.5	105	8.5	957	13.5	14.5	400	88.6	42.6	4.36

E--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)
OCT													
07...	3	180	42	198	144	73.0	.3	4.52	586	1,110	1.66	260	1,220
22...	5	253	48	--	178	147	.5	5.18	721	1,430	2.11	351	1,550
NOV													
03...	4	247	46	317	211	134	.5	5.92	730	1,460	2.21	E395	1,630
13...	3	194	38	307	219	81.9	.4	9.84	644	1,300	1.90	E377	1,400
DEC													
03...	3	189	35	244	202	100	.4	11.3	672	1,350	1.97	E783	1,450
16...	3	193	39	225	180	114	.5	10.4	590	1,240	1.78	E566	1,310
JAN													
07...	4	227	40	266	221	133	.6	12.5	730	1,500	2.22	E221	1,630
21...	3	200	41	158	166	120	.5	12.3	560	1,210	1.80	E196	1,320
FEB													
03...	4	231	42	292	225	156	.5	12.8	610	1,380	2.07	E226	1,520
24...	3	131	38	200	188	74.6	.4	8.27	436	924	1.34	E240	988
MAR													
09...	4	206	46	307	176	107	.5	8.01	578	1,190	1.72	1,260	1,270
23...	4	214	45	267	208	97.2	.6	5.87	674	1,310	1.89	1,060	1,390
APR													
13...	4	220	47	236	185	123	.5	6.27	564	1,210	1.76	918	1,300
20...	4	217	47	232	194	126	.5	6.37	587	1,240	1.79	689	1,320
MAY													
11...	6	350	57	259	197	221	.8	7.44	774	1,670	2.41	904	1,770
17...	5	222	51	222	188	142	.6	6.57	556	1,200	1.73	515	1,270
JUN													
07...	8	499	59	197	197	307	.7	7.04	1,120	2,310	3.40	317	2,500
23...	7	461	55	179	195	272	.5	5.28	1,240	2,370	3.47	186	2,550
JUL													
12...	7	430	57	190	177	293	.7	5.10	1,030	2,100	3.06	364	2,250
26...	2	117	26	--	178	27.6	.3	7.25	733	1,240	1.90	850	1,390
AUG													
17...	4	256	44	170	167	103	.4	4.07	938	1,640	2.45	68.0	1,800
24...	4	249	40	154	154	63.7	.4	2.31	1,060	1,720	2.57	26.1	1,890
SEP													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	1	54.6	23	--	170	5.67	.2	4.70	340	643	.97	182	717

E--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)
OCT										
07...	<.04	<.016	E.001	.49	<.006	.125	1,810	.5	E1	57
22...	<.04	<.016	<.002	.53	<.006	.166	3,250	.6	--	79
NOV										
03...	<.04	.118	.002	.97	<.006	.69	8,010	.7	5	169
13...	.04	.237	.002	.84	<.006	.29	4,820	.7	--	100
DEC										
03...	.05	.297	.002	.72	<.006	.168	2,990	.7	<2	78
16...	.06	.424	.002	.77	<.006	.154	2,000	.7	--	66
JAN										
07...	.06	.580	.008	.99	E.004	.113	2,710	.8	2	68
21...	.04	.562	.013	.86	<.006	.107	1,920	.5	--	56
FEB										
03...	--	.542	.013	.90	<.006	.086	1,480	.7	<2	58
24...	.087	.374	.012	.85	E.003	.128	1,830	.7	--	52
MAR										
09...	.071	.410	.008	1.62	E.004	1.37	20,800	.7	9	342
23...	E.010	.296	<.002	1.14	<.007	.91	11,800	.7	--	228
APR										
13...	E.007	<.016	<.002	.64	<.006	.49	6,620	.8	4	141
20...	E.006	.159	E.001	.70	E.003	.38	5,340	.9	--	121
MAY										
11...	.026	.022	E.001	.95	.009	.79	9,440	1.2	6	183
17...	E.007	.104	.002	--	E.003	--	5,750	<.2	--	123
JUN										
07...	E.007	<.016	E.001	.31	<.006	E.03	209	1.2	<2	52
23...	--	--	--	--	--	--	76	.9	--	46
JUL										
12...	E.007	<.016	<.002	.63	<.006	.098	905	1.0	<2	62
26...	<.010	<.016	.003	1.13	<.006	.28	3,550	1.1	--	108
AUG										
17...	.015	<.016	<.002	.56	<.006	.036	422	.8	<2	53
24...	E.007	<.016	<.002	.52	<.006	.019	133	1.0	--	43
SEP										
14...	--	--	--	--	--	--	--	--	--	--
27...	E.005	<.016	<.002	.29	<.006	.017	172	.6	--	28

E--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)
OCT										
07...	.13	199	.10	1.8	9.9	<6	2,690	2.16	5.2	56.3
22...	.22	--	--	--	--	<6	--	--	4.6	--
NOV										
03...	.66	246	.52	10.7	22.1	<6	14,700	12.2	3.8	247
13...	.36	--	--	--	--	E4	--	--	6.3	--
DEC										
03...	.19	225	.14	3.2	12.3	E4	4,210	3.31	5.1	68.2
16...	.19	--	--	--	--	<6	--	--	4.2	--
JAN										
07...	.15	257	.11	1.7	10.9	--	2,760	2.10	9.8	42.1
21...	.12	--	--	--	--	E4	--	--	7.2	--
FEB										
03...	.10	256	.06	1.2	10.9	E4	2,070	1.50	6.2	36.2
24...	.13	--	--	--	--	11	--	--	11.7	--
MAR										
09...	1.62	196	1.06	21.7	39.5	7	35,100	28.8	5.3	557
23...	.94	--	--	--	--	<6	--	--	2.6	--
APR										
13...	.50	212	.36	7.9	16.8	<6	12,600	9.78	2.4	182
20...	.42	--	--	--	--	E4	--	--	4.7	--
MAY										
11...	.71	335	.55	10.8	23.1	<19	25,500	15.1	E1.6	317
17...	.48	--	--	--	--	<6	--	--	1.9	--
JUN										
07...	<.12	449	<.08	.9	11.1	<19	380	.39	8.2	16.5
23...	<.12	--	--	--	--	<19	--	--	10.6	--
JUL										
12...	E.06	467	.08	1.4	12.2	<19	1,800	1.41	9.3	59.6
26...	.34	--	--	--	--	<6	--	--	3.7	--
AUG										
17...	E.03	269	E.04	E.7	8.2	<6	640	.59	7.3	38.0
24...	<.06	--	--	--	--	<19	--	--	18.8	--
SEP										
14...	--	--	--	--	--	--	--	--	--	--
27...	<.06	--	--	--	--	16	--	--	4.4	--

E--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd ug/L (01147)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus- pended sedi- ment, percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
OCT							
07...	--	8.67	1.3	17	99	183	39
22...	--	--	1.7	--	99	279	63
NOV							
03...	--	23.7	2.7	72	99	936	E227
13...	--	--	1.6	--	98	469	E127
DEC							
03...	--	11.2	2.4	22	94	290	E157
16...	--	--	2.8	--	97	257	E111
JAN							
07...	--	8.76	2.5	18	92	257	E34.7
21...	--	--	2.0	--	93	163	E24.2
FEB							
03...	--	7.37	2.2	12	91	123	E18.3
24...	--	--	1.4	--	98	154	E37.4
MAR							
09...	--	46.6	3.7	148	95	2,190	2,170
23...	--	--	4.0	--	99	1,280	970
APR							
13...	--	17.3	2.3	52	98	671	475
20...	--	--	2.6	--	100	451	236
MAY							
11...	--	25.9	4.2	79	99	1,060	543
17...	--	--	2.3	--	99	626	254
JUN							
07...	<.02	8.48	3.0	7	87	40	5.1
23...	--	--	1.8	--	96	8	.58
JUL							
12...	--	8.90	2.7	10	98	82	13
26...	--	--	2.1	--	98	451	275
AUG							
17...	--	6.34	1.0	5	97	46	1.7
24...	--	--	1.3	--	95	13	.18
SEP							
14...	--	--	--	--	98	16	1.4
27...	--	--	.6	--	--	--	--

E--Estimated.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1,460	1,380	1,420									
2	1,380	1,340	1,360									
3	1,400	1,370	1,390			*2,170			*1,930			*2,120
4	1,450	1,400	1,420			*2,480						
5	1,540	1,450	1,490									
6	1,670	1,540	1,610						*2,140			
7	1,730	1,670	1,680			*2,310						*2,190
8	1,790	1,730	1,760									
9	1,820	1,780	1,800						*1,770			
10	1,850	1,820	1,830									*2,630
11	1,900	1,840	1,880			*2,230						
12	2,050	1,890	1,980						*1,760			
13	2,130	2,050	2,090			*1,820						*2,330
14	2,130	2,090	2,110									
15	2,130	1,960	2,040			*2,360						
16	2,050	1,970	2,010						*1,820			
17	2,060	1,990	2,020									*2,090
18	2,040	2,000	2,020									
19	2,060	2,010	2,030			*1,660						
20	2,120	2,060	2,100						*2,100			
21	2,190	2,120	2,170									*1,850
22	2,180	2,150	2,170									
23	2,230	2,150	2,190			*2,180						
24	2,430	2,230	2,360						*1,960			
25	2,500	2,420	2,460									*1,720
26	2,430	2,260	2,360									
27	2,280	2,250	2,270			*2,020						
28	2,290	2,230	2,260						*2,120			
29	2,240	2,130	2,170									*1,930
30	2,170	2,110	2,140			*1,980						
31	2,140	2,020	2,110									
MONTH	2,500	1,340	1,960									

	FEBRUARY			MARCH			APRIL			MAY		
1							1,980	1,930	1,950	---	---	---
2						*1,560	1,960	1,920	1,940	---	---	---
3			*2,110				1,940	1,890	1,920	---	---	---
4							1,900	1,840	1,870	---	---	---
5						*1,760	1,850	1,800	1,820	---	---	2,380
6			*1,990				1,860	1,800	1,830	---	---	2,460
7							1,860	1,840	1,850	---	---	---
8							1,850	1,780	1,830	---	---	---
9			*1,980			*1,790	1,840	1,790	1,810	---	---	---
10				1,830	1,730	1,770	1,790	1,760	1,780	---	---	---
11				1,820	1,720	1,770	1,790	1,750	1,770	---	---	2,450
12			*1,970	1,850	1,670	1,750	1,800	1,780	1,790	---	---	2,310
13				2,210	1,740	2,040	1,820	1,760	1,800	---	---	1,780
14				2,280	2,210	2,260	1,770	1,720	1,750	---	---	1,710
15				2,220	1,840	2,030	1,740	1,650	1,700	---	---	1,700
16			*556	1,840	1,590	1,660	1,650	1,620	1,640	---	---	1,810
17				1,630	1,560	1,590	1,700	1,630	1,660	---	---	1,820
18				1,630	1,560	1,600	1,810	1,700	1,740	---	---	1,980
19				1,710	1,620	1,660	1,850	1,810	1,840	---	---	2,070
20			*543	1,810	1,700	1,760	1,860	1,810	1,830	---	---	2,070
21				1,860	1,790	1,820	1,910	1,840	1,870	---	---	2,170
22				1,880	1,850	1,870	2,030	1,900	1,950	---	---	2,240
23				1,930	1,870	1,900	2,050	2,020	2,040	---	---	2,310
24			*1,410	2,000	1,930	1,960	2,080	2,030	2,060	---	---	2,380
25				2,050	2,000	2,020	2,060	1,970	2,010	---	---	2,430
26				2,060	2,020	2,040	1,980	1,870	1,920	---	---	2,610
27			*1,320	2,040	2,010	2,030	1,990	1,870	1,910	---	---	2,680
28				2,020	1,980	1,990	2,070	1,990	2,040	---	---	2,730
29				1,990	1,970	1,990	2,110	2,060	2,090	---	---	2,860
30				2,010	1,960	1,990	2,110	2,060	2,080	---	---	---
31				1,980	1,940	1,960	---	---	---	---	---	3,030
MONTH				2,280	1,560	1,860	2,110	1,620	1,870	---	---	2,270

*--Instantaneous value from USGS or observer samples.

06324500 POWDER RIVER AT MOORHEAD, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	3,010	4,000	3,910	3,960	1,600	1,560	1,580	1,910	1,630	1,750
2	---	---	3,020	3,970	3,890	3,930	1,840	1,600	1,690	1,630	1,560	1,580
3	---	---	3,090	3,940	3,610	3,780	2,020	1,660	1,910	1,570	1,530	1,550
4	---	---	3,200	3,610	3,320	3,460	2,010	1,960	1,980	1,570	1,490	1,540
5	---	---	3,230	4,170	2,990	3,740	2,170	1,980	2,060	1,500	1,470	1,480
6	---	---	3,320	2,990	2,040	2,250	2,250	2,170	2,220	1,480	1,460	1,470
7	---	---	3,370	2,100	1,920	1,990	2,300	2,180	2,230	1,480	1,390	1,440
8	---	---	3,530	1,980	1,920	1,940	2,320	2,280	2,290	1,550	1,390	1,460
9	---	---	3,640	2,520	1,980	2,260	2,290	2,270	2,280	1,550	1,310	1,450
10	---	---	3,820	2,990	2,120	2,470	2,310	2,260	2,280	1,310	1,250	1,270
11	---	---	3,700	3,240	2,990	3,110	2,330	2,290	2,310	1,260	1,240	1,250
12	---	---	3,640	3,200	2,970	3,080	2,290	2,250	2,270	1,250	1,210	1,220
13	---	---	3,530	2,980	2,470	2,800	2,360	2,270	2,310	1,230	1,200	1,210
14	---	---	3,450	2,470	2,360	2,400	2,350	2,180	2,290	1,260	1,200	1,220
15	---	---	3,560	2,460	2,410	2,430	2,180	2,120	2,130	1,260	1,220	1,230
16	---	---	3,590	2,960	2,460	2,690	2,230	2,120	2,170	1,290	1,240	1,260
17	---	---	3,700	3,080	2,960	3,030	2,320	2,200	2,260	1,410	1,280	1,340
18	---	---	3,770	3,120	3,040	3,070	2,250	2,190	2,220	1,410	1,370	1,390
19	---	---	3,840	3,320	3,120	3,210	2,330	2,240	2,290	1,440	1,360	1,410
20	---	---	3,840	3,500	3,320	3,420	2,330	2,300	2,310	1,360	1,210	1,280
21	---	---	---	3,690	3,500	3,610	2,330	2,300	2,310	1,210	1,190	1,190
22	3,620	3,420	3,470	3,650	3,420	3,530	2,340	2,290	2,310	1,200	1,170	1,190
23	3,420	3,300	3,340	3,420	2,990	3,220	2,340	2,310	2,320	1,170	1,120	1,140
24	3,340	3,180	3,250	3,020	2,610	2,890	2,370	2,320	2,340	1,160	1,080	1,120
25	3,390	3,240	3,300	2,670	2,330	2,480	2,480	2,360	2,410	1,100	996	1,050
26	3,410	3,340	3,380	2,720	1,470	1,870	2,520	2,190	2,410	1,020	968	997
27	3,500	3,390	3,430	2,760	1,480	2,570	2,190	1,870	1,970	1,010	932	962
28	3,650	3,490	3,560	2,540	1,770	2,060	1,900	1,870	1,890	932	894	906
29	3,670	3,570	3,620	1,770	1,600	1,640	1,890	1,870	1,880	919	891	902
30	3,950	3,670	3,830	1,710	1,620	1,670	2,060	1,890	1,960	941	913	929
31	---	---	---	1,640	1,590	1,620	2,080	1,910	2,010	---	---	---
MONTH	3,950	3,180	3,480	4,170	1,470	2,780	2,520	1,560	2,160	1,910	891	1,270

*--Instantaneous value from USGS or observer samples.

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY

LOCATION.--Lat 44°55'37", long 105°21'10", in NW¼ SW¼ SW¼ sec.13, T.57 N., R.71 W., Campbell County, Hydrologic Unit 10090208, on left bank 3.1 mi upstream from Dry Creek, 5.0 mi south of the Wyoming-Montana State line, and 20 mi north of Weston.
DRAINAGE AREA.--1,237 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.
REVISED RECORDS.--WDR WY-77-1: Drainage area. WDR WY-78-1: 1976(M).
GAGE.--Water-stage recorder. Elevation of gage is 3,410 ft above NGVD of 1929, from topographic map. U.S. Geological Survey data collection platform with satellite telemetry at station.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversion upstream from station for irrigation of about 80 acres downstream from station. Flow occasionally affected by contributions from mine dewatering.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.04	0.03	0.52	e0.20	0.50	e4.0	1.4	0.79	1.00	0.08	e2.1	0.09
2	0.03	0.04	0.66	e0.15	0.45	e3.6	1.4	0.75	0.80	0.07	1.4	0.13
3	0.02	0.04	0.67	e0.18	0.37	e3.8	1.3	0.80	0.65	0.07	0.93	0.15
4	0.02	0.04	0.73	0.16	0.34	e4.0	1.2	0.69	0.59	0.39	0.52	0.15
5	0.01	0.04	0.56	0.14	0.36	e4.4	1.1	0.60	0.52	0.25	0.25	0.17
6	0.01	0.04	e0.50	0.08	0.33	e4.7	0.95	0.53	0.37	0.19	0.17	0.17
7	0.00	0.04	e0.40	0.07	e0.20	e4.9	0.85	0.50	0.35	13	0.13	0.22
8	0.00	0.04	e0.52	0.08	e0.17	e5.0	0.69	0.49	0.26	9.2	0.08	0.23
9	0.00	0.04	e0.60	0.08	e0.22	5.5	1.1	0.41	0.24	4.7	0.05	0.25
10	0.01	0.04	0.63	0.09	e0.24	9.0	1.0	0.48	0.19	2.1	0.04	0.22
11	0.01	0.06	0.65	0.09	e0.22	23	0.79	0.48	0.21	0.69	0.04	0.24
12	0.01	e0.10	0.49	0.09	e0.20	12	0.68	0.43	0.21	0.36	0.04	0.25
13	0.01	0.23	0.46	0.11	e0.18	11	0.67	0.38	0.14	0.14	0.03	0.27
14	0.01	0.32	0.63	0.17	e0.15	9.5	0.58	0.49	0.13	0.05	0.04	0.22
15	0.01	0.32	0.88	0.26	e0.18	7.6	0.63	0.48	0.13	0.03	0.04	0.26
16	0.01	0.34	0.84	0.26	e0.25	5.9	0.55	0.60	0.12	0.02	0.03	0.26
17	0.01	0.27	0.91	0.27	e0.31	5.5	0.57	0.84	0.12	0.01	0.03	0.26
18	0.01	0.25	0.91	0.34	e0.50	6.7	0.67	1.2	0.11	0.01	0.04	0.27
19	0.02	0.28	0.78	0.49	e3.0	6.5	0.76	1.3	0.09	0.01	0.04	0.32
20	0.02	0.40	0.81	0.52	e20	6.9	0.77	0.99	0.10	0.01	0.04	0.37
21	0.02	0.47	0.86	0.51	e50	9.3	1.1	1.0	0.09	0.01	0.04	0.39
22	0.02	0.46	0.75	0.56	e90	11	1.4	1.3	0.09	0.01	0.04	0.40
23	0.02	0.39	0.62	0.65	e40	7.7	1.3	5.7	0.08	0.02	0.04	0.36
24	0.02	e0.30	0.59	0.65	e18	6.3	1.3	4.8	0.08	0.01	0.04	0.36
25	0.03	e0.20	0.60	0.67	e15	5.6	1.1	2.3	0.07	19	0.04	0.37
26	0.02	e0.25	0.62	0.69	e10	4.5	0.94	1.3	0.05	50	0.05	0.48
27	0.02	e0.28	0.73	0.67	e8.0	3.8	0.85	1.3	0.04	9.5	0.05	0.47
28	0.02	0.30	0.69	0.33	e6.0	3.4	0.76	1.3	0.04	4.5	0.07	0.33
29	0.03	0.38	0.54	0.29	5.0	2.7	0.78	1.3	0.05	3.8	0.07	0.52
30	0.04	0.51	e0.30	0.36	---	2.1	0.77	1.3	0.09	e3.3	0.07	0.52
31	0.04	---	e0.25	0.47	---	1.6	---	1.2	---	e2.6	0.08	---
TOTAL	0.54	6.50	19.70	9.68	270.17	201.5	27.96	36.03	7.01	124.13	6.63	8.70
MEAN	0.02	0.22	0.64	0.31	9.32	6.50	0.93	1.16	0.23	4.00	0.21	0.29
MAX	0.04	0.51	0.91	0.69	90	23	1.4	5.7	1.0	50	2.1	0.52
MIN	0.00	0.03	0.25	0.07	0.15	1.6	0.55	0.38	0.04	0.01	0.03	0.09
AC-FT	1.1	13	39	19	536	400	55	71	14	246	13	17

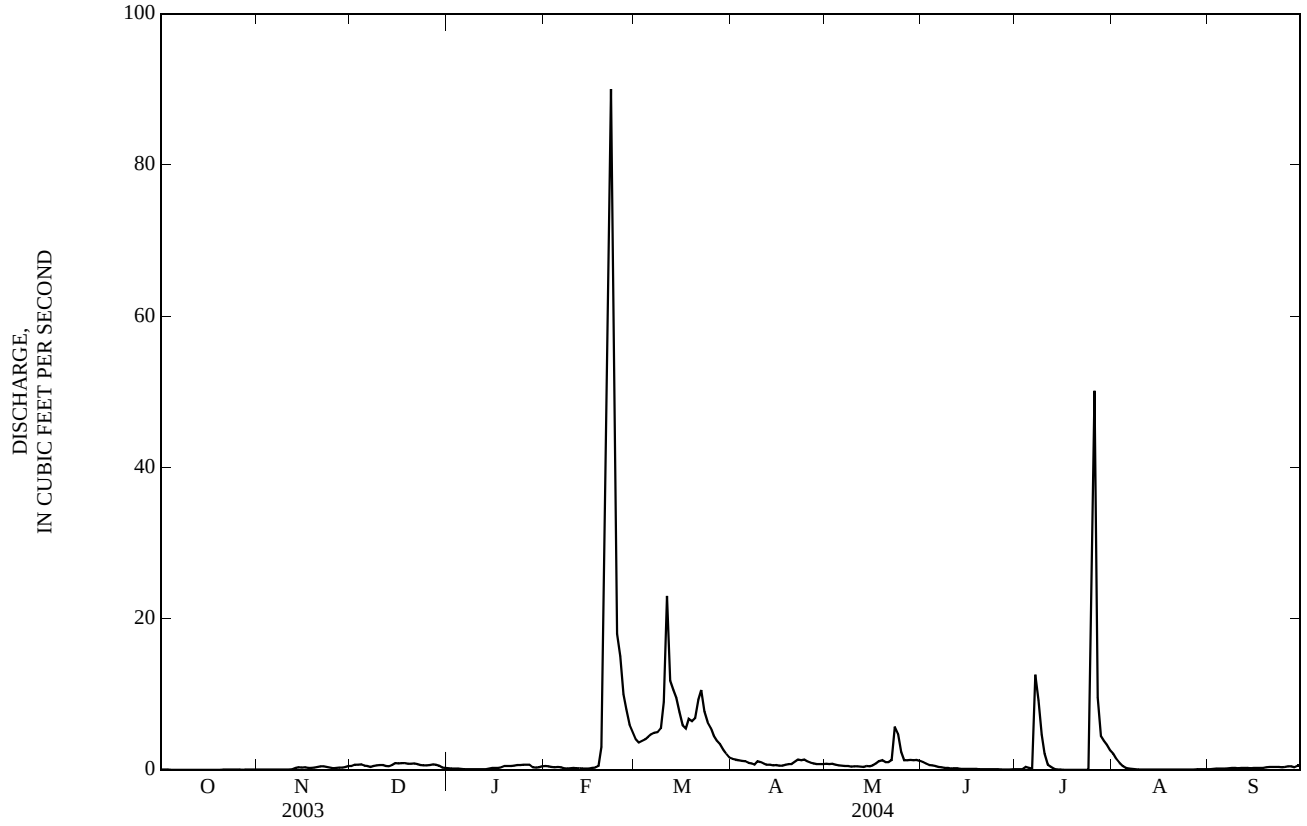
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY)

MEAN	10.6	3.62	2.44	7.61	35.6	58.3	22.7	54.8	26.8	10.5	5.20	3.76
MAX	172	25.4	9.97	89.0	336	613	99.3	703	187	68.8	44.8	60.8
(WY)	(1995)	(1999)	(1995)	(1974)	(1997)	(1978)	(1999)	(1978)	(1984)	(1982)	(1993)	(1986)
MIN	0.01	0.01	0.21	0.10	0.46	1.34	0.75	1.04	0.23	0.04	0.00	0.00
(WY)	(1992)	(1982)	(1982)	(1991)	(1989)	(1981)	(1981)	(1992)	(2004)	(1980)	(1991)	(1991)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004	
ANNUAL TOTAL	2,986.86		718.55			
ANNUAL MEAN	8.18		1.96		20.1	
HIGHEST ANNUAL MEAN					127	1978
LOWEST ANNUAL MEAN					1.49	1992
HIGHEST DAILY MEAN	135	Mar 14	e90	Feb 22	5,000	May 19, 1978
LOWEST DAILY MEAN	0.00	Many days	0.00	Oct 7-9	0.00	Many days,
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 3	0.01	Oct 5	0.00	Some years
MAXIMUM PEAK FLOW	--		a102	Jul 25	c5,300	May 19, 1978
MAXIMUM PEAK STAGE	--		b4.53	Feb 21	11.63	Mar 20, 1978
ANNUAL RUNOFF (AC-FT)	5,920		1,430		14,570	
10 PERCENT EXCEEDS	18		4.7		32	
50 PERCENT EXCEEDS	0.84		0.37		2.6	
90 PERCENT EXCEEDS	0.01		0.03		0.02	

a--Gage height, 4.03 ft.
b--Backwater from ice.
c--Gage height, 11.62 ft.
e--Estimated.

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-82, 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
16...	0850	.01	677	6.7	64	7.8	3,400	7.0	8.0	1,000	199	125	17.4
NOV													
14...	0800	.37	669	9.0	74	7.7	5,250	0.0	1.0	1,500	276	198	28.2
DEC													
16...	1600	.80	674	10.0	78	7.9	3,690	3.0	0.0	1,000	196	127	23.6
JAN													
21...	1400	.48	676	9.2	72	7.9	5,210	8.0	0.0	1,600	313	200	33.6
FEB													
24...	1500	23	670	11.5	90	7.7	725	12.0	0.0	160	35.5	17.5	10.2
MAR													
09...	1630	8.6	669	12.8	115	8.1	1,640	20.0	5.0	370	78.4	42.7	10.9
APR													
13...	1500	1.1	670	10.2	118	8.2	3,240	27.0	15.5	840	154	110	19.2
MAY													
11...	1630	.50	663	8.7	110	8.2	3,810	12.5	19.0	1,000	186	135	24.4
JUN													
07...	1435	.27	666	7.1	102	8.4	3,420	25.5	26.0	760	138	100	20.3
JUL													
07...	1300	21	667	6.9	90	8.2	3,600	32.0	21.0	680	111	97.4	20.7
AUG													
25...	0945	.04	666	5.7	69	8.1	3,030	22.5	17.5	850	172	101	17.7
SEP													
09...	1130	.23	671	8.2	106	8.1	3,340	26.5	21.0	880	164	114	16.9

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)
OCT													
16...	7	491	370	--	385	470	--	114	.9	12.7	1,450	--	--
NOV													
14...	10	859	456	415	306	373	--	190	.7	9.13	2,560	4,300	6.24
DEC													
16...	8	598	--	379	456	556	--	35.2	.9	11.5	1,730	--	--
JAN													
21...	11	977	538	533	706	813	24	93.1	1.2	16.2	2,530	4,590	6.16
FEB													
24...	3	77.4	98	98	95	116	--	21.9	.3	5.99	214	442	.67
MAR													
09...	5	223	206	206	195	234	2	30.9	.5	6.85	595	1,110	1.58
APR													
13...	8	507	421	349	--	--	--	40.1	.7	6.60	1,360	2,400	3.43
MAY													
11...	8	617	399	387	412	503	--	64.4	.8	4.57	1,710	2,990	4.27
JUN													
07...	9	539	331	320	--	--	--	62.9	.8	3.55	1,420	2,470	3.52
JUL													
07...	10	602	334	331	311	373	3	40.5	.7	3.07	1,590	2,660	3.80
AUG													
25...	6	426	389	377	--	--	--	80.1	.9	10.9	1,210	2,240	3.14
SEP													
09...	7	449	332	363	420	512	--	99.2	1.0	10.5	1,380	2,490	3.61

Date	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, unfltrd recover-able, ug/L (01022)
OCT													
16...	--	2,690	E.02	<.06	<.008	<.006	.053	526	1.1	<2	44	E.07	158
NOV													
14...	4.58	4,580	E.04	<.06	<.008	<.006	.052	366	1.0	<2	41	<.18	258
DEC													
16...	--	3,140	<.04	<.06	<.008	<.006	.013	97	1.0	<4	30	<.12	246
JAN													
21...	5.87	4,530	<.04	<.06	<.008	<.006	.038	158	1.2	<2	41	<.18	E334
FEB													
24...	30.7	495	<.04	.22	.011	.068	.36	4,630	1.0	3	53	.50	55
MAR													
09...	27.0	1,160	<.04	<.06	<.008	<.006	.093	876	.5	E2	30	.06	92
APR													
13...	7.48	2,520	--	--	--	--	--	239	1.2	E1	52	<.12	204
MAY													
11...	4.24	3,140	<.04	<.06	<.008	<.006	.046	600	1.2	<2	51	E.08	225
JUN													
07...	1.89	2,590	--	--	--	--	--	415	1.3	<2	47	E.06	197
JUL													
07...	160	2,800	<.04	<.06	<.008	<.006	.089	725	1.1	E2	48	.12	213
AUG													
25...	.25	2,310	--	--	--	--	--	427	1.4	3	70	<.12	185
SEP													
09...	1.65	2,660	<.04	<.06	<.008	<.006	.022	175	1.0	E1	44	<.12	200

E--Estimated.

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, unfltrd ug/L (01147)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT													
16...	<.08	E.6	14.2	<19	930	1.16	774	789	9.46	1.8	11	272	.01
NOV													
14...	<.12	<.8	23.6	26	1,330	.97	315	323	12.6	1.2	21	175	.17
DEC													
16...	<.08	<.8	16.9	E17	280	.21	146	142	10.5	1.6	10	--	--
JAN													
21...	<.12	<.8	30.2	42	350	.24	176	174	13.3	1.6	15	44	.06
FEB													
24...	.14	2.6	11.7	115	4,990	9.10	85.5	147	7.63	.7	37	383	24
MAR													
09...	E.02	E.6	5.2	17	910	1.21	137	138	4.30	.5	6	51	1.2
APR													
13...	<.08	E.6	9.0	<19	470	.67	201	248	7.45	<.8	7	99	.29
MAY													
11...	<.08	E.6	9.9	<19	1,020	1.57	325	329	7.61	E.7	9	140	.19
JUN													
07...	<.08	E.4	11.7	<19	550	.82	230	244	8.97	1.4	7	101	.07
JUL													
07...	<.08	1.1	12.3	<19	1,170	1.64	38.8	122	7.48	1.1	11	96	5.5
AUG													
25...	<.08	1.6	12.4	<19	470	.58	176	260	9.54	.9	7	162	.02
SEP													
09...	<.08	<.8	15.7	<19	250	.31	113	162	7.05	2.0	6	93	.06

E--Estimated.

06325500 LITTLE POWDER RIVER NEAR BROADUS, MT

LOCATION.--Lat 45°23'25", long 105°18'15" (NAD 27), in NW¼NE¼ sec. 21, T.5 S., R.52 E., Powder River County, Hydrologic Unit 10090208, on left bank 1.5 mi downstream from East Fork, 5.5 mi southeast of Broadus, and 8 mi upstream from mouth.

DRAINAGE AREA.--1,974 mi^2.

PERIOD OF RECORD.--March 2002 to current year.

GAGE.--None. Elevation of site is 3,020 ft (NGVD 29).

REMARKS.--Data collected from April 2001 to February 2002 at station 06325550, Little Powder River at mouth, near Broadus. Site moved to current location in March 2002. No lab data for sample taken on Sept. 14 because bottles were lost during shipment.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
08...	0800	1.9	679	9.6	96	8.5	1,670	16.0	10.0	120	29.6	11.1	3.05
NOV													
14...	1000	3.0	678	12.6	99	8.5	1,620	10.5	.5	120	29.1	11.3	2.60
DEC													
03...	1700	4.8	682	14.4	111	8.3	2,490	1.0	.0	520	114	56.7	13.7
JAN													
07...	1045	2.4	682	10.8	83	8.3	1,960	-1.0	.0	220	52.6	21.1	5.26
FEB													
25...	0745	23	679	13.3	103	7.1	1,250	5.5	.0	300	76.3	26.7	18.2
MAR													
10...	0800	15	686	--	--	8.1	1,460	.5	1.5	280	66.5	28.5	8.90
APR													
13...	1730	4.6	677	10.3	120	8.5	2,260	26.0	16.5	330	72.6	35.8	7.80
MAY													
12...	0800	4.9	682	9.9	97	8.5	2,610	2.5	9.0	450	90.7	55.4	12.5
JUN													
08...	0700	2.9	682	9.2	108	8.7	2,000	11.5	17.5	170	34.9	21.3	4.67
JUL													
12...	1600	3.0	680	6.7	98	8.3	1,750	30.5	28.5	120	28.9	12.3	5.70
AUG													
17...	1400	2.9	682	7.2	90	8.9	1,730	25.0	21.0	150	35.5	15.1	5.29
SEP													
14...	1500	3.0	677	10.2	118	8.7	1,670	17.0	16.5	--	--	--	--

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT													
08...	14	350	86	388	4.62	.2	9.1	455	1,100	1.49	5.62	<.04	E.011
NOV													
14...	13	339	86	392	5.93	.2	10.4	435	1,070	1.45	8.65	.05	.045
DEC													
03...	7	385	61	352	37.6	.6	10.3	942	1,770	2.41	23.0	E.03	.026
JAN													
07...	11	373	78	401	13.0	.3	12.3	575	1,290	1.76	8.38	.09	.078
FEB													
25...	4	144	49	175	31.1	.5	10.1	410	823	1.12	51.1	.016	.223
MAR													
10...	6	247	65	251	15.1	.3	8.1	485	1,010	1.37	40.9	.015	.016
APR													
13...	10	425	73	359	17.3	.4	7.7	751	1,530	2.08	19.0	E.007	<.016
MAY													
12...	10	496	70	392	22.8	.4	6.8	998	1,920	2.61	25.4	<.010	<.016
JUN													
08...	13	397	83	411	9.69	.3	4.4	597	1,320	1.79	10.3	<.010	<.016
JUL													
12...	14	348	85	400	7.35	.3	12.5	479	1,130	1.54	9.19	.066	.098
AUG													
17...	12	329	82	397	7.69	.3	8.8	484	1,120	1.53	8.80	<.010	<.016
SEP													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--

E--Estimated.

06325500 LITTLE POWDER RIVER NEAR BROADUS, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)
OCT											
08...	.002	.37	<.006	.071	3	68	79	.05	1.5	8.0	2,040
NOV											
14...	.003	.35	<.006	.045	3	50	68	.05	1.3	7.8	1,630
DEC											
03...	.002	.33	<.006	.038	<2	45	131	<.08	2.4	11.1	1,190
JAN											
07...	.004	.39	.006	.052	3	45	80	.05	1.0	8.9	1,470
FEB											
25...	.010	1.72	.050	.21	3	52	68	.08	1.7	8.9	4,000
MAR											
10...	.002	.59	<.006	.081	<2	37	61	.05	1.3	5.7	1,720
APR											
13...	<.002	.45	<.006	.085	3	61	95	.06	2.5	7.7	2,630
MAY											
12...	E.001	.66	<.006	.114	4	56	130	E.07	2.0	10.0	3,240
JUN											
08...	E.001	.28	<.006	.098	5	50	84	.05	2.0	9.4	2,260
JUL											
12...	.020	.65	.016	.066	6	64	74	.05	1.3	8.4	740
AUG											
17...	<.002	.79	<.006	.180	7	98	94	.14	5.2	11.1	5,640
SEP											
14...	--	--	--	--	--	--	--	--	--	--	--

Date	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, unfltrd ug/L (01147)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT								
08...	2.22	84.2	5.48	.8	11	96	107	.55
NOV								
14...	1.61	89.5	4.06	<.4	9	94	87	.70
DEC								
03...	1.15	89.8	6.75	E.5	13	94	115	1.5
JAN								
07...	1.41	84.6	4.42	.9	11	91	115	.75
FEB								
25...	3.17	179	6.77	.6	15	99	136	8.4
MAR								
10...	1.84	151	4.64	.5	9	96	80	3.2
APR								
13...	2.68	214	5.97	E.3	11	93	192	2.4
MAY								
12...	3.55	219	7.46	.8	14	90	225	3.0
JUN								
08...	2.56	141	5.87	.5	11	99	94	.74
JUL								
12...	.71	27.5	5.64	1.1	6	99	25	.20
AUG								
17...	6.25	275	8.86	E.3	22	99	248	1.9
SEP								
14...	--	--	--	--	--	99	167	1.4

E--Estimated.

06326500 POWDER RIVER NEAR LOCATE, MT

LOCATION.--Lat 46°25'48", long 105°18'34" (NAD 27), in SW¼SW¼SE¼ sec. 23, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.

DRAINAGE AREA.--13,068 mi^2.

PERIOD OF RECORD.--March 1938 to current year.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 926: 1939. WSP 1309: 1938-39 (M). WSP 1729: Drainage area. WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,384.79 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage at bridge 1.5 mi upstream, and July 11, 1947 to Sept. 30, 1965, water-stage recorder at site near upstream bridge at different elevation. Oct. 1, 1965 to Oct. 4, 1966, nonrecording gage, and Oct. 5, 1966 to Mar. 21, 1978, water-stage recorder at present site and elevation. Mar. 22, 1978 to Apr. 23, 1981, water-stage recorder 1.5 mi upstream at different elevation, Apr. 24 to Aug. 20, 1981, water-stage recorder at present site and elevation, and Aug. 21, 1981 to Sept. 30, 1981, water-stage recorder 1.5 mi upstream at different elevation. Oct. 1, 1981 to Apr. 5, 1995 water-stage recorder at site 1.5 miles downstream at different elevation. Apr. 7, 1995 to present, water-stage recorders located on each bank and used depending on control conditions.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 101,800 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	81	e80	e80	e60	e70	262	59	65	20	48	2.4
2	75	87	e90	e70	e60	e70	240	63	64	14	66	2.0
3	75	79	e100	e60	e60	e70	271	51	55	10	43	2.8
4	76	67	e90	e50	e60	e75	267	51	42	9.7	218	3.4
5	75	e40	e80	e40	e55	e80	259	34	39	10	229	3.2
6	75	e45	e100	e45	e55	e80	247	30	26	11	133	2.7
7	71	e45	e110	e50	e55	e80	233	29	24	11	86	2.4
8	64	e50	e120	e60	e55	e80	234	27	28	19	69	2.4
9	61	e55	e120	e70	e60	e80	204	20	25	23	69	2.7
10	60	e60	e110	e70	e70	e90	183	17	24	20	58	2.4
11	49	e60	e100	e70	e65	e100	173	18	35	20	39	2.4
12	47	e60	e110	e70	e65	e200	182	17	50	19	28	4.7
13	46	e60	e120	e70	e60	e300	193	21	42	17	21	12
14	47	e60	e120	e70	e65	469	184	20	31	16	14	33
15	47	e55	e110	e70	e65	605	168	18	23	11	8.3	53
16	48	e60	e100	e70	e70	704	158	20	17	8.1	5.3	45
17	48	e65	e110	e70	e70	597	145	37	22	6.6	4.2	29
18	53	e70	e100	e70	e75	529	154	48	12	5.2	3.4	22
19	51	e70	e100	e70	e75	e500	156	57	14	4.1	2.7	19
20	47	e65	e100	e70	e80	e500	139	67	16	4.2	2.5	19
21	47	e60	e100	e70	e75	e450	107	104	15	3.5	3.2	20
22	49	e50	e100	e70	e75	e450	102	70	15	2.8	4.2	17
23	44	e45	e100	e80	e70	e400	96	64	13	2.6	4.5	15
24	37	e50	e100	e75	e75	354	82	118	13	2.6	4.2	14
25	44	e60	e100	e70	e75	350	75	152	13	2.3	3.3	14
26	42	e70	e100	e60	e80	323	98	76	12	2.1	3.1	16
27	38	e80	e100	e50	e80	289	95	78	12	2.0	2.9	e17
28	45	e90	e90	e50	e80	263	77	70	10	3.5	2.7	e17
29	88	e100	e80	e50	e75	271	78	56	9.6	3.1	2.4	e13
30	87	e90	e80	e60	---	285	65	51	11	3.3	2.5	e30
31	71	---	e80	e60	---	277	---	43	---	2.9	2.7	---
TOTAL	1,783	1,929	3,100	1,990	1,965	8,991	4,927	1,586	777.6	289.6	1,183.1	438.5
MEAN	57.5	64.3	100	64.2	67.8	290	164	51.2	25.9	9.34	38.2	14.6
MAX	88	100	120	80	80	704	271	152	65	23	229	53
MIN	37	40	80	40	55	70	65	17	9.6	2.0	2.4	2.0
AC-FT	3,540	3,830	6,150	3,950	3,900	17,830	9,770	3,150	1,540	574	2,350	870

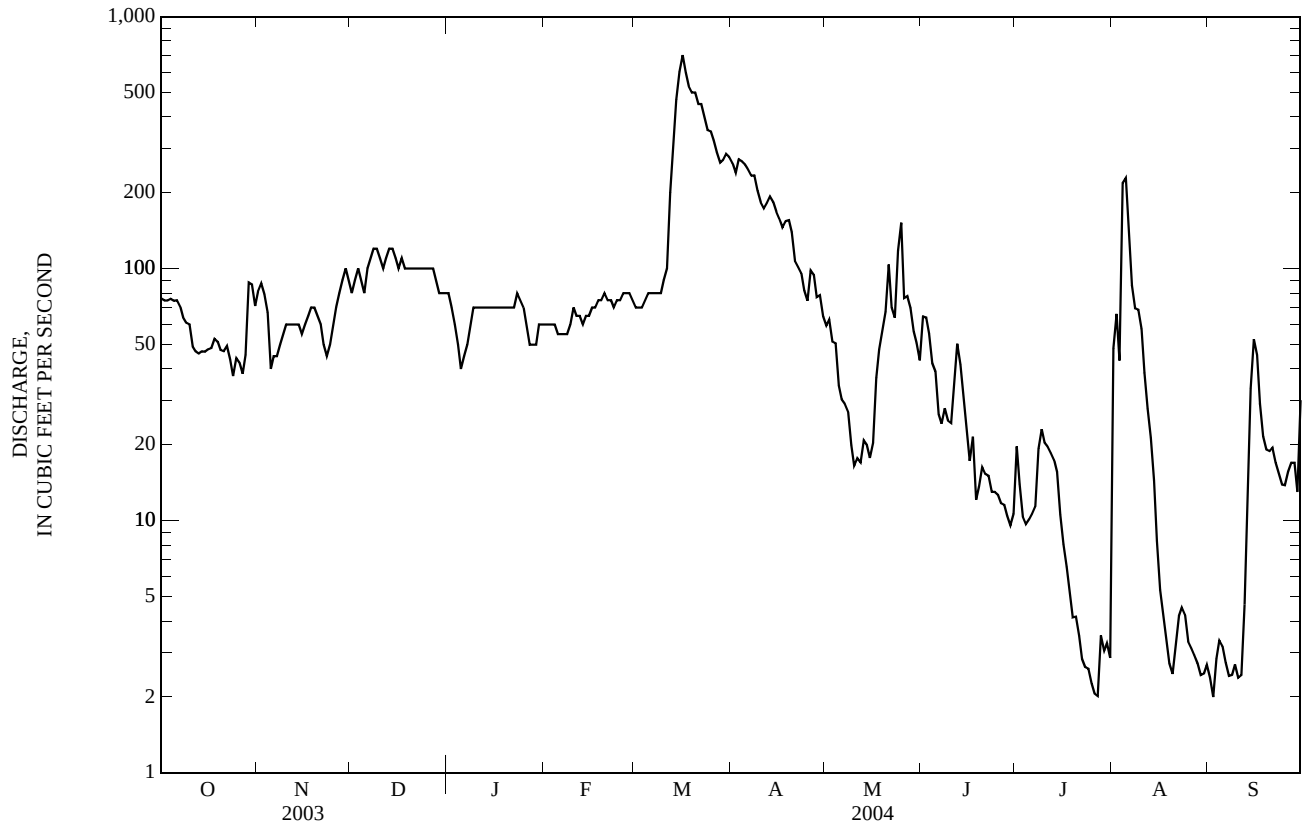
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

MEAN	248	217	149	142	425	1,215	732	1,126	1,577	556	210	167
MAX	921	790	417	476	3,850	4,627	3,062	5,970	8,045	2,015	1,096	898
(WY)	(1941)	(1999)	(1942)	(1981)	(1943)	(1972)	(1965)	(1978)	(1944)	(1993)	(1941)	(1941)
MIN	1.77	12.5	12.5	4.53	2.82	80.2	109	51.2	25.9	9.34	1.30	0.19
(WY)	(1961)	(1961)	(1961)	(1950)	(1950)	(1950)	(1961)	(2004)	(2004)	(2004)	(1988)	(1960)

06326500 POWDER RIVER NEAR LOCATE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	93,584.09		28,959.8			
ANNUAL MEAN	256		79.1		564	
HIGHEST ANNUAL MEAN					1,622	1944
LOWEST ANNUAL MEAN					79.1	2004
HIGHEST DAILY MEAN	2,000	Mar 18	704	Mar 16	26,000	Feb 19, 1943
LOWEST DAILY MEAN	0.10	Sep 8	2.0	Jul 27	0.00	Jan 16, 1950
ANNUAL SEVEN-DAY MINIMUM	0.17	Sep 2	2.5	Aug 28	0.00	Jan 16, 1950
MAXIMUM PEAK FLOW			a875	Mar 15	31,000	Feb 19, 1943
MAXIMUM PEAK STAGE			b4.14	Mar 8	b12.20	Mar 16, 1978
INSTANTANEOUS LOW FLOW					c0.00	Many days
ANNUAL RUNOFF (AC-FT)	185,600		57,440		408,300	
10 PERCENT EXCEEDS	694		170		1,310	
50 PERCENT EXCEEDS	130		60		230	
90 PERCENT EXCEEDS	8.7		4.2		39	

a--Gage height, 2.63 ft.
b--Backwater from ice.
c--On many days in 1950, 1960-61, and 1998.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948-63, 1975 to September 1994, January 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to September 1962, October 1974 to September 1981, July 1988 to January 1990.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1984.

REMARKS.--Data for Sept. 15 missing because sample bottles were lost during shipment to the lab.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1951-62, 1975-81, 1988-90): Maximum daily, 4,000 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 1, 1977; minimum daily, 523 µS/cm at 25.0°C, Mar. 11, 12, 1989.
SEDIMENT CONCENTRATION: Maximum daily mean, 56,800 mg/L May 6, 1975; minimum daily mean, 1.8 mg/L July 30, 1977.
SEDIMENT LOAD: Maximum daily, 906,000 tons May 6, 1975; minimum daily, 1.2 tons July 20, 1981.

06326500 POWDER RIVER NEAR LOCATE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
09...	0830	63	692	10.9	108	8.3	1,950	17.0	10.5	570	126	62.6	9.33
NOV													
13...	0830	E60	704	11.6	87	8.3	2,640	2.0	0.0	740	161	82.2	9.40
DEC													
17...	0900	E110	698	10.2	77	8.2	2,260	8.0	0.0	770	181	76.2	8.68
JAN													
22...	1230	E70	702	5.3	40	8.0	2,540	5.5	0.0	830	200	80.0	8.90
FEB													
19...	0720	E75	--	--	--	8.4	1,270	4.0	0.0	440	120	34.3	6.13
MAR													
23...	1500	E400	689	10.7	109	7.9	1,790	23.0	11.5	520	126	50.6	8.10
APR													
14...	1400	186	690	10.0	109	8.4	2,120	22.0	14.5	570	131	59.6	8.13
MAY													
13...	0830	19	706	13.5	106	8.4	2,590	4.5	2.0	610	132	68.6	9.26
JUN													
09...	0730	26	700	9.8	100	8.8	3,020	13.0	12.0	680	140	79.9	12.2
JUL													
14...	0830	16	695	8.3	101	8.3	3,110	28.5	20.0	610	126	72.1	12.2
AUG													
19...	0730	3.1	700	9.9	98	8.4	2,860	10.0	10.5	620	135	68.4	13.7
SEP													
15...	1630	39	695	8.1	99	8.3	2,290	20.0	20.0	--	--	--	--

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	ANC, water, unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
OCT													
09...	5	254	49	214	179	64.1	.4	7.0	801	1,430	1.95	244	<.04
NOV													
13...	5	341	50	305	211	138	.5	8.8	1,020	1,890	2.57	E307	.04
DEC													
17...	4	265	43	--	184	131	.5	11.5	809	1,600	2.17	E474	.07
JAN													
22...	5	311	45	266	184	152	.5	13.9	910	1,790	2.43	E338	.07
FEB													
19...	2	119	37	130	123	42.5	.4	7.9	486	891	1.21	E180	.182
MAR													
23...	4	232	49	414	199	67.6	.6	7.8	666	1,280	1.74	E302	E.007
APR													
14...	5	281	51	271	189	120	.5	8.2	741	1,460	1.99	735	E.009
MAY													
13...	7	391	58	215	265	109	.4	11.5	997	1,880	2.55	96.3	E.005
JUN													
09...	8	473	60	225	224	159	.4	11.4	1,160	2,170	2.95	152	E.005
JUL													
14...	9	489	63	236	231	131	.5	7.8	1,280	2,260	3.08	97.7	E.005
AUG													
19...	8	449	61	--	266	118	.4	12.4	1,190	2,150	2.92	18.0	E.006
SEP													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

E--Estimated.

06326500 POWDER RIVER NEAR LOCATE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)
OCT													
09...	<.016	--	.64	--	.181	E2	80	212	.15	3.2	14.2	4,370	3.36
NOV													
13...	.073	E.001	.51	<.006	.054	6	56	270	E.05	1.6	12.1	1,060	.92
DEC													
17...	.417	E.001	1.01	<.006	.35	<2	111	215	.24	4.1	13.7	5,660	5.19
JAN													
22...	.505	.006	.87	E.003	.101	E1	69	281	E.07	1.3	14.5	2,210	1.53
FEB													
19...	.223	.014	.78	E.005	.101	<2	39	105	.10	1.0	6.8	2,300	2.60
MAR													
23...	.485	E.001	2.83	E.004	2.98	14	538	205	2.21	41.9	72.4	69,600	58.3
APR													
14...	<.016	<.002	.57	<.006	.29	3	109	213	.24	4.6	11.2	6,980	5.19
MAY													
13...	E.013	E.001	.23	<.006	.006	<2	33	220	<.08	<.8	5.9	60	<.12
JUN													
09...	<.016	E.001	.25	E.003	.005	<2	54	280	<.08	<.8	10.5	120	E.09
JUL													
14...	<.016	<.002	.63	<.006	.133	E1	114	300	.08	4.3	15.2	3,700	4.16
AUG													
19...	<.016	<.002	.33	<.006	.013	<2	69	315	<.08	E.4	11.2	220	.20
SEP													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, unfltrd ug/L (01147)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT								
09...	109	--	11.8	2.7	23	99	302	51
NOV								
13...	29.5	--	8.09	1.6	13	95	176	E28
DEC								
17...	165	--	13.9	3.8	35	96	542	E161
JAN								
22...	42.4	--	8.99	2.5	21	90	144	E27
FEB								
19...	83.4	--	6.77	1.6	12	99	69	E14
MAR								
23...	1,240	--	92.8	4.9	288	97	4,570	E4,940
APR								
14...	134	--	11.7	2.1	30	93	397	199
MAY								
13...	19.6	--	4.46	E.8	E4	79	42	2.2
JUN								
09...	10.9	<.02	7.37	1.8	4	85	64	4.5
JUL								
14...	103	--	11.2	1.4	21	99	242	10
AUG								
19...	29.0	--	8.71	E.8	5	96	57	.48
SEP								
15...	--	--	--	--	--	99	8,320	876

E--Estimated.

06327500 YELLOWSTONE RIVER AT GLENDIVE, MT

LOCATION (REVISED).--Lat 47°06'21", long 104°43'07" (NAD 27), in SE¼NW¼NE¼ sec. 35, T. 16N., R. 55E., Dawson County, Hydrologic Unit 10100004, on right bank at City of Glendive water treatment plant, 50 feet downstream from Bell Street Bridge, and at river mile 92.4.
DRAINAGE AREA.--65,900 mi^2.
PERIOD OF RECORD.--October 1897 to December 1910, October 1931 to September 1934, October 2002 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 1,881.3 ft (NGVD 29) from City of Glendive. October 1897 to December 1910, October 1931 to September 1934 nonrecording gage at different datum.
REMARKS.-- Records good except those for estimated daily discharges, which are poor. Some regulation on tributary streams, notably Bighorn Lake, usable capacity 1,312,000 acre-ft, on the Bighorn River and other tributary streams in Wyoming and Montana. Diversions for irrigation of about 1,200,000 acres upstream of station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were obtained during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,970	e4,700	e4,400	e3,100	e4,200	e4,700	5,180	4,790	9,100	16,300	5,730	4,500
2	3,940	e4,700	e4,500	e2,800	e4,000	e4,700	5,010	5,160	11,100	15,500	5,580	4,070
3	4,030	e4,700	e4,700	e2,700	e4,000	e4,800	5,080	6,070	10,000	15,700	5,510	3,940
4	4,190	e4,500	e4,700	e2,500	e4,200	e4,900	5,020	6,110	8,510	16,300	5,560	3,740
5	4,200	e4,300	e4,700	e2,300	e4,400	e5,000	5,260	5,150	7,420	15,700	5,510	3,640
6	4,190	e4,200	e4,700	e2,100	e4,400	e5,100	5,600	4,870	6,830	15,200	5,710	3,800
7	4,120	e4,100	e4,700	e2,000	e4,400	e5,300	5,620	4,920	7,460	15,500	5,200	4,330
8	4,090	e4,000	e4,600	e2,000	e4,400	e5,500	5,600	6,480	11,000	17,100	5,090	4,480
9	4,060	e4,200	e4,600	e2,100	e4,500	e5,600	5,530	9,670	15,900	16,000	5,050	4,410
10	4,000	e3,900	e4,600	e2,200	e4,500	e5,700	5,820	12,700	19,300	14,400	4,730	4,250
11	3,980	e4,200	e4,800	e2,400	e4,500	e5,500	6,260	13,500	20,200	14,100	4,520	4,190
12	3,960	e4,500	e4,900	e3,200	e4,500	e5,700	6,610	13,800	23,400	13,200	4,390	4,150
13	4,000	e4,400	e4,900	e4,300	e4,500	e5,900	6,870	13,400	30,900	12,300	4,130	4,250
14	4,200	e4,700	e4,900	e4,900	e4,300	e6,000	6,830	12,300	28,400	11,500	3,750	4,380
15	4,390	e4,700	e4,500	e5,000	e4,100	e5,800	6,440	12,000	24,000	10,500	3,460	4,530
16	4,410	e4,500	e4,700	e5,000	e4,000	e5,700	6,250	10,800	20,400	9,650	3,290	4,590
17	4,370	e4,500	e4,800	e5,000	e4,100	e5,800	6,300	9,480	17,900	8,980	3,100	4,610
18	4,530	e4,600	e5,000	e5,000	e4,200	e5,600	6,400	8,600	16,600	8,480	2,760	4,560
19	4,500	e4,800	e5,000	e5,000	e4,300	e5,700	7,000	7,840	16,000	8,150	2,740	4,880
20	4,370	4,880	e5,000	e5,000	e4,500	e5,500	6,930	7,340	15,200	7,770	2,720	5,230
21	4,260	5,100	e4,900	e5,000	e4,700	5,400	6,730	7,280	14,400	7,220	2,550	5,260
22	4,460	e5,100	e5,100	e5,000	e4,700	5,330	6,480	7,230	14,000	6,980	2,540	5,470
23	4,720	e5,100	e5,100	e5,000	e4,700	5,410	6,340	7,590	13,900	7,340	2,700	5,590
24	4,380	e5,100	e5,100	e5,100	e4,700	5,370	6,130	8,320	13,500	7,750	2,880	5,760
25	4,360	e4,500	e5,300	e5,100	e4,700	e5,600	5,830	9,370	13,300	7,350	2,820	6,060
26	4,050	e4,200	e5,100	e5,100	e4,700	4,940	5,780	10,400	13,600	7,340	2,690	5,920
27	4,130	e4,300	e4,900	e5,100	e4,700	5,140	5,290	11,100	15,000	7,150	2,750	5,750
28	4,440	e4,100	e5,000	e5,100	e4,700	5,030	5,100	10,200	16,600	6,690	2,690	5,520
29	4,770	e4,100	e5,000	e5,000	e4,700	5,290	5,210	9,000	17,200	6,460	3,080	5,620
30	e4,600	e4,300	e4,300	e4,900	---	5,480	4,880	8,120	17,000	6,130	3,500	5,710
31	e4,700	---	e3,600	e4,600	---	5,490	---	7,640	---	6,050	4,570	---
TOTAL	132,370	134,980	148,100	123,600	128,300	166,980	177,380	271,230	468,120	338,790	121,300	143,190
MEAN	4,270	4,499	4,777	3,987	4,424	5,386	5,913	8,749	15,600	10,930	3,913	4,773
MAX	4,770	5,100	5,300	5,100	4,700	6,000	7,000	13,800	30,900	17,100	5,730	6,060
MIN	3,940	3,900	3,600	2,000	4,000	4,700	4,880	4,790	6,830	6,050	2,540	3,640
AC-FT	262,600	267,700	293,800	245,200	254,500	331,200	351,800	538,000	928,500	672,000	240,600	284,000

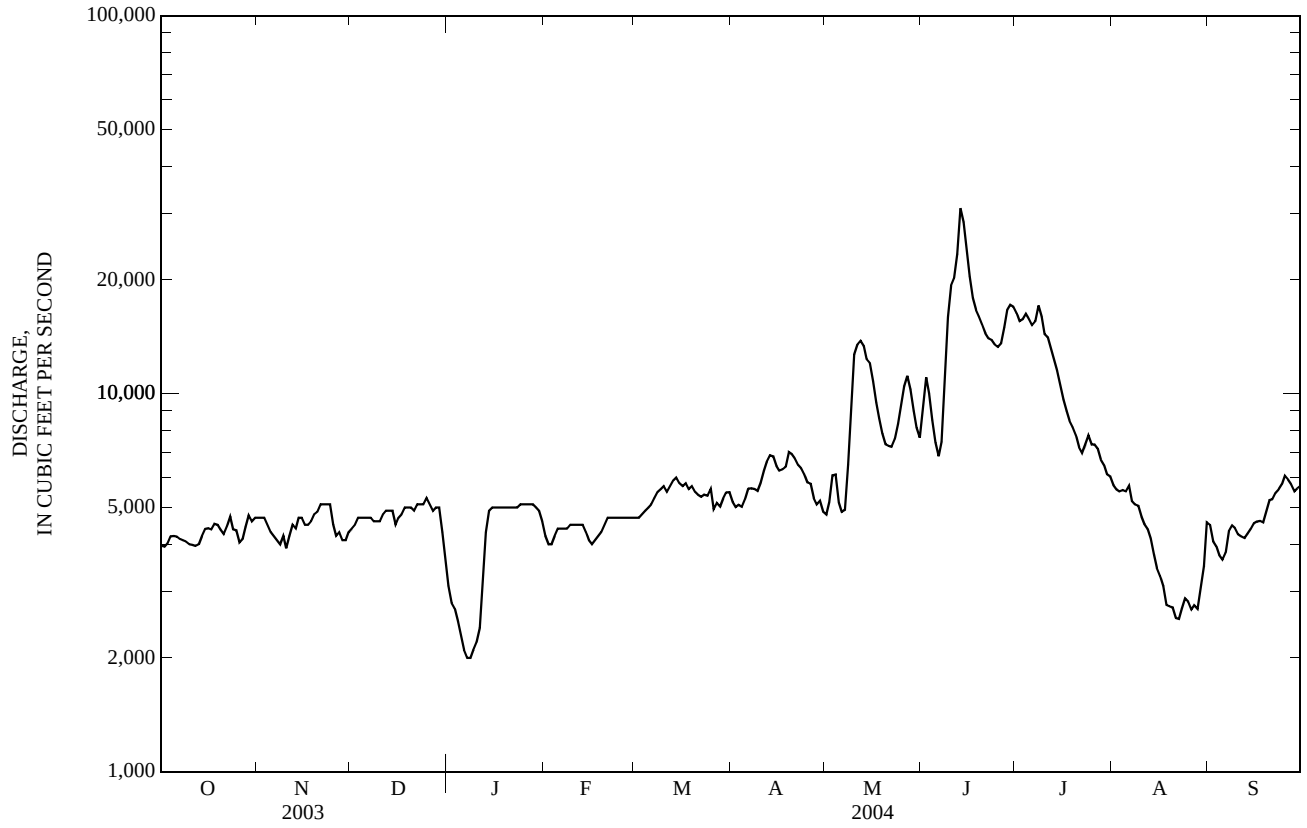
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)*

MEAN	6,483	5,483	4,580	4,471	4,600	8,607	9,371	20,960	45,710	28,560	10,960	7,609
MAX	9,503	7,390	6,670	5,700	5,940	18,790	23,500	44,700	74,220	72,000	24,110	12,100
(WY)	(1909)	(1902)	(1898)	(1904)	(1902)	(1910)	(1899)	(1901)	(1909)	(1899)	(1907)	(1909)
MIN	4,270	4,200	2,924	3,268	3,361	5,040	4,374	8,749	12,950	4,054	2,785	2,856
(WY)	(2004)	(1900)	(1932)	(1932)	(1933)	(1899)	(1905)	(2004)	(1934)	(1934)	(1934)	(1934)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004*	
ANNUAL TOTAL	2,962,670		2,354,340			
ANNUAL MEAN	8,117		6,433		13,200	
HIGHEST ANNUAL MEAN					19,610	1899
LOWEST ANNUAL MEAN					6,061	1934
HIGHEST DAILY MEAN	53,000	Jun 4	30,900	Jun 13	107,000	Jun 9, 1909
LOWEST DAILY MEAN	2,200	Mar 12	2,000	Jan 7, 8	1,060	Dec 14, 1932
ANNUAL SEVEN-DAY MINIMUM	2,800	Jan 12	2,160	Jan 5	1,380	Dec 12, 1932
MAXIMUM PEAK FLOW			a32,200	Jun 13	c118,000	Jun 8, 1909
MAXIMUM PEAK STAGE			b48.76	Dec 1	b60.16	Mar 16, 2003
INSTANTANEOUS LOW FLOW					d1,060	Dec 14, 1932
ANNUAL RUNOFF (AC-FT)	5,876,000		4,670,000		9,560,000	
10 PERCENT EXCEEDS	17,600		13,200		34,200	
50 PERCENT EXCEEDS	4,700		5,000		6,600	
90 PERCENT EXCEEDS	3,300		3,950		4,100	

*--During periods of operation (October 1897 to December 1910, October 1931 to September 1934, October 2002 to current year).
a--Gage height, 47.33 ft.
b--Backwater from ice.
c--Observed, gage height, 12.70 ft, datum then in use.
d--Observed.
e--Estimated.

06327500 YELLOWSTONE RIVER AT GLENDIVE, MT—Continued



06329500 YELLOWSTONE RIVER NEAR SIDNEY
(National Water-Quality Assessment Program)

LOCATION.--Lat 47°40'42", long 104°09'22" (NAD 27), in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi downstream from bridge on State Highway 23, 2.5 mi south of Sidney, 3.0 mi downstream from Fox Creek, and at river mile 29.2.

DRAINAGE AREA.--69,083 mi^2. Area at site 4.5 mi upstream, 68,812 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

REVISED RECORDS.--WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,881.3 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles upstream at different elevation. Apr. 9, 1934, water-stage recorder at two sites within 500 ft of highway bridge 0.2 mi upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at elevation 1.36 ft higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi upstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, on the Bighorn River and on other tributary streams in Wyoming and Montana. Diversion for irrigation of about 1,250,000 acres upstream from station. Lower Yellowstone Project Main Canal diverts from left bank in NW¼ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi upstream for irrigation of about 52,000 acres of which about one-third lies upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,940	4,950	e4,000	e3,400	e3,000	e4,800	5,280	2,890	7,100	14,200	4,670	3,720
2	3,940	e5,000	e4,400	e3,000	e2,600	e4,800	5,170	2,700	9,150	13,700	4,490	3,590
3	3,930	e5,000	e4,600	e2,800	e2,400	e4,800	5,020	2,790	9,950	13,100	4,350	3,270
4	4,000	e5,000	e4,800	e2,700	e2,600	e4,800	4,860	3,590	8,970	13,600	4,460	3,060
5	4,110	e4,400	e4,800	e2,600	e3,200	e4,900	4,830	3,100	7,670	13,400	4,410	2,890
6	4,110	e3,800	e4,800	e2,500	e4,500	e5,000	5,080	2,430	6,770	13,100	4,590	2,910
7	4,090	e3,700	e4,800	e2,400	e4,500	e5,100	5,400	2,030	6,470	12,900	4,590	3,120
8	4,050	e3,500	e4,800	e2,200	e4,500	e5,400	5,550	1,890	7,510	14,500	4,300	3,490
9	4,030	e3,700	e4,700	e2,100	e4,500	e5,600	5,410	3,330	11,400	14,600	4,340	3,660
10	3,950	e4,000	e4,700	e2,100	e4,600	e5,800	5,480	6,440	15,200	13,400	4,170	3,610
11	3,910	e4,300	e4,700	e2,100	e4,600	e6,000	5,770	8,320	17,700	12,300	3,880	3,510
12	3,870	e4,500	e4,500	e2,300	e4,600	e5,800	6,130	9,010	17,600	12,900	3,640	3,540
13	3,850	e4,600	e4,400	e2,600	e4,600	e6,000	6,580	9,090	22,500	11,100	3,350	3,660
14	3,990	e4,400	e5,000	e3,000	e4,600	e6,100	6,810	8,440	24,900	10,400	3,050	3,930
15	4,100	e4,800	e5,000	e4,000	e4,400	e6,200	6,490	7,980	21,700	9,490	2,740	4,060
16	4,260	e4,800	e4,600	e5,200	e4,300	e6,000	6,020	7,890	18,900	8,420	2,520	4,270
17	4,310	e4,600	e4,700	e5,200	e4,200	e6,000	5,870	6,780	16,600	7,600	2,170	4,330
18	4,450	e4,600	e4,800	e5,200	e4,300	e5,900	5,770	5,980	14,900	6,860	1,960	4,420
19	4,490	e4,700	e5,100	e5,200	e4,400	e6,000	6,000	5,440	14,300	6,390	1,780	4,390
20	4,480	e4,800	e5,100	e5,200	e4,500	e5,800	6,280	5,070	13,800	6,070	1,660	4,810
21	4,420	e4,700	e5,100	e5,200	e4,600	e5,700	6,040	4,790	13,100	5,740	1,540	5,220
22	4,390	e3,500	e5,200	e5,200	e4,800	e5,600	5,670	5,040	12,600	5,340	1,480	5,310
23	4,540	e3,000	e5,200	e5,200	e4,800	e5,700	5,460	5,150	12,300	5,120	1,510	5,570
24	4,740	e2,500	e5,200	e5,200	e4,800	5,720	5,310	5,900	12,000	5,640	1,680	5,830
25	4,550	e3,000	e5,200	e5,200	e4,800	5,540	5,130	6,940	11,500	5,810	1,890	6,070
26	4,400	e3,200	e5,300	e5,300	e4,800	5,470	4,640	7,760	11,500	5,570	1,870	6,300
27	4,310	e3,600	e5,200	e5,300	e4,800	5,280	3,870	8,970	12,000	5,540	1,960	6,170
28	4,400	e3,300	e5,100	e5,300	e4,800	5,140	3,680	9,330	13,500	5,480	1,870	5,970
29	4,580	e3,400	e5,100	e5,300	e4,800	5,180	3,490	9,250	14,500	5,210	1,900	5,850
30	4,860	e3,500	e4,700	e5,000	---	5,330	3,110	7,940	14,600	4,930	2,200	5,930
31	5,140	---	e3,800	e3,700	---	5,370	---	7,160	---	4,760	2,660	---
TOTAL	132,190	122,850	149,400	121,700	123,900	170,830	160,200	183,420	400,690	287,170	91,680	132,460
MEAN	4,264	4,095	4,819	3,926	4,272	5,511	5,340	5,917	13,360	9,264	2,957	4,415
MAX	5,140	5,000	5,300	5,300	4,800	6,200	6,810	9,330	24,900	14,600	4,670	6,300
MIN	3,850	2,500	3,800	2,100	2,400	4,800	3,110	1,890	6,470	4,760	1,480	2,890
AC-FT	262,200	243,700	296,300	241,400	245,800	338,800	317,800	363,800	794,800	569,600	181,800	262,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911- 2004, BY WATER YEAR (WY)*

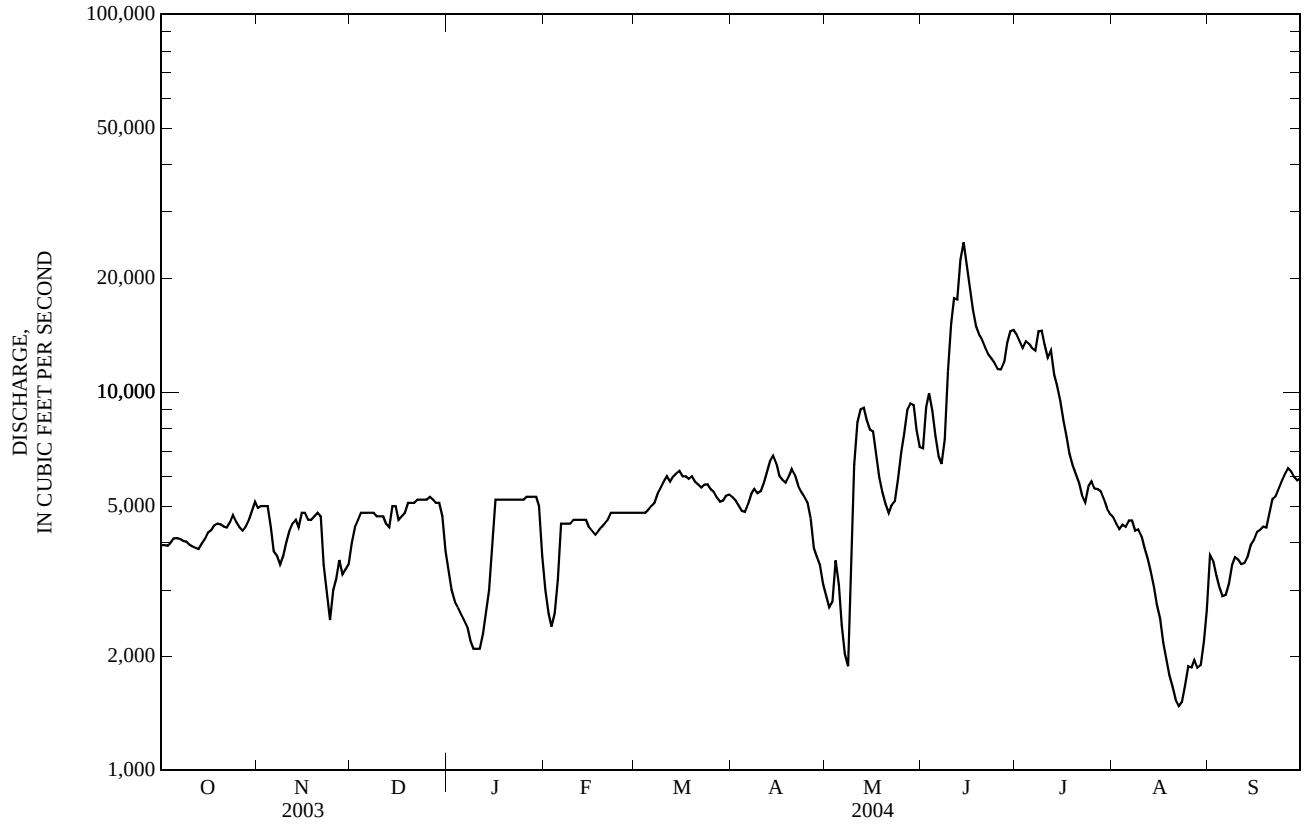
MEAN	8,227	7,290	5,925	5,691	6,812	10,860	10,230	18,090	38,440	22,730	8,596	7,082
MAX	29,130	12,150	9,594	13,110	17,750	25,980	39,160	38,100	77,280	55,000	20,470	16,000
(WY)	(1924)	(1924)	(1976)	(1925)	(1971)	(1972)	(1924)	(1928)	(1918)	(1917)	(1912)	(1941)
MIN	3,726	3,700	3,019	2,0875	2,702	3,235	2,821	5,409	11,580	3,311	1,602	2,389
(WY)	(1922)	(1922)	(1961)	(1937)	(1936)	(2002)	(19861)	(1961)	(1919)	(1919)	(1961)	(1934)

06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1961 - 2004*	
ANNUAL TOTAL	2,758,240		2,076,490			
ANNUAL MEAN	7,557		5,673		12,510	
HIGHEST ANNUAL MEAN					21,250	1924
LOWEST ANNUAL MEAN					5,673	2004
HIGHEST DAILY MEAN	48,400	Jun 5	24,900	Jun 14	142,000	Jun 21, 1921
LOWEST DAILY MEAN	1,720	Aug 30	1,480	Aug 22	570	May 17, 1961
ANNUAL SEVEN-DAY MINIMUM	1,800	Aug 26	1,650	Aug 19	1,010	Aug 8, 1961
MAXIMUM PEAK FLOW			25,800	Jun 14	a159,000	Jun 21, 1921
MAXIMUM PEAK STAGE			9.99	Jun 14	b24.03	Mar 6, 1994
INSTANTANEOUS LOW FLOW					c470	May 17, 1961
ANNUAL RUNOFF (AC-FT)	5,471,000		4,119,000		9,065,000	
10 PERCENT EXCEEDS	17,300		10,100		28,000	
50 PERCENT EXCEEDS	4,700		4,800		8,000	
90 PERCENT EXCEEDS	2,880		2,800		4,040	

SUMMARY STATISTICS	WATER YEARS 1911 - 1965**		WATER YEARS 1967 - 2004***	
ANNUAL MEAN	12,890		12,100	
HIGHEST ANNUAL MEAN	21,250	1924	19,150	1997
LOWEST ANNUAL MEAN	5,814	1934	5,673	2004
HIGHEST DAILY MEAN	142,000	Jun 21, 1921	104,000	May 23, 1978
LOWEST DAILY MEAN	570	May 17, 1961	800	Jan 2, 1989
ANNUAL SEVEN-DAY MINIMUM	1,010	Aug 8, 1961	1,060	Aug 23, 2001
MAXIMUM PEAK FLOW	a159,000	Jun 21, 1921	d111,000	May 23, 1978
MAXIMUM PEAK STAGE	b21.85	Mar 22, 1947	b24.03	Mar 6, 1994
INSTANTANEOUS LOW FLOW	c470	May 17, 1961		
ANNUAL RUNOFF (AC-FT)	9,341,000		8,763,000	
10 PERCENT EXCEEDS	29,900		26,000	
50 PERCENT EXCEEDS	7,690		8,500	
90 PERCENT EXCEEDS	3,820		4,550	

*--During period of operation 1911-31, 1934 to current year. Published as “At Intake” 1911-31.
**--Prior to Bighorn Lake reaching operational level.
***--After Bighorn Lake reached operational level.
a--Gage height, 12.60 ft, site and datum then in use.
b--Backwater from ice.
c--Gage height, 2.73 ft, site and datum then in use.
d--Gage height, 20.02 ft.
e--Estimated.



06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1981.
WATER TEMPERATURE: January 1951 to September 1985.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1981, October 1982 to September 1991, seasonal records (March to November) only from October 1991 to current year .

REMARKS.--Daily sediment records rated good except for several periods of storm runoff, which are rated poor. Daily sediment data collected during open water; no data available during ice effect from Dec. 1 to Mar. 17. Water-quality samples were collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District. The daily sediment record is a Corps of Engineers program.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 6, 1979; minimum daily, 261 µS/cm at 25.0°C, June 4, 1966.
WATER TEMPERATURE: Maximum, 29.0°C July 23, 1960; minimum, 0.0°C on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 26,800 mg/L May 8, 1975; minimum daily mean, 8 mg/L Jan. 9, 1973.
SEDIMENT LOAD: Maximum daily, 3,030,000 tons May 8, 1975; minimum daily, 63 tons Jan. 2, 1989.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION (seasonal records): Maximum daily mean, 2,560 mg/L, June 13; minimum daily mean, 12 mg/L, Oct. 14-16.
SEDIMENT LOAD (seasonal records): Maximum daily, 171,000 tons, June 14; minimum daily, 82 tons, May 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, water fltrd inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
OCT													
06...	1850	4,090	--	--	--	--	724	--	15.0	--	--	--	--
09...	1200	4,040	705	8.9	93	8.4	692	25.5	14.0	160	124	146	2
NOV													
12...	1330	E4,500	721	11.9	86	8.1	725	-.5	.0	181	170	207	--
DEC													
17...	1230	E4,700	711	12.1	89	8.2	763	4.0	.0	186	192	234	--
JAN													
22...	1600	E5,200	712	10.7	79	8.2	765	2.0	.0	177	174	212	--
FEB													
25...	1245	E4,800	709	12.4	91	7.6	670	7.0	.0	151	151	184	--
MAR													
24...	0800	5,700	705	11.5	96	7.9	859	13.0	4.5	174	167	204	--
APR													
05...	1230	4,820	--	--	--	--	824	--	12.0	--	--	--	--
MAY													
13...	1030	9,020	--	--	--	--	379	--	8.5	--	--	--	--
25...	0800	6,680	696	9.7	98	8.6	578	6.5	11.5	127	126	134	10
JUN													
14...	1345	24,900	--	--	--	--	309	--	17.5	--	--	--	--
15...	1700	20,900	713	9.1	102	7.9	330	16.0	17.5	79	72	87	--
28...	1015	13,300	--	--	--	--	370	--	20.0	--	--	--	--
JUL													
15...	1530	9,310	705	8.1	107	8.2	372	33.5	25.5	100	93	111	1
AUG													
03...	1430	4,360	--	--	--	--	553	--	22.5	--	--	--	--
30...	0900	2,120	712	8.7	100	8.3	772	17.5	18.5	182	167	196	4
SEP													
08...	1700	3,550	711	9.5	109	8.5	643	26.5	18.5	162	155	162	11
23...	1400	5,590	--	--	--	--	701	--	15.5	--	--	--	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT											
06...	--	--	--	--	--	--	--	--	80	18	199
09...	11.4	179	<.04	<.06	<.008	.23	<.006	.018	83	14	153
NOV											
12...	10.8	183	.05	.50	E.005	.75	<.006	.040	60	57	E693
DEC											
17...	12.4	204	E.03	.51	E.004	.69	<.006	.018	98	16	E203
JAN											
22...	11.5	187	.06	.57	E.006	.81	<.006	.025	73	23	E323
FEB											
25...	10.6	170	E.03	.49	.008	1.08	E.003	.101	97	134	E1,740
MAR											
24...	16.7	252	<.04	.41	.008	1.48	<.006	.92	96	1,280	19,800
APR											
05...	--	--	--	--	--	--	--	--	93	142	1,850
MAY											
13...	--	--	--	--	--	--	--	--	64	255	6,210
25...	9.86	147	E.02	<.06	<.008	.18	<.006	.27	95	440	7,940
JUN											
14...	--	--	--	--	--	--	--	--	77	2,230	150,000
15...	3.99	67.1	<.04	.34	.027	1.91	.020	1.11	88	1,430	80,600
28...	--	--	--	--	--	--	--	--	45	241	8,650
JUL											
15...	5.48	74.8	<.04	.12	<.008	.70	E.004	.27	93	523	13,100
AUG											
03...	--	--	--	--	--	--	--	--	94	33	388
30...	11.0	208	<.04	<.06	<.008	.33	<.006	.037	99	29	166
SEP											
08...	8.73	156	<.04	<.06	<.008	.40	<.006	.048	95	43	412
23...	--	--	--	--	--	--	--	--	97	188	2,840

Date	Time	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)
NOV													
12...	1330	<.006	<.006	<.006	<.005	<.005	E.005	<.050	<.010	<.004	<.041	<.020	<.005
JAN													
22...	1600	<.006	<.006	<.006	<.005	<.005	E.007	<.050	<.010	<.004	<.041	<.020	<.005
MAR													
24...	0800	<.006	<.006	<.006	<.005	<.005	<.007	<.050	<.010	<.004	<.041	<.020	<.005
MAY													
25...	0800	<.006	<.006	.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005
JUN													
15...	1700	<.006	<.006	<.006	<.005	<.005	<.007	<.050	<.010	<.004	<.041	<.024	<.005
JUL													
15...	1530	<.006	<.006	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005
AUG													
30...	0900	<.006	<.006	<.006	<.005	<.005	E.005	<.050	<.010	<.004	<.041	<.020	<.005
SEP													
08...	1700	<.006	<.006	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005

E--Estimated.

06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulfinyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diazinon-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Desulfinyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)
NOV													
12...	<.006	<.018	<.003	<.012	<.005	101	<.009	<.02	<.004	<.009	<.005	<.029	<.013
JAN													
22...	<.006	<.018	<.003	<.012	<.005	124	<.009	<.02	<.004	<.009	<.005	<.029	<.013
MAR													
24...	<.006	<.018	<.003	<.012	<.005	119	<.009	<.02	<.200	<.009	<.005	<.029	<.013
MAY													
25...	<.006	<.018	<.003	<.012	<.005	127	<.009	<.02	--	<.009	<.005	<.029	<.013
JUN													
15...	<.006	<.018	<.003	<.012	<.005	101	<.009	<.02	<.005	<.009	<.005	<.029	<.013
JUL													
15...	<.006	<.018	<.003	<.012	<.005	104	<.009	<.02	<.004	<.009	<.005	<.029	<.013
AUG													
30...	<.006	<.018	<.003	<.012	<.005	111	<.009	<.02	<.036	<.009	<.005	<.029	<.013
SEP													
08...	<.006	<.018	<.003	<.012	<.005	103	<.009	<.02	<.004	<.009	<.005	<.029	<.013

Date	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
NOV												
12...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003
JAN												
22...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003
MAR												
24...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.005
MAY												
25...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.017	<.006	<.050	<.007	<.003
JUN												
15...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	E.008	<.006	<.003	<.007	<.003
JUL												
15...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.021	<.006	<.003	<.007	<.003
AUG												
30...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.022	<.006	<.003	<.007	<.003
SEP												
08...	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007	<.003

Date	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)
NOV										
12...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005
JAN										
22...	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005
MAR										
24...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005
MAY										
25...	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005
JUN										
15...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005
JUL										
15...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005
AUG										
30...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005
SEP										
08...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005

E--Estimated.

06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
NOV						
12...	<.02	<.034	<.02	<.010	<.002	<.009
JAN						
22...	<.02	<.034	<.02	<.010	<.002	<.009
MAR						
24...	<.02	E.036	<.02	<.010	<.002	<.009
MAY						
25...	<.02	<.150	<.02	<.010	.008	<.009
JUN						
15...	<.02	<.034	<.02	<.010	.005	<.009
JUL						
15...	<.02	<.034	<.02	<.010	<.002	<.009
AUG						
30...	<.02	<.034	<.02	<.010	<.002	<.009
SEP						
08...	<.02	<.034	<.02	<.010	<.002	<.009

Date	Time	Instan-taneous dis-charge, cfs (00061)	Bed sedi-ment, percent <.063mm (80164)	Bed sedi-ment, percent <.125mm (80165)	Bed sedi-ment, percent <.25mm (80166)	Bed sedi-ment, percent <.5 mm (80167)	Bed sedi-ment, percent <1 mm (80168)	Bed sedi-ment, percent <2 mm (80169)	Bed sedi-ment, percent <4 mm (80170)	Bed sedi-ment, percent <8 mm (80171)	Bed sedi-ment, percent <16 mm (80172)
OCT											
06...	1850	4,090	<1	2	55	68	69	70	73	83	100
APR											
05...	1230	4,820	8	61	95	96	96	96	97	100	--
MAY											
13...	1030	9,020	<1	2	87	90	90	90	90	93	100
JUN											
14...	1345	24,900	<1	8	95	100	--	--	--	--	--
28...	1015	13,300	<1	1	91	96	96	96	96	96	100
AUG											
03...	1430	4,360	<1	<1	29	91	94	95	96	100	--
SEP											
23...	1400	5,590	<1	<1	45	98	99	100	--	--	--

E--Estimated.

06329500 YELLOWSTONE RIVER NEAR SIDNEY—Continued

SUSPENDED-SEDIMENT (SEASONAL)
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	23	245	545	7,280							---	---
2	20	213	468	6,320							---	---
3	19	202	390	5,260							---	---
4	18	194	318	4,290							---	---
5	19	211	259	3,080							---	---
6	18	200	220	2,260							---	---
7	18	199	190	1,900							---	---
8	20	219	180	1,700							---	---
9	21	229	202	2,020							---	---
10	18	192	235	2,540							---	---
11	16	169	135	1,570							---	---
12	14	146	62	753							---	---
13	13	135	64	795							---	---
14	12	129	65	772							---	---
15	12	133	65	842							---	---
16	12	138	64	829							---	---
17	13	151	67	832							---	---
18	15	180	92	1,140							875	13,900
19	18	218	119	1,510							1,000	16,200
20	22	266	108	1,400							1,080	16,900
21	21	251	96	1,220							1,160	17,900
22	17	202	87	822							1,420	21,500
23	21	257	85	689							1,310	20,200
24	25	320	84	567							1,260	19,500
25	24	295	82	664							859	12,800
26	23	273	74	639							575	8,490
27	30	349	62	603							470	6,700
28	40	475	55	490							358	4,970
29	59	730	53	487							293	4,100
30	164	2,150	52	491							252	3,630
31	555	7,700	---	---							216	3,130
TOTAL	---	16,771	---	53,765							---	169,920
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	182	2,590	24	187	197	3,780	368	14,100	40	504	76	763
2	165	2,300	20	146	370	9,140	448	16,600	36	436	55	533
3	142	1,920	20	151	365	9,810	575	20,300	33	388	45	397
4	118	1,550	28	271	338	8,190	410	15,100	32	385	44	364
5	126	1,640	20	167	160	3,310	275	9,950	41	488	43	336
6	110	1,510	18	118	135	2,470	279	9,870	1,840	22,800	42	330
7	117	1,710	18	99	98	1,710	442	15,400	1,940	24,000	41	345
8	112	1,680	16	82	113	2,290	1,600	62,600	1,700	19,700	42	396
9	85	1,240	42	378	518	15,900	1,500	59,100	1,020	12,000	45	445
10	73	1,080	116	2,020	1,340	55,000	530	19,200	285	3,210	46	448
11	71	1,110	268	6,020	1,920	91,800	482	16,000	222	2,330	44	417
12	85	1,410	330	8,030	2,050	97,400	540	18,800	199	1,960	42	401
13	108	1,920	283	6,950	2,560	156,000	425	12,700	188	1,700	41	405
14	122	2,240	207	4,720	2,540	171,000	278	7,810	168	1,380	62	658
15	95	1,660	155	3,340	1,520	89,100	380	9,740	108	799	221	2,420
16	66	1,070	133	2,830	1,080	55,100	255	5,800	62	422	446	5,140
17	54	856	84	1,540	645	28,900	193	3,960	52	305	367	4,290
18	53	826	65	1,050	533	21,400	156	2,890	46	243	375	4,480
19	54	875	53	778	490	18,900	113	1,950	39	187	297	3,520
20	66	1,120	41	561	480	17,900	79	1,290	34	152	214	2,780
21	56	913	36	466	310	11,000	61	945	31	129	152	2,140
22	44	674	49	667	228	7,760	57	822	30	120	158	2,270
23	41	604	61	848	230	7,640	51	705	30	122	184	2,770
24	40	573	373	5,940	246	7,970	61	929	31	141	158	2,490
25	36	499	367	6,880	205	6,370	63	988	34	174	132	2,160
26	34	426	568	11,900	217	6,740	61	917	37	187	114	1,940
27	34	355	660	16,000	302	9,780	58	868	38	201	93	1,550
28	39	388	566	14,300	288	10,500	55	814	39	197	76	1,230
29	33	311	667	16,700	360	14,100	52	731	34	174	58	916
30	25	210	559	12,000	529	20,900	49	652	31	184	52	833
31	---	---	215	4,160	---	---	45	578	45	323	---	---
TOTAL	---	35,260	---	129,299	---	961,860	---	332,109	---	95,341	---	47,167

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'53", long 103°58'16" (revised), in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2, approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,108.98 ft above NGVD of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Small diversions upstream from station for irrigation. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft, present datum, from local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	e6.6	e5.0	e3.3	e1.2	217	7.9	3.6	27	1.7	0.06	3.5
2	1.4	e6.3	e4.9	e3.1	e1.2	215	7.1	3.6	24	33	3.9	2.3
3	1.4	e6.2	e4.9	e2.4	e1.3	231	6.4	4.5	13	18	84	2.3
4	1.4	e6.1	e4.8	e1.9	e1.2	197	5.9	4.8	5.2	9.5	132	2.7
5	1.4	e6.0	e4.6	e1.7	e1.0	159	6.1	5.0	2.9	13	321	3.7
6	1.6	e5.9	e4.6	e1.5	e0.90	142	4.9	4.6	1.5	14	783	4.1
7	1.7	e5.8	e4.6	e1.4	e1.0	113	4.0	3.7	4.3	8.9	308	2.1
8	1.7	e5.6	e4.6	e1.4	e1.1	128	3.9	3.8	3.0	49	118	1.5
9	2.1	e5.5	e4.5	e1.5	e1.1	153	3.9	3.3	1.3	683	82	1.1
10	2.4	e5.1	e4.4	e1.6	e1.2	173	3.9	2.8	2.3	416	72	0.89
11	2.3	e4.9	e4.3	e1.7	e1.2	262	3.7	2.8	3.2	180	54	0.88
12	3.0	e4.7	e4.4	e1.8	e1.2	146	3.5	2.8	2.6	93	40	0.82
13	3.1	e4.5	e4.7	e1.9	e1.2	234	3.8	2.8	2.2	53	31	1.2
14	3.5	e4.3	e4.6	e1.9	e1.3	145	4.0	2.9	2.1	36	24	1.7
15	4.0	e4.4	e4.5	e1.9	e1.3	91	4.0	2.8	2.9	19	18	3.6
16	4.7	e4.5	e4.7	e1.9	e1.4	80	3.9	3.6	2.1	11	14	11
17	5.0	4.9	e4.8	e1.8	e1.6	77	4.4	6.5	1.9	7.0	13	3.8
18	4.7	4.9	e4.8	e1.7	e1.8	57	4.2	20	2.1	3.3	10	1.9
19	4.4	4.8	e4.7	e1.7	e2.0	43	4.0	8.9	2.0	1.9	8.8	0.90
20	4.1	4.7	e4.6	e1.8	e3.0	35	4.0	5.4	1.9	2.6	6.9	1.0
21	4.9	e4.7	e4.6	e1.9	e4.0	30	4.1	6.1	2.0	0.29	5.7	1.3
22	5.3	e4.7	e4.3	e2.0	e7.0	27	3.9	5.2	2.1	0.22	5.0	1.4
23	6.1	e4.7	e4.1	e1.9	e25	29	4.2	5.1	1.5	1.7	6.4	1.2
24	5.9	e4.7	e3.9	e1.7	e100	23	4.1	4.6	1.0	1.2	14	0.88
25	6.6	e4.7	e3.9	e1.4	e90	20	3.4	46	0.99	0.61	6.3	0.69
26	7.1	e4.6	e3.8	e1.3	118	17	3.4	397	0.89	0.34	4.1	0.61
27	7.6	e4.5	e3.7	e1.2	245	18	3.5	214	0.62	0.19	3.2	0.65
28	7.2	e4.5	e3.6	e1.0	223	18	3.7	94	0.53	0.16	2.9	0.74
29	e7.0	e4.6	e3.6	e1.1	336	14	3.8	64	0.52	0.12	2.9	0.93
30	e6.9	e5.0	e3.5	e1.1	---	12	3.9	44	0.49	0.10	8.0	1.2
31	e6.8	---	e3.4	e1.1	---	9.8	---	31	---	0.08	5.7	---
TOTAL	126.9	152.4	135.4	53.6	1,175.20	3,115.8	131.5	1,009.2	118.14	1,657.91	2,187.86	60.59
MEAN	4.09	5.08	4.37	1.73	40.5	101	4.38	32.6	3.94	53.5	70.6	2.02
MAX	7.6	6.6	5.0	3.3	336	262	7.9	397	27	683	783	11
MIN	1.4	4.3	3.4	1.0	0.90	9.8	3.4	2.8	0.49	0.08	0.06	0.61
AC-FT	252	302	269	106	2,330	6,180	261	2,000	234	3,290	4,340	120

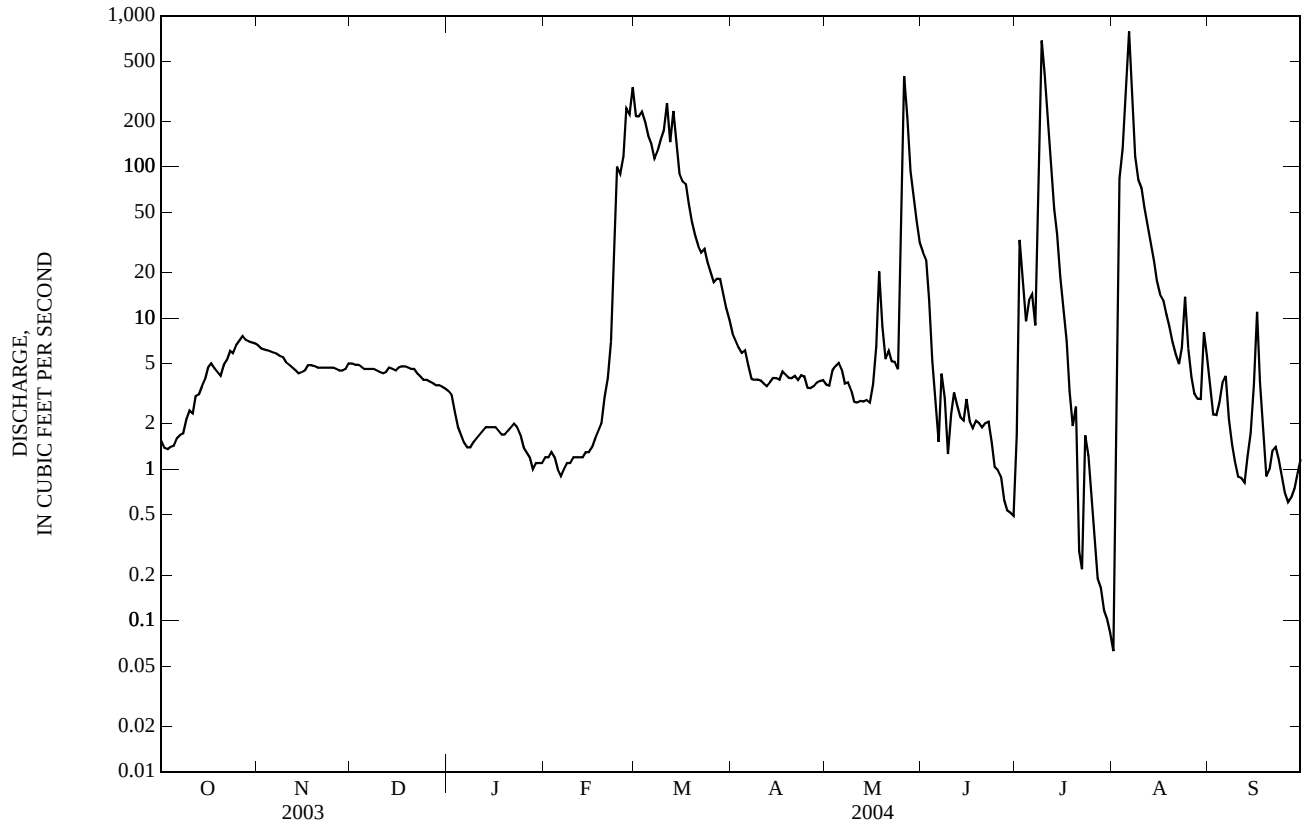
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1905, 1957 - 2004, BY WATER YEAR (WY)

MEAN	55.1	12.6	6.70	7.31	81.6	336	199	325	249	94.2	41.0	29.5
MAX	876	103	34.9	59.7	1,112	2,121	1,198	1,894	1,107	961	537	244
(WY)	(1972)	(1972)	(1972)	(1974)	(1996)	(1978)	(1971)	(1978)	(1967)	(1905)	(1906)	(1905)
MIN	0.29	0.00	0.00	0.00	0.00	1.95	1.97	1.12	0.11	0.00	0.00	0.61
(WY)	(1905)	(1905)	(1905)	(1905)	(1969)	(1992)	(1981)	(1992)	(1961)	(1961)	(1904)	(1958)

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1904-1905, 1957-2004	
ANNUAL TOTAL	4,170.76		9,924.50			
ANNUAL MEAN	11.4		27.1		a120	
HIGHEST ANNUAL MEAN					492	1978
LOWEST ANNUAL MEAN					4.68	1961
HIGHEST DAILY MEAN	400	Mar 20	783	Aug 6	8,560	Mar 24, 1978
LOWEST DAILY MEAN	0.39	Aug 26	0.06	Aug 1	b0.00	Jul 31, 1904
ANNUAL SEVEN-DAY MINIMUM	0.44	Aug 12	0.15	Jul 26	0.00	Jul 31, 1904
MAXIMUM PEAK FLOW			1,020	Aug 6	9,420	Mar 24, 1978
MAXIMUM PEAK STAGE			6.89	Aug 6	16.90	Mar 24, 1978
ANNUAL RUNOFF (AC-FT)	8,270		19,690		87,040	
10 PERCENT EXCEEDS	19		78		226	
50 PERCENT EXCEEDS	4.0		4.1		10	
90 PERCENT EXCEEDS	0.63		1.1		1.2	

a--Median of annual mean discharges, 98 ft^3/s.
b--No flow at times in some years.
e--Estimated.



06336600 BEAVER CREEK NEAR TROTTERS, ND

LOCATION.--Lat 47°09'47", long 103°59'32", in SW¼SW¼NE¼ sec.33, T.143 N., R.105 W., Golden Valley County, Hydrologic Unit 10110204, on left bank 100 ft upstream from bridge on county road, 2.4 mi east of Montana-North Dakota State line, 13 mi southwest of Trotters, 17 mi north of Beach, 20 mi upstream from Elk Creek, and 27 mi above mouth.

DRAINAGE AREA.--616 mi^2.

PERIOD OF RECORD.--October 1977 to current year (seasonal records only since 1984).

REVISED RECORDS.--1982: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,371.96 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for periods where discharge is less than 1.0 ft^3/s and for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1,100 ft^3/s, gage height, 14.48 ft, from floodmark; minimum daily discharge, 0.04 ft^3/s, Sept. 11-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					e1.0	e2.3	27	9.4	4.4	0.75	0.27	0.15
2					e1.0	e2.0	25	9.3	4.2	0.74	0.34	0.13
3					e1.1	e2.0	23	9.1	3.9	1.2	0.35	0.13
4					e1.1	e2.0	21	9.0	3.6	0.98	0.41	0.14
5					e1.1	e20	20	8.9	3.4	0.85	0.41	0.15
6					e1.1	e69	19	8.6	3.0	1.1	0.36	0.16
7					e1.1	e132	18	8.4	2.6	1.1	0.30	0.14
8					e1.1	e236	17	8.2	2.5	1.3	0.40	0.12
9					e1.1	e502	16	8.0	2.5	1.2	0.43	0.09
10					e1.1	e1,000	15	7.7	2.6	1.2	0.40	0.05
11					e1.1	e720	14	7.7	2.6	1.1	0.36	0.04
12					e1.1	e800	14	7.7	2.7	0.97	0.30	0.04
13					e1.1	e570	13	7.7	2.6	0.70	0.27	0.07
14					e1.1	e490	13	7.4	2.5	0.56	0.30	0.12
15					e1.1	e280	12	7.3	2.1	0.53	0.34	0.14
16					e1.3	e190	12	6.9	2.0	0.51	0.31	0.13
17					e1.4	e160	12	6.6	1.9	0.37	0.28	0.19
18					e1.4	e130	12	6.3	1.7	0.27	0.28	0.20
19					e1.4	107	12	6.3	1.8	0.24	0.37	0.21
20					e1.4	86	12	5.7	1.7	0.51	0.36	0.21
21					e1.5	72	12	4.7	1.5	0.53	0.46	0.19
22					e1.7	66	11	4.9	1.4	0.40	0.30	0.14
23					e2.2	64	11	5.1	1.5	0.38	0.19	0.17
24					e2.8	60	11	5.7	1.6	0.35	0.17	0.15
25					e3.4	52	10	6.0	1.4	0.32	0.17	0.20
26					e3.2	45	10	5.8	1.3	0.29	0.17	0.26
27					e2.7	40	10	5.2	1.6	0.27	0.17	0.24
28					e2.5	36	9.8	5.2	0.92	0.26	0.18	0.21
29					e2.3	32	9.7	4.9	0.74	0.28	0.18	0.18
30					---	29	9.5	4.8	0.84	0.28	0.19	0.14
31					---	28	---	4.4	---	0.30	0.19	---
TOTAL					45.5	6,024.3	431.0	212.9	67.10	19.84	9.21	4.49
MEAN					1.57	194	14.4	6.87	2.24	0.64	0.30	0.15
MAX					3.4	1,000	27	9.4	4.4	1.3	0.46	0.26
MIN					1.0	2.0	9.5	4.4	0.74	0.24	0.17	0.04
AC-FT					90	11,950	855	422	133	39	18	8.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

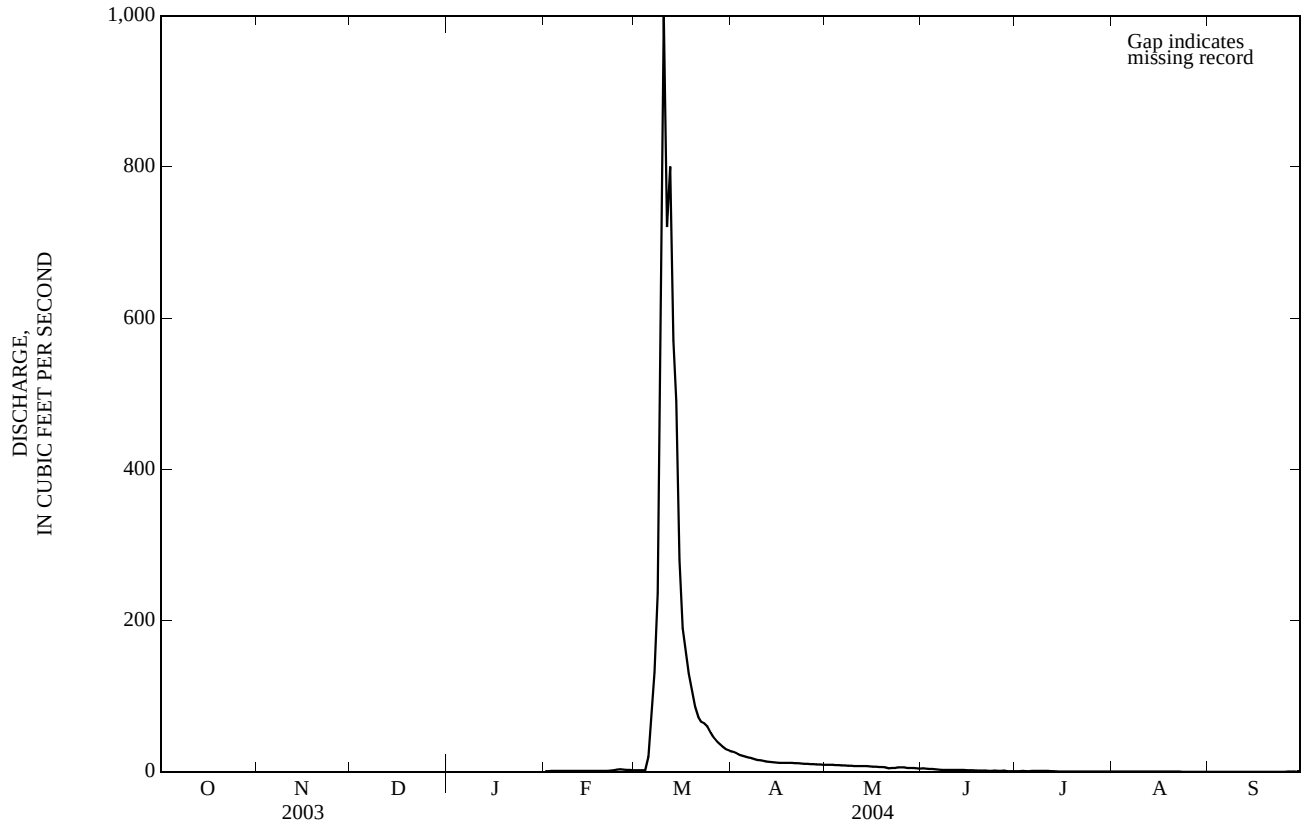
MEAN	1.10	2.62	2.59	4.40	26.5	122	45.7	15.3	17.8	10.1	2.04	0.68
MAX	3.29	6.34	5.13	14.7	141	609	406	50.2	125	64.2	18.4	4.72
(WY)	(1983)	(1983)	(1979)	(1983)	(1983)	(1978)	(1979)	(1999)	(1982)	(1997)	(1993)	(1986)
MIN	0.01	0.01	0.03	0.00	0.00	1.21	1.11	1.05	0.12	0.00	0.00	0.00
(WY)	(1982)	(1982)	(1982)	(1982)	(1989)	(1991)	(1991)	(1981)	(1992)	(1988)	(1985)	(1981)

SUMMARY STATISTICS WATER YEARS 1978 - 2004

ANNUAL MEAN	33.3	
HIGHEST ANNUAL MEAN	79.7	1978
LOWEST ANNUAL MEAN	2.77	1981
HIGHEST DAILY MEAN	2,500	Mar 22 1978
LOWEST DAILY MEAN	0.00	Aug 1 1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 10 1981
MAXIMUM PEAK FLOW	2,720	Mar 29 1978
MAXIMUM PEAK STAGE	19.27	Mar 22 1978
ANNUAL RUNOFF (AC-FT)	24,110	
10 PERCENT EXCEEDS	51	
50 PERCENT EXCEEDS	2.8	
90 PERCENT EXCEEDS	0.03	

e--Estimated.

06336600 BEAVER CREEK NEAR TROTTERS, ND—Continued



12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY

LOCATION.--Lat 48°59'44", long 115°10'43" (NAD 27), in NE¼SW¼SE¼ sec.1, T.37 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, 0.3 mi south of international boundary, in middle of old channel 1.9 mi upstream from Young Creek, and 6.4 mi north of Rexford.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

REMARKS.--Specific conductance probe malfunctioned during profile readings on June 16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
OCT						
16...	.5	9.4	8.1	240	13.8	76.3
16...	2	9.4	8.2	244	13.8	61.1
16...	4	9.3	8.3	247	13.8	43.8
16...	6	9.3	8.4	249	13.8	25.7
16...	8	9.3	8.4	252	13.8	13.9
16...	10	9.3	8.4	250	13.8	10.3
16...	13	9.3	8.4	252	13.8	7.00
16...	16	9.3	8.4	252	13.8	--
16...	20	9.3	8.5	251	13.8	--
16...	25	9.3	8.5	252	13.8	--
16...	30	9.2	8.5	252	13.8	--
16...	34	9.2	8.5	252	13.8	--
16...	40	9.2	8.5	252	13.8	--
16...	50	9.2	8.5	253	13.8	--
16...	60	9.1	8.5	253	13.8	--
16...	69	9.1	8.5	253	13.8	--
16...	79	9.0	8.5	263	13.6	--
16...	88	8.8	8.4	275	13.4	--
16...	98	5.8	8.0	254	9.0	--
16...	106	5.2	7.9	254	7.9	--
JUN						
16...	.5	10.1	7.5	--	16.0	71.2
16...	2	10.3	7.6	--	14.2	56.9
16...	5	10.4	7.6	--	13.5	33.9
16...	10	10.4	7.6	225	13.0	15.7
16...	15	10.5	7.6	--	12.9	6.84
16...	20	10.5	7.6	--	12.8	3.07
16...	25	10.5	7.6	--	12.8	1.37
16...	30	10.5	7.6	--	12.8	.67
16...	35	10.4	7.6	--	12.8	.33
16...	40	10.4	7.6	--	12.7	--
16...	45	10.4	7.6	--	12.7	--
16...	50	10.4	7.6	--	12.3	--
16...	55	10.4	7.6	--	12.2	--
16...	60	10.4	7.6	--	12.1	--
16...	70	10.5	7.6	--	11.9	--
16...	80	10.5	7.6	--	11.3	--
16...	90	10.5	7.6	--	11.0	--
16...	100	10.5	7.6	--	11.0	--
16...	110	10.5	7.6	--	10.9	--
16...	120	10.5	7.6	--	10.9	--
16...	125	10.5	7.6	200	10.9	--
JUL						
14...	.5	9.4	8.0	200	18.5	49.1
14...	2	9.3	8.0	200	18.5	40.2
14...	5	9.3	8.0	200	18.4	24.0
14...	10	9.3	8.0	200	18.3	12.7
14...	15	9.3	8.1	198	18.0	6.05
14...	20	9.3	8.1	198	17.0	3.32
14...	25	9.2	8.1	203	16.8	1.78
14...	30	9.1	8.1	195	16.5	1.06
14...	35	8.9	8.1	181	15.2	.63
14...	40	8.8	8.1	181	15.2	.36
14...	45	8.8	8.1	181	14.9	--
14...	50	8.8	8.0	180	14.6	--
14...	60	8.8	8.0	181	13.9	--
14...	70	8.7	8.0	195	13.5	--
14...	80	8.7	8.0	205	12.4	--
14...	90	8.8	7.9	213	10.2	--
14...	100	8.9	8.2	240	8.2	--
14...	110	8.5	7.9	253	7.1	--
14...	120	8.4	7.8	255	6.8	--
14...	130	8.3	7.8	255	6.7	--
14...	132	8.3	7.8	256	6.7	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
AUG						
27...	.5	8.0	7.0	233	19.6	69.97
27...	2	8.0	7.1	232	19.6	58.02
27...	5	8.0	7.1	232	19.6	37.03
27...	10	7.9	7.2	232	19.6	21.31
27...	15	7.9	7.2	232	19.6	12.83
27...	20	7.9	7.3	231	19.6	8.51
27...	25	7.8	7.3	231	19.6	5.19
27...	30	7.8	7.4	231	19.6	3.21
27...	35	7.8	7.4	231	19.6	2.04
27...	40	7.8	7.4	231	19.6	1.28
27...	45	7.8	7.5	231	19.6	.82
27...	50	7.7	7.5	231	19.5	.50
27...	55	7.6	7.5	235	19.4	--
27...	60	7.4	7.5	242	10.0	--
27...	65	7.3	7.5	259	17.8	--
27...	70	6.5	7.4	251	16.0	--
27...	75	6.1	7.3	234	14.2	--
27...	80	6.9	7.4	215	12.7	--
27...	85	7.0	7.4	218	11.9	--
27...	90	7.0	7.4	221	11.3	--
27...	95	6.8	7.3	226	10.9	--
27...	100	6.6	7.3	232	10.1	--
27...	105	6.4	7.3	237	9.8	--
27...	110	6.2	7.3	248	9.0	--
27...	115	5.8	7.3	254	8.6	--
27...	120	5.7	7.2	260	8.2	--
27...	124	5.6	7.2	262	8.0	--
SEP						
23...	.5	8.6	8.1	232	15.8	47.64
23...	2.0	8.5	8.1	231	15.8	42.36
23...	5.0	8.5	8.1	231	15.8	27.26
23...	10	8.5	8.1	231	15.8	13.21
23...	15	8.5	8.1	231	15.8	6.98
23...	20	8.5	8.1	231	15.8	4.36
23...	25	8.5	8.1	230	15.8	2.63
23...	30	8.5	8.1	230	15.8	1.65
23...	35	8.5	8.2	230	15.8	1.02
23...	40	8.4	8.2	231	15.8	.67
23...	45	8.4	8.2	230	15.8	.44
23...	50	8.4	8.2	230	15.8	--
23...	55	8.4	8.2	230	15.8	--
23...	60	8.4	8.2	231	15.7	--
23...	65	8.4	8.2	231	15.6	--
23...	70	8.4	8.2	231	15.6	--
23...	80	8.4	8.2	232	15.2	--
23...	90	8.6	8.2	237	13.5	--
23...	100	8.7	8.2	238	12.7	--
23...	110	8.7	8.2	238	12.6	--
23...	120	8.0	8.1	240	11.8	--
23...	127	5.8	8.0	243	10.1	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sampling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intnsty 400-700 nm, uE/m2/s (00200)	Light attenuation coefficient, alpha/m (70971)	Transparency water unfltrd secchi disc feet (49701)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Temperature, air, deg C (00020)
OCT											
16...	0930	10	100	20.0	82.8	.21	11.0	691	9.3	99	12.0
16...	1000	106	--	--	--	--	--	--	5.2	--	--
JUN											
16...	1200	10	20	27.0	1,960	.16	8.5	699	10.4	108	17.5
16...	1230	125	--	--	--	--	--	--	10.5	--	--
JUL											
14...	0945	10	0	30.5	1,870	.12	14.4	695	9.3	109	20.0
14...	1015	132	--	--	--	--	--	--	8.3	--	--
AUG											
27...	0945	10	90	43.0	343	.10	10.5	698	7.9	94	17.0
27...	1015	124	--	--	--	--	--	--	5.6	--	--
SEP											
23...	0930	10	50	35.5	1,060	.11	12.4	695	8.5	94	16.0
23...	1000	127	--	--	--	--	--	--	5.8	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)
OCT						
16...	2.9	E.10	<.010	E.012	<.006	.006
16...	2.8	E.08	<.010	E.012	<.006	.006
JUN						
16...	4.3	.13	<.010	.106	<.006	.012
16...	4.1	E.05	E.006	.128	<.006	.008
JUL						
14...	3.9	.11	<.010	.043	<.006	E.002
14...	5.3	E.07	E.005	.156	<.006	E.004
AUG						
27...	3.5	E.08	E.007	.022	<.006	.007
27...	5.8	E.06	<.010	.195	<.006	E.003
SEP						
23...	3.6	.11	<.010	.039	<.006	.005
23...	4.4	.11	E.007	.109	<.006	.008

Date	Time	Sampling depth, feet (00003)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
JUN									
16...	1200	10.0	110	32.4	8.10	.45	.1	2.97	94
16...	1230	125	100	29.8	7.05	.34	.1	1.87	88
AUG									
27...	0945	10.0	120	32.8	8.21	.38	.1	2.58	97
27...	1015	124	130	38.1	9.25	.48	.1	3.62	110

E--Estimated.

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)
JUN					
16...	2.48	<.2	18.6	126	.17
16...	1.63	<.2	13.9	112	.15
AUG					
27...	1.89	<.2	18.5	126	.17
27...	2.46	<.2	21.9	148	.20

Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)	Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)
JUN			AUG		
16...	.5	1.4	27...	.5	1.1
JUL			SEP		
14...	.3	.6	23...	.6	1.2

12301300 TOBACCO RIVER NEAR EUREKA, MT

LOCATION.--Lat 48°53'37", long 115°05'13" (NAD 27), in NW¼SE¼SE¼ sec.9, T.36 N., R.27 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.2 mi upstream from Indian Creek, 1.8 mi northwest of Eureka, and 2.8 mi upstream from Lake Koocanusa flow line.

DRAINAGE AREA.--440 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 2,518.85 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions for irrigation of about 4,500 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 2,810 ft^3/s, from slope-area measurement of peak flow at site 1.5 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	83	69	60	66	66	316	405	452	309	92	222
2	65	90	79	56	59	64	277	426	427	333	85	211
3	64	85	79	e56	65	58	254	525	426	303	86	205
4	64	70	72	e49	62	64	271	590	458	302	90	195
5	64	67	76	e46	66	62	335	589	524	309	85	188
6	63	65	82	e45	62	61	392	520	606	278	110	177
7	62	58	81	e46	59	59	431	477	641	263	133	174
8	63	62	76	e50	57	64	491	471	562	271	127	171
9	61	71	75	e50	56	80	627	486	498	253	116	162
10	61	65	66	e50	56	84	578	467	452	236	79	156
11	62	77	e50	e52	54	82	499	439	431	222	73	160
12	64	75	65	e52	57	83	478	402	425	211	71	180
13	65	72	74	61	e55	84	508	368	413	197	63	193
14	65	69	78	61	e57	84	642	341	399	193	60	238
15	65	71	75	64	e60	82	814	320	378	192	56	329
16	69	72	72	65	59	82	681	313	355	183	53	361
17	78	74	71	63	56	87	566	317	339	175	47	370
18	74	77	63	62	62	97	494	331	322	170	44	410
19	70	98	63	62	67	114	449	358	309	191	51	443
20	70	106	56	61	64	118	417	396	300	176	59	414
21	97	95	70	59	64	121	390	477	291	156	53	369
22	97	62	69	59	59	119	366	501	282	147	54	331
23	88	77	65	59	57	130	350	483	284	137	94	300
24	81	87	62	60	60	158	355	421	284	128	142	277
25	77	83	66	55	61	183	353	380	285	121	284	258
26	73	80	66	57	74	199	349	440	298	114	385	242
27	71	75	64	59	82	201	379	496	298	110	331	228
28	77	77	60	57	75	187	450	530	286	106	299	219
29	123	82	60	61	69	180	465	577	297	104	287	209
30	99	82	e60	77	---	199	426	530	318	101	263	202
31	77	---	59	78	---	269	---	488	---	97	240	---
TOTAL	2,273	2,307	2,123	1,792	1,800	3,521	13,403	13,864	11,640	6,088	4,012	7,594
MEAN	73.3	76.9	68.5	57.8	62.1	114	447	447	388	196	129	253
MAX	123	106	82	78	82	269	814	590	641	333	385	443
MIN	61	58	50	45	54	58	254	313	282	97	44	156
AC-FT	4,510	4,580	4,210	3,550	3,570	6,980	26,580	27,500	23,090	12,080	7,960	15,060
CFSM	0.17	0.17	0.16	0.13	0.14	0.26	1.02	1.02	0.88	0.45	0.29	0.58
IN.	0.19	0.20	0.18	0.15	0.15	0.30	1.13	1.17	0.98	0.51	0.34	0.64

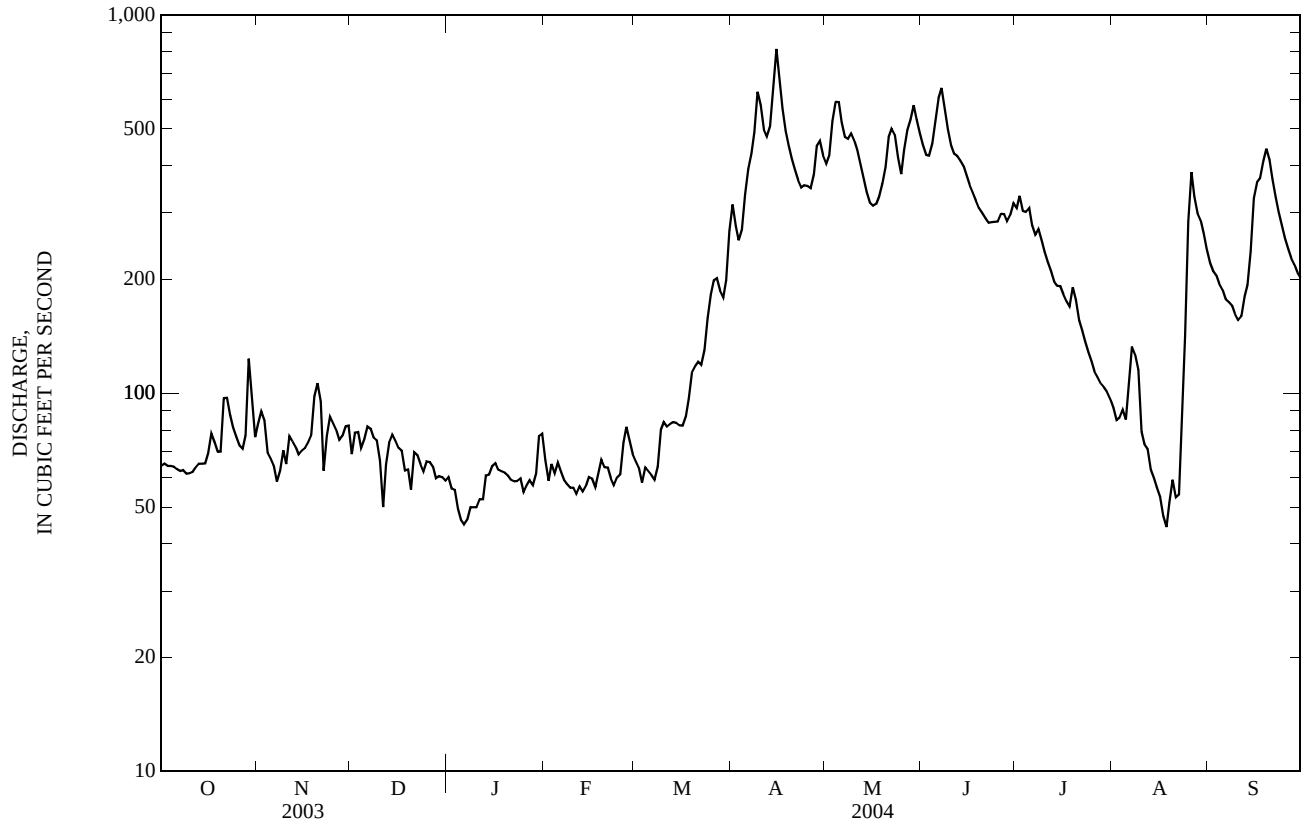
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2004, BY WATER YEAR (WY)

MEAN	112	130	113	100	109	155	424	763	730	305	126	110
MAX	343	368	415	248	492	422	883	1,469	1,498	576	235	253
(WY)	(1960)	(1990)	(1996)	(1974)	(1996)	(1972)	(1996)	(1997)	(1974)	(1974)	(1993)	(2004)
MIN	50.7	56.3	60.3	53.5	49.9	66.6	140	371	196	79.7	36.7	28.9
(WY)	(1995)	(1995)	(2002)	(1989)	(1988)	(2001)	(1970)	(2001)	(1992)	(1977)	(1988)	(2001)

12301300 TOBACCO RIVER NEAR EUREKA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1959 - 2004	
ANNUAL TOTAL	65,290		70,417			
ANNUAL MEAN	179		192		265	
HIGHEST ANNUAL MEAN					496	1996
LOWEST ANNUAL MEAN					109	2001
HIGHEST DAILY MEAN	860	May 30	814	Apr 15	2,510	May 13, 1991
LOWEST DAILY MEAN	33	Sep 7	44	Aug 18	20	Jan 11, 1963
ANNUAL SEVEN-DAY MINIMUM	36	Sep 2	48	Jan 4	23	Sep 6, 1988
MAXIMUM PEAK FLOW			857	Apr 15	3,180	May 13, 1991
MAXIMUM PEAK STAGE			4.17	Apr 15	7.16	May 13, 1991
INSTANTANEOUS LOW FLOW			a32	Dec 11	22	Feb 7, 2001
ANNUAL RUNOFF (AC-FT)	129,500		139,700		191,900	
ANNUAL RUNOFF (CFSM)	0.407		0.437		0.602	
ANNUAL RUNOFF (INCHES)	5.52		5.95		8.18	
10 PERCENT EXCEEDS	503		451		699	
50 PERCENT EXCEEDS	76		97		130	
90 PERCENT EXCEEDS	51		59		67	

a--May have been lower during periods of ice affect.
e--Estimated.



12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT

LOCATION.--Lat 48°35'06", long 115°13'52" (NAD 27), in NW¼NE¼NW¼ sec.33, T.33 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel at Tenmile Creek, and 20.1 mi northeast of Libby.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
OCT						
15...	.5	9.4	8.1	225	14.0	99.04
15...	2	9.4	8.2	227	14.0	77.99
15...	5	9.4	8.2	227	14.0	54.07
15...	10	9.4	8.3	227	14.0	36.36
15...	15	9.3	8.3	231	14.0	24.40
15...	20	9.3	8.3	228	14.0	17.18
15...	25	9.3	8.4	227	14.0	10.93
15...	30	9.3	8.4	225	14.0	7.42
15...	35	9.3	8.4	226	14.0	4.90
15...	40	9.3	8.4	226	14.0	3.52
15...	45	9.2	8.4	227	14.0	2.37
15...	50	9.2	8.4	228	14.0	1.70
15...	55	9.2	8.5	227	14.0	1.20
15...	60	9.2	8.5	226	14.0	.89
15...	65	8.3	8.3	228	12.6	.62
15...	70	8.1	8.2	218	11.6	--
15...	80	7.9	8.1	220	10.4	--
15...	90	7.9	8.1	229	9.4	--
15...	100	8.2	8.0	236	8.4	--
15...	110	8.3	8.0	239	8.1	--
15...	120	8.1	8.0	241	7.7	--
15...	130	8.1	8.0	254	7.3	--
15...	140	8.1	8.0	256	7.0	--
15...	150	8.1	8.0	258	6.8	--
15...	165	8.2	8.0	260	6.3	--
15...	180	8.5	8.0	263	5.7	--
15...	195	8.6	8.0	263	5.2	--
15...	210	8.6	8.0	263	5.0	--
15...	225	8.6	8.0	263	4.8	--
15...	233	8.5	7.9	263	4.8	--
MAY						
18...	.5	9.7	7.8	271	11.7	96.47
18...	2	9.7	7.8	271	11.6	60.07
18...	5	9.7	7.9	270	11.6	31.80
18...	10	9.7	7.9	269	11.4	15.72
18...	15	9.8	7.9	269	11.2	5.92
18...	20	9.7	7.9	264	10.5	3.71
18...	25	9.6	7.9	266	10.3	1.94
18...	30	9.6	7.9	266	9.9	.97
18...	35	9.7	7.9	264	9.6	.48
18...	40	9.9	7.9	263	9.2	.20
18...	45	10.0	7.9	263	8.8	--
18...	50	10.0	7.9	263	8.5	--
18...	60	10.0	7.9	265	7.9	--
18...	70	10.2	7.9	264	7.7	--
18...	80	10.4	7.9	264	6.6	--
18...	90	10.4	7.9	263	6.3	--
18...	100	10.4	7.9	264	6.1	--
18...	110	10.4	7.9	263	5.8	--
18...	120	10.4	7.9	265	5.6	--
18...	130	10.4	7.9	265	4.9	--
18...	140	10.4	7.9	265	4.6	--
18...	150	10.3	7.9	269	4.6	--
18...	160	10.3	7.9	271	4.4	--
18...	170	10.2	7.9	272	4.2	--
18...	180	10.2	7.8	273	4.2	--
18...	190	10.2	7.8	273	4.1	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
JUN						
15...	.5	11.6	7.7	254	13.1	67.39
15...	2	11.6	7.8	254	13.1	56.22
15...	5	11.6	7.8	253	13.1	33.87
15...	10	11.6	7.8	253	13.0	18.02
15...	15	11.2	7.8	250	12.7	8.86
15...	20	10.8	7.8	249	12.5	5.12
15...	25	11.0	7.8	246	11.9	3.21
15...	30	10.8	7.8	245	11.6	2.0
15...	35	10.8	7.8	244	11.5	.34
15...	40	10.7	7.8	244	10.8	.86
15...	45	10.7	7.8	245	10.6	.54
15...	50	10.7	7.8	245	10.5	.36
15...	60	10.6	7.8	245	10.2	--
15...	70	11.0	7.8	249	9.8	--
15...	80	11.2	7.7	256	8.9	--
15...	90	11.5	7.7	259	7.9	--
15...	100	11.6	7.7	259	7.7	--
15...	110	11.8	7.7	260	7.0	--
15...	120	11.9	7.7	261	6.7	--
15...	130	11.9	7.7	262	6.4	--
15...	140	11.9	7.7	263	6.0	--
15...	150	11.9	7.7	264	5.8	--
15...	160	11.9	7.7	265	5.4	--
15...	170	11.9	7.7	264	5.2	--
15...	180	12.0	7.7	266	4.8	--
15...	190	11.9	7.7	267	4.6	--
15...	200	11.9	7.7	268	4.5	--
15...	210	11.9	7.7	268	4.4	--
15...	220	11.8	7.6	269	4.4	--
15...	230	11.7	7.6	270	4.2	--
15...	240	11.6	7.6	269	4.2	--
15...	250	11.6	7.6	270	4.1	--
15...	260	11.6	7.6	270	4.1	--
15...	262	11.5	7.6	270	4.1	--
JUL						
13...	.5	9.7	7.5	229	17.4	37.45
13...	2	9.5	7.6	229	17.4	20.33
13...	5	9.6	7.6	229	17.4	13.12
13...	10	9.6	7.6	229	17.4	10.41
13...	15	9.6	7.7	229	17.3	7.49
13...	20	9.3	7.7	228	17.2	5.16
13...	25	9.3	7.8	221	16.6	3.64
13...	30	9.3	7.8	217	16.0	2.33
13...	35	9.4	7.8	208	15.1	1.48
13...	40	9.2	7.8	202	14.0	.93
13...	45	9.2	7.8	202	13.7	.61
13...	50	9.2	7.7	202	13.0	--
13...	60	9.1	7.7	201	12.3	--
13...	70	9.1	7.7	202	11.8	--
13...	80	9.1	7.7	213	11.5	--
13...	90	9.0	7.7	219	11.1	--
13...	100	9.1	7.7	235	10.5	--
13...	115	9.4	7.6	244	9.5	--
13...	130	9.9	7.6	248	8.3	--
13...	145	10.1	7.6	250	7.3	--
13...	160	10.1	7.6	254	6.3	--
13...	175	10.1	7.6	255	5.8	--
13...	190	10.4	7.6	255	5.1	--
13...	205	10.4	7.6	255	4.8	--
13...	220	10.3	7.6	257	4.6	--
13...	235	10.1	7.6	259	4.3	--
13...	250	10.0	7.6	260	4.3	--
13...	265	10.0	7.6	260	4.2	--
13...	278	9.9	7.6	260	4.3	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
AUG						
26...	.5	8.4	7.8	221	19.7	70.53
26...	2	8.3	7.8	221	19.7	60.0
26...	5	8.3	7.8	221	19.7	49.05
26...	10	8.3	7.9	221	19.7	30.79
26...	15	8.3	7.9	221	19.7	21.74
26...	20	8.2	7.9	221	19.5	18.37
26...	25	8.0	7.9	220	19.0	13.0
26...	30	7.9	7.9	219	16.5	9.53
26...	35	7.8	7.9	218	16.2	6.84
26...	40	7.8	7.8	216	15.5	5.05
26...	45	8.0	7.8	213	14.6	3.58
26...	50	8.0	7.8	210	14.1	2.58
26...	60	8.0	7.8	211	13.1	1.21
26...	70	7.8	7.8	220	12.0	.63
26...	80	7.7	7.7	225	11.3	--
26...	90	7.8	7.7	232	10.8	--
26...	100	7.9	7.7	248	9.9	--
26...	110	8.2	7.7	252	9.0	--
26...	120	8.4	7.7	260	8.0	--
26...	130	8.6	7.7	263	7.4	--
26...	140	8.6	7.7	265	6.8	--
26...	150	8.7	7.7	266	6.6	--
26...	160	8.8	7.7	268	6.2	--
26...	170	8.8	7.7	269	5.9	--
26...	180	8.9	7.7	272	5.3	--
26...	190	8.9	7.7	272	5.1	--
26...	200	9.0	7.6	273	5.0	--
26...	210	8.9	7.6	273	4.8	--
26...	220	8.8	7.6	273	4.6	--
26...	230	8.8	7.6	274	4.6	--
26...	240	8.8	7.6	275	4.6	--
26...	250	8.8	7.6	275	4.5	--
26...	260	8.8	7.6	275	4.5	--
26...	266	8.8	7.6	275	4.5	--
SEP						
22...	.5	8.7	7.6	220	15.7	35.71
22...	2.0	8.7	7.7	220	15.7	43.47
22...	5	8.6	7.7	220	15.7	17.33
22...	10	8.6	7.8	220	15.7	15.81
22...	15	8.6	7.8	220	15.7	13.56
22...	20	8.6	7.8	220	15.7	10.93
22...	25	8.6	7.8	220	15.7	8.97
22...	30	8.6	7.8	220	15.7	6.98
22...	35	8.6	7.8	220	15.7	4.51
22...	40	8.5	7.9	220	15.7	3.30
22...	45	8.4	7.9	222	15.6	3.07
22...	50	7.6	7.8	228	14.4	1.52
22...	55	7.7	7.8	237	14.0	1.03
22...	60	7.6	7.7	238	13.9	.76
22...	70	7.4	7.7	229	13.5	.49
22...	80	7.3	7.7	218	12.7	--
22...	90	7.4	7.7	217	12.1	--
22...	100	7.5	7.7	224	11.2	--
22...	110	7.7	7.7	237	10.1	--
22...	120	8.0	7.7	248	9.2	--
22...	130	8.1	7.7	253	8.2	--
22...	140	8.2	7.7	256	7.6	--
22...	150	8.5	7.7	261	6.7	--
22...	160	8.6	7.6	262	6.4	--
22...	170	8.6	7.6	264	6.2	--
22...	180	8.7	7.6	265	5.7	--
22...	190	8.7	7.6	267	5.5	--
22...	200	8.7	7.6	267	5.4	--
22...	210	8.8	7.6	267	5.2	--
22...	220	8.8	7.6	268	5.1	--
22...	230	8.8	7.6	269	5.0	--
22...	240	8.7	7.6	269	4.9	--
22...	250	8.7	7.6	268	4.8	--
22...	260	8.6	7.6	269	4.7	--
22...	268	8.6	7.6	270	4.7	--

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sampling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intnsty 400-700 nm, uE/m2/s (00200)	Light attenuation coefficient, alpha/m (70971)	Transparency water unfltrd secchi disc feet (49701)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Temperature, air, deg C (00020)
OCT											
15...	1130	10	100	58.0	418	.08	23.5	691	9.4	101	12.0
15...	1200	233	--	--	--	--	--	--	8.5	--	--
MAY											
18...	0915	10	30	30.0	1,130	.15	9.5	691	9.7	98	17.5
18...	0945	190	--	--	--	--	--	--	10.2	--	--
JUN											
15...	0930	10	90	38.0	555	.10	9.6	698	11.6	120	14.0
15...	1000	262	--	--	--	--	--	--	11.5	--	--
JUL											
13...	1145	10	90	39.0	1,400	.08	14.2	692	9.6	111	21.5
13...	1215	278	--	--	--	--	--	--	9.9	--	--
AUG											
26...	1100	10	100	63.0	190	.07	16.3	694	8.3	100	15.0
26...	1139	266	--	--	--	--	--	--	8.8	--	--
SEP											
22...	1130	10	85	55.5	658	.06	20.0	697	8.6	95	15.0
22...	1205	268	--	--	--	--	--	--	8.6	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)
OCT						
15...	2.6	E.09	<.010	E.013	<.006	.006
15...	4.7	E.07	<.010	.146	<.006	E.004
MAY						
18...	4.4	.11	<.010	.110	<.006	.006
18...	4.3	E.07	E.007	.115	<.006	E.003
JUN						
15...	4.0	.10	<.010	.060	<.006	E.003
15...	4.8	E.06	<.010	.133	<.006	E.002
JUL						
13...	4.0	E.08	<.010	.048	<.006	E.003
13...	4.8	E.06	<.010	.138	<.006	E.003
AUG						
26...	3.4	E.09	<.010	E.009	<.006	E.003
26...	5.1	<.10	<.010	.151	<.006	E.004
SEP						
22...	3.6	.12	<.010	.023	<.006	E.003
22...	5.4	E.10	<.010	.154	<.006	E.003

Date	Time	Sampling depth, feet (00003)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
MAY													
18...	0915	10	130	36.6	9.31	.48	.1	3.60	109	3.42	<.2	23.5	147
18...	0945	190	140	38.4	10.6	.52	.1	3.81	114	3.48	<.2	24.5	155
AUG													
26...	1100	10	110	31.4	7.77	.36	.1	2.52	93	1.78	<.2	17.1	120
26...	1139	266	150	40.1	11.1	.55	.2	4.58	115	3.14	<.2	26.4	161

E--Estimated.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Lead, water, fltrd, ug/L (01049)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Zinc, water, fltrd, ug/L (01090)
MAY										
18...	.20	3	.4	<.04	1.0	.6	<.08	E.02	.97	.8
18...	.21	<2	.4	<.04	<.8	.5	<.08	E.01	.96	E.4
AUG										
26...	.16	2	.3	<.04	<.8	.4	<.08	E.01	.53	<.6
26...	.22	<2	.4	<.04	<.8	.4	<.08	E.01	.66	<.6

Date	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a, phyto-plank-ton, ug/L (70953)	Date	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a, phyto-plank-ton, ug/L (70953)
OCT			JUL		
15...	1.0	2.3	13...	.5	1.7
MAY			AUG		
18...	.8	2.2	26...	.7	1.4
JUN			SEP		
15...	1.0	2.8	22...	.6	1.4

E--Estimated.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT

LOCATION.--Lat 48°24'43", long 115°18'33" (NAD 27), in SW¼NW¼NE¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel 0.2 mi upstream from Libby Dam, and 11.6 mi east of Libby.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
OCT						
15...	.5	9.1	7.8	224	13.6	71.05
15...	2	9.0	8.0	224	13.6	60.53
15...	5	9.0	8.1	223	13.6	41.15
15...	10	8.9	8.1	223	13.6	25.84
15...	15	8.9	8.1	223	13.6	17.27
15...	20	8.9	8.2	221	13.6	11.17
15...	25	8.9	8.2	222	13.6	7.15
15...	--	8.9	8.2	223	13.6	4.67
15...	35	8.8	8.2	221	13.6	3.01
15...	40	8.8	8.3	225	13.6	2.01
15...	45	8.8	8.3	224	13.6	1.36
15...	50	8.8	8.3	224	13.6	.84
15...	55	8.0	8.2	227	12.3	.55
15...	60	7.8	8.1	219	11.7	.36
15...	65	7.7	8.0	204	11.4	--
15...	70	7.7	8.0	219	10.8	--
15...	80	7.8	8.0	216	10.3	--
15...	90	8.0	7.9	230	9.6	--
15...	100	8.3	7.9	243	8.8	--
15...	115	8.7	7.9	254	7.7	--
15...	130	9.0	7.9	255	7.1	--
15...	145	9.1	7.9	254	6.6	--
15...	160	9.1	7.9	262	6.3	--
15...	175	9.2	7.9	259	5.7	--
15...	190	9.2	7.9	259	5.0	--
15...	205	9.1	7.9	259	4.7	--
15...	220	9.0	7.9	263	4.5	--
15...	235	9.0	7.9	263	4.3	--
15...	250	8.9	7.9	267	4.2	--
15...	265	8.8	7.9	265	4.2	--
15...	280	8.6	7.8	265	4.1	--
15...	295	8.3	7.8	266	4.1	--
15...	305	8.0	7.8	266	4.1	--
MAY						
18...	.5	9.4	7.0	257	11.6	71.80
18...	2	9.4	7.0	257	11.6	56.66
18...	5	9.5	7.0	257	11.6	41.47
18...	10	9.7	7.0	256	11.1	23.82
18...	15	9.8	7.1	256	10.6	13.52
18...	20	9.9	7.1	256	9.6	9.01
18...	25	9.9	7.1	255	9.5	5.19
18...	30	9.9	7.1	255	9.3	3.22
18...	35	9.9	7.1	255	9.1	2.07
18...	40	9.9	7.2	256	9.1	1.45
18...	45	9.9	7.2	256	8.9	1.02
18...	50	9.9	7.2	256	8.9	.74
18...	60	10.1	7.2	256	7.7	.34
18...	70	10.1	7.2	256	7.5	.17
18...	80	10.2	7.2	254	6.8	.08
18...	90	10.2	7.2	255	6.3	--
18...	100	10.2	7.2	255	5.6	--
18...	110	10.2	7.2	255	5.3	--
18...	120	10.3	7.3	257	4.9	--
18...	130	10.2	7.3	257	4.7	--
18...	140	10.1	7.3	259	4.4	--
18...	150	10.1	7.3	264	4.0	--
18...	160	10.0	7.2	266	3.9	--
18...	170	9.9	7.2	267	3.8	--
18...	180	9.9	7.2	268	3.8	--
18...	195	9.9	7.3	269	3.7	--
18...	210	9.9	7.3	270	3.7	--
18...	225	9.8	7.3	270	3.7	--
18...	240	9.8	7.3	271	3.7	--
18...	255	9.8	7.3	271	3.7	--
18...	270	9.8	7.3	271	3.7	--
18...	285	9.7	7.3	272	3.7	--
18...	288	9.7	7.3	272	3.7	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
JUN						
15...	.5	11.5	7.8	254	11.7	73.47
15...	2	11.4	7.8	254	11.5	60.65
15...	5	11.4	7.8	253	11.3	43.46
15...	10	11.2	7.9	252	11.2	25.91
15...	15	11.1	7.9	253	10.9	14.78
15...	20	11.1	7.9	253	10.8	9.39
15...	25	11.0	7.9	253	10.6	5.95
15...	30	11.0	7.9	254	10.6	3.67
15...	35	11.0	7.9	254	10.4	2.29
15...	40	10.9	7.9	254	10.3	1.55
15...	45	10.9	7.9	255	10.1	1.02
15...	50	11.0	7.9	255	9.9	.68
15...	55	11.0	7.9	255	9.8	.46
15...	60	11.0	7.9	255	9.8	--
15...	70	11.1	7.9	255	9.6	--
15...	80	11.2	7.9	256	9.1	--
15...	90	11.5	7.9	257	8.1	--
15...	100	11.8	7.9	257	7.1	--
15...	115	12.0	7.9	257	6.5	--
15...	130	12.1	7.8	257	6.1	--
15...	145	12.1	7.8	257	5.7	--
15...	160	12.2	7.8	257	5.1	--
15...	175	12.2	7.8	262	4.4	--
15...	190	12.1	7.8	263	4.2	--
15...	205	12.0	7.8	266	4.0	--
15...	220	11.9	7.8	268	3.9	--
15...	235	11.8	7.8	271	3.8	--
15...	250	11.7	7.8	272	3.8	--
15...	265	11.7	7.8	272	3.8	--
15...	280	11.6	7.9	272	3.8	--
15...	295	11.5	7.8	273	3.8	--
15...	310	11.3	7.8	274	3.8	--
15...	320	10.6	7.7	277	3.8	--
JUL						
13...	.5	9.3	8.1	234	17.9	53.43
13...	2	9.3	8.1	234	17.9	32.62
13...	5	9.4	8.1	234	17.7	19.09
13...	10	9.5	8.1	233	17.3	12.64
13...	15	9.6	8.1	232	16.7	7.62
13...	20	9.7	8.1	229	15.5	4.88
13...	25	9.7	8.1	228	15.4	4.46
13...	30	9.7	8.1	226	14.7	4.19
13...	35	9.7	8.1	226	14.3	1.76
13...	40	9.6	8.1	226	14.0	1.13
13...	45	9.6	8.1	227	13.7	.45
13...	50	9.5	8.1	223	13.1	--
13...	60	9.2	8.0	225	12.4	--
13...	75	9.1	8.0	232	11.6	--
13...	90	9.0	8.0	239	10.9	--
13...	105	9.3	8.0	245	9.8	--
13...	120	10.2	7.9	248	7.5	--
13...	135	10.4	7.9	248	6.5	--
13...	150	10.4	7.9	249	6.0	--
13...	165	10.5	7.9	249	5.5	--
13...	180	10.6	7.9	251	4.9	--
13...	195	10.6	7.9	252	4.5	--
13...	210	10.6	7.9	256	4.2	--
13...	225	10.6	7.9	259	4.1	--
13...	240	10.4	7.9	262	4.0	--
13...	255	10.2	7.9	262	3.9	--
13...	270	10.1	7.9	262	3.9	--
13...	285	10.1	7.9	263	3.9	--
13...	300	9.9	7.8	263	3.9	--
13...	315	9.8	7.8	263	3.9	--
13...	326	9.7	7.8	264	3.9	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sampling depth, feet (00003)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Incident light remaining at depth, percent (00031)
AUG						
26...	.5	9.1	8.0	217	18.1	69.03
26...	2	9.1	8.0	217	18.1	47.77
26...	5	9.1	8.1	217	18.0	21.04
26...	10	9.1	8.0	217	17.8	18.26
26...	15	9.1	8.0	216	17.4	15.27
26...	20	9.0	8.1	216	17.0	10.01
26...	25	9.1	8.1	215	16.7	5.55
26...	30	9.0	8.1	215	16.5	4.28
26...	35	9.0	8.0	215	16.2	2.76
26...	40	8.8	8.0	213	15.2	2.0
26...	45	8.7	8.0	213	14.5	1.44
26...	50	8.4	8.0	212	13.8	1.18
26...	60	8.2	8.0	223	12.8	.82
26...	70	7.9	7.9	230	12.1	--
26...	80	7.8	7.9	236	11.6	--
26...	90	7.8	7.9	246	11.1	--
26...	100	7.9	7.9	252	10.6	--
26...	115	8.2	7.8	257	9.7	--
26...	130	8.9	7.8	262	8.0	--
26...	145	9.2	7.8	263	7.2	--
26...	160	9.5	7.8	264	6.3	--
26...	175	9.5	7.8	266	5.9	--
26...	190	9.5	7.8	268	5.4	--
26...	205	9.5	7.8	269	5.0	--
26...	220	9.5	7.8	272	4.6	--
26...	235	9.5	7.8	272	4.4	--
26...	250	9.4	7.8	274	4.2	--
26...	265	9.3	7.8	276	4.1	--
26...	280	9.2	7.8	277	4.0	--
26...	295	9.0	7.8	278	4.0	--
26...	310	8.7	7.8	280	4.0	--
26...	316	8.4	7.7	281	4.0	--
SEP						
22...	.5	8.6	8.0	217	15.5	95.21
22...	2.0	8.6	8.1	217	15.5	52.10
22...	5.0	8.5	8.1	217	15.4	33.96
22...	10	8.5	8.1	217	15.4	15.53
22...	15	8.5	8.1	217	15.4	12.93
22...	20	8.5	8.1	216	15.3	9.99
22...	25	8.5	8.1	217	15.3	7.58
22...	30	7.7	8.0	216	14.8	5.66
22...	35	7.3	8.0	216	14.7	3.88
22...	40	7.4	8.0	215	14.6	2.45
22...	45	7.2	7.9	216	14.5	1.76
22...	50	7.3	7.9	214	14.2	1.23
22...	60	7.4	7.9	210	13.9	.67
22...	70	7.5	7.9	211	13.1	--
22...	80	7.6	7.9	214	12.7	--
22...	90	7.5	7.9	220	12.1	--
22...	100	7.5	7.8	233	11.2	--
22...	115	7.8	7.8	249	10.2	--
22...	130	8.4	7.8	257	8.7	--
22...	145	9.0	7.8	259	7.6	--
22...	160	9.3	7.8	260	6.8	--
22...	175	9.4	7.8	262	6.3	--
22...	190	9.4	7.8	264	5.7	--
22...	205	9.4	7.8	266	5.1	--
22...	220	9.3	7.8	267	4.9	--
22...	235	9.3	7.8	269	4.5	--
22...	250	9.2	7.8	270	4.3	--
22...	265	9.2	7.8	273	4.2	--
22...	280	9.2	7.8	272	4.1	--
22...	295	9.0	7.8	274	4.1	--
22...	310	8.7	7.8	275	4.0	--
22...	318	8.4	7.8	276	4.0	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sampling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intnsty 400-700 nm, uE/m2/s (00200)	Light attenuation coefficient, alpha/m (70971)	Transparency water unfltrd secchi disc feet (49701)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Temperature, air, deg C (00020)
OCT											
15...	1400	10	100	48.0	418	.09	16.3	690	8.9	95	12.0
15...	1430	305	--	--	--	--	--	--	8.0	--	--
MAY											
18...	1200	10	80	45.0	1,550	.09	17.0	691	9.7	97	17.5
18...	1230	288	--	--	--	--	--	--	9.7	--	--
JUN											
15...	1130	10	75	45.5	1,950	.09	17.8	698	11.2	112	15.0
15...	1200	320	--	--	--	--	--	--	10.6	--	--
JUL											
13...	1400	10	100	41.0	1,460	.09	16.1	693	9.5	109	23.5
13...	1430	326	--	--	--	--	--	--	9.7	--	--
AUG											
26...	1400	10	80	52.0	1,370	.07	--	695	9.1	105	20.5
26...	1430	316	--	--	--	--	--	--	8.4	--	--
SEP											
22...	1330	10	70	53.5	689	.08	17.0	696	8.5	93	18.5
22...	1400	318	--	--	--	--	--	--	8.4	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)
OCT						
15...	2.8	E.08	<.010	.024	<.006	E.004
15...	4.7	.17	<.010	.154	<.006	.006
MAY						
18...	4.3	E.09	<.010	.079	<.006	.006
18...	4.5	E.06	E.009	.125	<.006	<.004
JUN						
15...	4.4	E.08	E.008	.094	<.006	<.004
15...	4.9	<.10	E.008	.138	<.006	E.004
JUL						
13...	4.0	.12	<.010	.054	<.006	E.002
13...	4.9	E.08	<.010	.142	<.006	E.003
AUG						
26...	3.5	E.08	E.005	.038	<.006	.004
26...	5.3	<.10	E.006	.157	<.006	E.003
SEP						
22...	3.6	E.10	<.010	.035	<.006	.004
22...	5.0	.13	<.010	.150	<.006	E.002

Date	Time	Sampling depth, feet (00003)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
MAY									
18...	1200	10	120	34.8	9.06	.53	.1	3.76	109
18...	1230	288	140	39.3	10.9	.55	.1	4.07	116
AUG									
26...	1400	10	110	30.7	7.55	.28	.1	2.35	92
26...	1430	316	140	39.2	11.1	.53	.2	4.49	118

E--Estimated.

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)
MAY					
18...	3.24	<.2	22.6	144	.20
18...	3.70	<.2	25.3	158	.22
AUG					
26...	1.70	<.2	16.7	118	.16
26...	3.28	<.2	27.3	162	.22

Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)	Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)
OCT			JUL		
15...	.6	1.9	13...	1.5	E1.8
MAY			AUG		
18...	.6	1.7	26...	.7	1.4
JUN			SEP		
15...	.5	1.1	22...	.5	1.4

E--Estimated.

12301920 LAKE KOOCANUSA NEAR LIBBY, MT

LOCATION.--Lat 48°24'38", long 115°18'47" (NAD 27), in NW¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, in block 18 of Libby Dam on Kootenai River, 11 mi east of Libby and at river mile 221.8.
DRAINAGE AREA.--8,985 mi^2, approximately.
PERIOD OF RECORD.--March 1972 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 2,201.5 (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to July 2, 1973, nonrecording gage on upstream face of dam at same elevation.
REMARKS.--Reservoir and flow completely controlled by gravity type dam with taintor gated spillway; construction began in 1967; completed in 1973. Storage began Mar. 21, 1972. Usable capacity, 5,748,000 acre-ft between elevation 2,201.5 ft, bottom of sluice gate, and 2,459 ft, controlled spillway elevation. Dead storage, 121,200 acre-ft below elevation 2,201.5 ft. Minimum operating level, 768,700 acre-ft, elevation 2,287.0 ft for on-site power generation. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.
COOPERATION.--Capacity table and elevations provided by U.S. Army Corps of Engineers.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,753,000 acre-ft, Aug. 6, 1976 and Aug. 16, 1982, maximum elevation, 2,459.12 ft, Aug. 16, 1982; minimum contents observed since normal low operating level reached in May 1972, 139,600 acre-ft, Dec. 16-21, 1972, elevation, 2,226.5 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 5,352,000 acre-ft, July 22, elevation, 2,450.33 ft; minimum, 3,313,000 acre-ft, Mar. 24, elevation, 2,398.34 ft.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

Elevation	Contents
2,360	2,232,000
2,380	2,765,000
2,400	3,367,000
2,420	4,085,000
2,440	4,899,000
2,460	5,795,000

ELEVATION ABOVE NGVD 1929, FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,433.76	2,436.64	2,429.41	2,410.56	2,402.57	2,399.76	2,398.80	2,410.60	2,431.59	2,446.54	2,448.87	2,444.98
2	2,433.72	2,436.73	2,428.52	2,410.08	2,402.50	2,399.66	2,398.93	2,411.31	2,431.77	2,446.99	2,448.65	2,444.87
3	2,433.63	2,436.78	2,427.72	2,409.66	2,402.35	2,399.55	2,399.02	2,412.15	2,431.96	2,447.43	2,448.48	2,444.84
4	2,433.60	2,436.72	2,426.96	2,409.23	2,402.30	2,399.50	2,399.14	2,413.16	2,432.24	2,447.86	2,448.26	2,444.88
5	2,433.55	2,436.75	2,426.11	2,408.67	2,402.15	2,399.36	2,399.32	2,414.21	2,432.83	2,448.19	2,448.00	2,444.94
6	2,433.51	2,436.72	2,425.30	2,408.04	2,402.04	2,399.31	2,399.47	2,415.24	2,433.60	2,448.48	2,447.85	2,444.91
7	2,433.48	2,436.67	2,424.54	2,407.52	2,401.93	2,399.14	2,399.73	2,416.12	2,434.70	2,448.72	2,447.61	2,444.82
8	2,433.38	2,436.66	2,423.66	2,406.93	2,401.85	2,399.05	2,400.10	2,416.86	2,435.47	2,449.14	2,447.43	2,444.76
9	2,433.32	2,436.54	2,422.84	2,406.39	2,401.76	2,398.98	2,400.48	2,417.70	2,436.18	2,449.43	2,447.27	2,444.66
10	2,433.26	2,436.52	2,421.99	2,405.78	2,401.70	2,398.96	2,400.84	2,418.54	2,436.73	2,449.62	2,447.20	2,444.68
11	2,433.23	2,436.53	2,421.10	2,405.28	2,401.60	2,398.90	2,401.16	2,419.22	2,437.36	2,449.73	2,446.89	2,444.72
12	2,433.10	2,436.56	2,420.14	2,404.75	2,401.51	2,398.86	2,401.53	2,419.83	2,438.12	2,449.86	2,446.68	2,444.75
13	2,433.09	2,436.58	2,419.30	2,404.41	2,401.41	2,398.78	2,401.98	2,420.44	2,438.90	2,449.94	2,446.40	2,444.83
14	2,433.02	2,436.59	2,418.40	2,404.14	2,401.26	2,398.76	2,402.65	2,420.96	2,439.64	2,450.01	2,446.14	2,444.74
15	2,432.96	2,436.52	2,417.59	2,403.93	2,401.16	2,398.67	2,403.40	2,421.42	2,440.24	2,450.04	2,445.87	2,444.77
16	2,432.85	2,436.47	2,416.95	2,403.78	2,401.07	2,398.59	2,404.09	2,421.74	2,440.85	2,450.04	2,445.59	2,444.84
17	2,432.84	2,436.30	2,416.36	2,403.66	2,400.97	2,398.56	2,404.61	2,422.25	2,440.98	2,450.07	2,445.32	2,445.02
18	2,432.86	2,435.94	2,415.90	2,403.60	2,400.86	2,398.45	2,405.09	2,422.71	2,441.22	2,450.07	2,445.05	2,445.45
19	2,432.91	2,435.28	2,415.51	2,403.56	2,400.77	2,398.55	2,405.45	2,423.32	2,441.42	2,450.15	2,444.77	2,445.76
20	2,433.00	2,434.63	2,415.05	2,403.50	2,400.70	2,398.54	2,405.89	2,423.99	2,441.64	2,450.20	2,444.57	2,446.04
21	2,433.34	2,433.81	2,414.72	2,403.42	2,400.70	2,398.50	2,406.21	2,424.84	2,441.87	2,450.28	2,444.34	2,446.24
22	2,433.94	2,433.00	2,414.35	2,403.31	2,400.53	2,398.45	2,406.50	2,425.80	2,442.20	2,450.33	2,444.05	2,446.41
23	2,434.54	2,432.19	2,413.93	2,403.27	2,400.43	2,398.42	2,406.86	2,426.65	2,442.76	2,450.27	2,443.89	2,446.54
24	2,435.05	2,431.63	2,413.60	2,403.22	2,400.29	2,398.39	2,407.18	2,427.35	2,443.15	2,450.16	2,443.95	2,446.65
25	2,435.35	2,431.20	2,413.22	2,403.16	2,400.21	2,398.47	2,407.48	2,427.86	2,443.80	2,450.06	2,444.08	2,446.72
26	2,435.65	2,430.82	2,412.82	2,403.03	2,400.12	2,398.46	2,407.84	2,428.43	2,444.26	2,449.92	2,444.36	2,446.81
27	2,435.79	2,430.54	2,412.50	2,403.07	2,400.03	2,398.48	2,408.24	2,429.14	2,444.73	2,449.81	2,444.56	2,446.81
28	2,436.00	2,430.36	2,412.14	2,402.89	2,399.96	2,398.52	2,408.87	2,429.81	2,445.20	2,449.63	2,444.75	2,446.81
29	2,436.39	2,430.27	2,411.75	2,402.72	2,399.88	2,398.56	2,409.49	2,430.53	2,445.70	2,449.48	2,444.88	2,446.84
30	2,436.46	2,430.05	2,411.34	2,402.66	---	2,398.55	2,410.06	2,430.96	2,446.08	2,449.26	2,444.93	2,446.84
31	2,436.57	---	2,410.91	2,402.61	---	2,398.66	---	2,431.32	---	2,449.08	2,444.99	---
MEAN	2,434.01	2,434.73	2,418.54	2,405.06	2,401.19	2,398.82	2,403.68	2,421.76	2,439.24	2,449.38	2,445.99	2,445.53
MAX	2,436.57	2,436.78	2,429.41	2,410.56	2,402.57	2,399.76	2,410.06	2,431.32	2,446.08	2,450.33	2,448.87	2,446.84
MIN	2,432.84	2,430.05	2,410.91	2,402.61	2,399.88	2,398.39	2,398.80	2,410.60	2,431.59	2,446.54	2,443.89	2,444.66

CONTENTS IN THOUSANDS OF ACRE-FEET, AT END OF MONTH

4,754	4,484	3,744	3,454	3,366	3,323	3,714	4,536	5,163	5,296	5,115	5,197

CHANGE IN CONTENTS IN ACRE-FEET

+114,000	-270,000	-740,000	-290,000	-88,000	-43,000	+391,000	+822,000	+672,000	+133,000	-181,000	+82,000

CALENDAR YEAR 2003 . . . . . -8,000
WATER YEAR 2004 . . . . . +557,000

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°19'11" (NAD 27), in SW¼SW¼SW¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 0.7 mi downstream from Libby Dam, 2.8 mi upstream from Fisher River, 11 mi east of Libby, and at river mile 221.4.

DRAINAGE AREA.--8,985 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark). Prior to Feb. 13, 1974, nonrecording gage at site 0.4 mi upstream at same elevation.

REMARKS.--Water-discharge records good. Flow completely regulated by Lake Koocanusa since Mar. 21, 1972 . Diversions for irrigation of about 13,000 acres, from tributaries upstream from station in Canada and the United States. U.S. Army Corps of Engineers satellite telemetry at station.

AVERAGE DISCHARGE.--33 years, 11,000 ft^3/s, 16.62 in/yr, 7,970,000 acre-ft/yr, adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft^3/s, Aug. 5, 1974, gage height, 27.50 ft; minimum daily, 1,900 ft^3/s, Jan. 29, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,700 ft^3/s, Dec. 1, gage height, 22.88 ft; minimum daily, 3,940 ft^3/s, Jan 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,020	4,650	17,400	10,100	4,050	4,000	3,990	4,000	13,100	12,400	12,700	12,400
2	4,530	4,640	20,200	10,000	4,020	4,000	3,950	4,000	13,400	12,400	12,700	12,400
3	4,600	4,650	20,200	10,000	4,010	4,000	3,940	4,040	13,100	12,400	12,700	12,400
4	4,590	4,650	20,200	10,100	4,010	3,990	4,030	4,020	13,000	12,400	12,700	10,600
5	4,500	4,640	20,200	11,600	4,020	3,960	4,050	4,010	13,100	12,500	12,700	11,200
6	4,130	4,660	20,200	12,200	4,010	4,010	4,050	4,000	13,300	12,600	12,700	12,600
7	4,000	4,630	20,200	12,100	4,020	3,990	4,060	3,980	14,000	12,700	12,700	12,500
8	4,460	4,630	20,200	12,000	4,010	3,970	4,050	3,990	14,000	12,600	12,800	12,500
9	4,620	4,640	20,200	12,100	4,020	4,000	4,030	4,010	13,900	12,500	12,900	12,500
10	4,690	4,630	20,300	12,100	4,020	4,000	4,040	3,990	13,800	12,400	12,700	12,500
11	4,610	4,630	20,200	12,100	4,020	3,980	4,020	3,990	13,900	12,400	12,700	12,500
12	4,610	4,650	20,200	12,000	4,030	3,970	4,030	3,970	13,900	12,300	11,800	12,500
13	4,600	4,650	20,200	9,040	4,020	3,960	4,000	3,970	14,300	12,300	12,700	13,600
14	4,600	4,640	20,300	7,940	4,010	4,030	4,010	3,990	15,000	12,300	12,700	13,900
15	4,600	4,630	20,000	7,070	4,020	4,020	4,010	4,000	15,000	12,300	12,800	13,800
16	4,590	4,730	15,100	6,160	4,020	4,050	3,990	3,990	14,900	12,500	12,700	11,900
17	4,650	8,240	15,000	5,030	4,030	4,010	4,000	3,980	15,000	12,500	12,600	11,700
18	4,670	14,900	12,800	3,940	4,030	4,050	3,990	3,990	14,900	12,500	12,400	9,460
19	4,660	20,300	10,800	3,940	4,030	3,990	3,960	3,990	14,900	12,400	12,600	9,490
20	4,680	20,300	10,000	4,010	4,020	4,020	3,960	3,960	15,200	12,400	12,600	9,470
21	4,590	20,300	10,000	4,020	4,010	4,020	3,990	4,010	16,000	12,400	12,600	9,480
22	4,660	20,400	10,000	4,020	4,020	4,020	4,040	4,020	15,600	12,600	12,900	9,550
23	4,640	20,400	10,000	4,020	4,020	4,050	4,030	4,020	16,000	12,600	12,900	9,640
24	4,640	15,200	10,100	4,020	4,010	3,990	4,010	4,030	15,900	12,600	12,900	9,610
25	4,570	12,900	10,100	4,010	4,020	3,980	4,010	3,980	15,900	12,700	12,700	9,560
26	4,250	11,300	10,100	4,050	4,090	3,980	4,010	4,000	16,000	12,700	12,500	9,610
27	3,970	9,040	10,000	4,030	4,060	3,980	4,040	4,010	15,400	12,700	12,500	9,710
28	4,000	8,050	10,000	4,030	4,050	4,020	4,040	4,020	13,300	12,700	12,500	9,670
29	4,020	7,090	10,000	4,030	4,020	4,000	4,020	5,410	12,500	12,700	12,500	9,690
30	4,460	9,110	10,100	4,050	---	3,980	4,010	10,300	12,400	12,700	12,400	9,750
31	4,660	---	10,100	4,050	---	3,990	---	13,000	---	12,700	12,300	---
TOTAL	139,870	271,880	474,400	227,860	116,720	124,010	120,360	140,670	430,700	387,900	391,600	336,190
MEAN	4,512	9,063	15,300	7,350	4,025	4,000	4,012	4,538	14,360	12,510	12,630	11,210
MAX	5,020	20,400	20,300	12,200	4,090	4,050	4,060	13,000	16,000	12,700	12,900	13,900
MIN	3,970	4,630	10,000	3,940	4,010	3,960	3,940	3,960	12,400	12,300	11,800	9,460
AC-FT	277,400	539,300	941,000	452,000	231,500	246,000	238,700	279,000	854,300	769,400	776,700	666,800
CFSM	0.50	1.01	1.70	0.82	0.45	0.45	0.45	0.51	1.60	1.39	1.41	1.25
IN.	0.58	1.13	1.96	0.94	0.48	0.51	0.50	0.58	1.78	1.61	1.62	1.39

ADJUSTED FOR CHANGE IN CONTENTS OF LAKE KOOCANUSA

MEAN	6,365	4,526	3,269	2,635	2,495	3,301	10,580	17,910	24,890	14,680	9,688	12,580
CFSM	.71	.50	.36	.29	.28	.37	1.18	1.99	2.77	1.63	1.08	1.40
IN	.82	.56	.42	.34	.30	.42	1.31	2.30	3.09	1.88	1.24	1.56
AC-FT	391,400	269,300	201,000	162,000	143,500	203,000	629,700	1,101,000	1,481,300	902,400	595,700	748,800

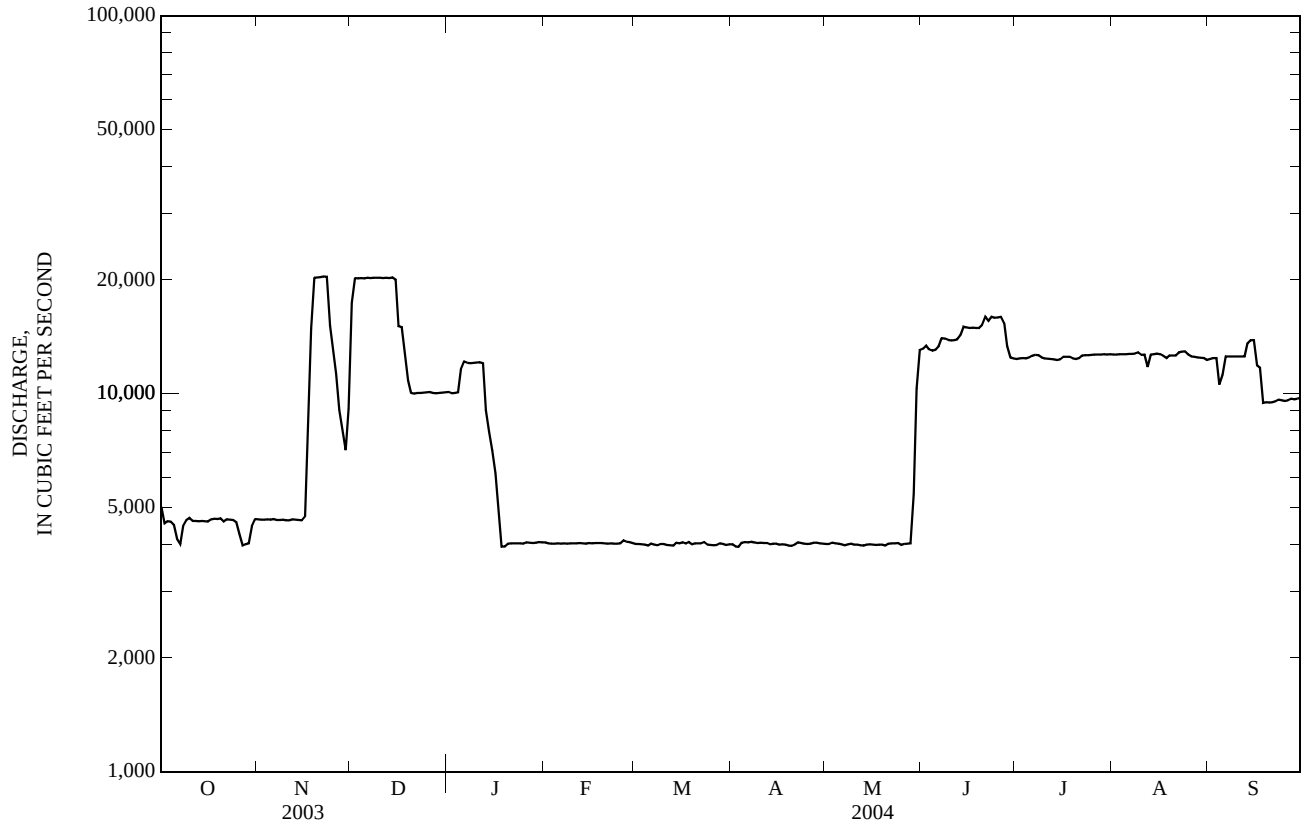
OBSERVED

CALENDAR YEAR 2003	TOTAL	3,353,750	MEAN	9,188	MAX	25,000	MIN	3,960	AC-FT	6,652,000
WATER YEAR 2004	TOTAL	3,162,160	MEAN	8,640	MAX	20,400	MIN	3,940	AC-FT	6,272,000

ADJUSTED

CALENDAR YEAR 2003	TOTAL	3,349,786	MEAN	9,177	CFSM	1.02	IN	13.86	AC-FT	6,644,000
WATER YEAR 2004	TOTAL	3,442,954	MEAN	9,407	CFSM	1.05	IN	14.25	AC-FT	6,829,000

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to September 2004 (discontinued). Prior to March 25, 1974, at site 3.2 mi downstream.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1969.
WATER TEMPERATURE: October 1967 to September 1977; seasonal records, April 2001 to September 2003.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to January 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 525 microsiemens per centimeter (µS/cm) at 25.0°C, Dec. 24, 1967; minimum daily, 174 µS/cm at 25.0°C, May 26, 1969.
WATER TEMPERATURE: Maximum, 21.5°C, Aug. 6, 1970; minimum 0.0°C on many days during winter periods most years prior to Libby Dam.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,200 mg/L, June 5, 1968; minimum daily mean, 1 mg/L on many days in 1968, 1969, 1972-75.
SEDIMENT LOAD: Maximum daily, 200,000 tons, June 5, 1968; minimum daily, 5.4 tons, Jan. 28, 1972.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Silica, water, fltrd, mg/L (00955)
OCT										
16...	1430	4,580	700	9.0	91	8.3	230	10.0	12.0	3.3
DEC										
17...	1145	15,100	710	9.8	85	7.8	236	1.0	6.0	3.8
FEB										
20...	1130	4,020	705	11.4	93	7.3	246	1.5	3.5	3.9
APR										
16...	1100	3,990	699	12.2	102	7.8	249	--	4.0	4.3
MAY										
18...	1400	3,990	696	10.7	100	7.0	274	26.0	8.5	4.2
JUN										
16...	0830	15,000	711	11.3	106	7.8	254	8.0	9.5	4.4
JUL										
14...	1330	12,200	695	10.0	107	7.4	236	28.5	14.0	4.1
AUG										
27...	1500	12,500	706	9.6	97	7.7	230	22.0	12.5	4.1
SEP										
23...	1345	9,430	705	8.3	84	8.3	224	28.0	12.5	4.2

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT								
16...	E.08	<.010	.057	<.006	.005	93	1	12
DEC								
17...	E.08	<.010	.127	<.006	E.003	--	--	--
FEB								
20...	E.07	<.010	.114	<.006	.006	--	--	--
APR								
16...	E.07	<.010	.113	<.006	E.003	--	--	--
MAY								
18...	E.08	E.005	.088	<.006	E.003	87	1	11
JUN								
16...	E.05	.013	.096	<.006	<.004	92	1	40
JUL								
14...	E.07	E.005	.079	<.006	E.003	89	1	33
AUG								
27...	E.06	E.005	.100	<.006	<.004	73	1	34
SEP								
23...	.11	E.005	.117	<.006	E.003	89	1	25

Date	Time	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)
MAY											
18...	1400	130	37.0	9.45	.51	.1	3.57	111	3.33	<.2	23.1
JUL											
14...	1330	120	33.3	8.63	.56	.1	3.67	102	2.98	<.2	23.1

Date	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Lead, water, fltrd, ug/L (01049)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Zinc, water, fltrd, ug/L (01090)
MAY												
18...	148	.20	1,590	2	.6	E.03	<.8	.7	E.07	<.02	.92	.9
JUL												
14...	138	.19	4,550	E2	.3	E.03	<.8	1.7	.30	<.02	1.05	1.9

E--Estimated.

12302055 FISHER RIVER NEAR LIBBY, MT

LOCATION.--Lat 48°21'20", long 115°18'50" (NAD 27), in NW¼ NE¼NW¼ sec.21, T.30 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on left bank 0.8 mi upstream from mouth and 11.4 mi east of Libby.

DRAINAGE AREA.--838 mi^2.

PERIOD OF RECORD.--September 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,134.10 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark).

REMARKS.--Rrecords good except those for estimated daily discharges, which are poor. Diversions of about 700 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 6,560 ft^3/s, by slope-area measurement at site 0.5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	e90	157	e90	205	163	716	744	873	315	106	129
2	68	e95	145	e85	192	165	697	776	804	314	103	122
3	68	103	141	e80	174	160	661	902	750	283	103	118
4	70	99	150	e75	173	160	659	1,000	732	270	110	115
5	70	93	145	e70	166	162	755	973	758	268	105	112
6	70	103	153	e65	154	165	874	852	779	249	104	107
7	70	119	181	e60	157	158	991	764	793	247	118	104
8	70	124	174	e70	151	165	1,070	764	687	262	123	101
9	72	118	159	e80	142	210	1,150	783	613	236	110	98
10	73	104	152	e90	143	271	1,100	717	570	220	105	96
11	73	111	150	e95	140	322	996	704	570	215	101	96
12	75	118	163	e100	127	341	953	666	570	205	96	104
13	78	104	150	e105	118	366	992	597	531	194	93	103
14	86	98	160	e103	121	373	1,200	546	553	187	90	104
15	85	95	150	e100	147	374	1,340	508	510	179	88	122
16	86	94	138	e100	137	379	1,160	488	467	171	87	145
17	93	97	134	e100	130	394	1,000	505	442	164	86	187
18	94	111	139	e102	138	457	890	525	428	160	93	190
19	89	193	115	e103	154	577	799	552	414	160	109	228
20	86	230	105	e105	156	589	730	618	396	170	113	197
21	93	188	139	e106	151	557	678	620	377	158	105	174
22	102	156	130	108	146	534	622	722	375	148	97	159
23	101	151	119	108	146	546	589	867	378	140	101	148
24	99	143	118	109	152	617	597	811	370	134	106	139
25	96	139	118	110	151	688	600	723	355	129	144	132
26	93	131	116	107	156	701	593	719	350	125	265	126
27	91	124	113	106	161	683	653	884	352	127	243	121
28	91	140	112	108	163	642	925	944	326	126	203	117
29	127	139	100	116	163	596	896	920	312	120	176	115
30	144	167	89	165	---	579	793	864	303	115	152	112
31	e100	---	e85	237	---	636	---	917	---	110	137	---
TOTAL	2,681	3,777	4,200	3,158	4,414	12,730	25,679	22,975	15,738	5,901	3,772	3,921
MEAN	86.5	126	135	102	152	411	856	741	525	190	122	131
MAX	144	230	181	237	205	701	1,340	1,000	873	315	265	228
MIN	68	90	85	60	118	158	589	488	303	110	86	96
AC-FT	5,320	7,490	8,330	6,260	8,760	25,250	50,930	45,570	31,220	11,700	7,480	7,780
CFSM	0.10	0.15	0.16	0.12	0.18	0.49	1.02	0.88	0.63	0.23	0.15	0.16
IN.	0.12	0.17	0.19	0.14	0.20	0.57	1.14	1.02	0.70	0.26	0.17	0.17

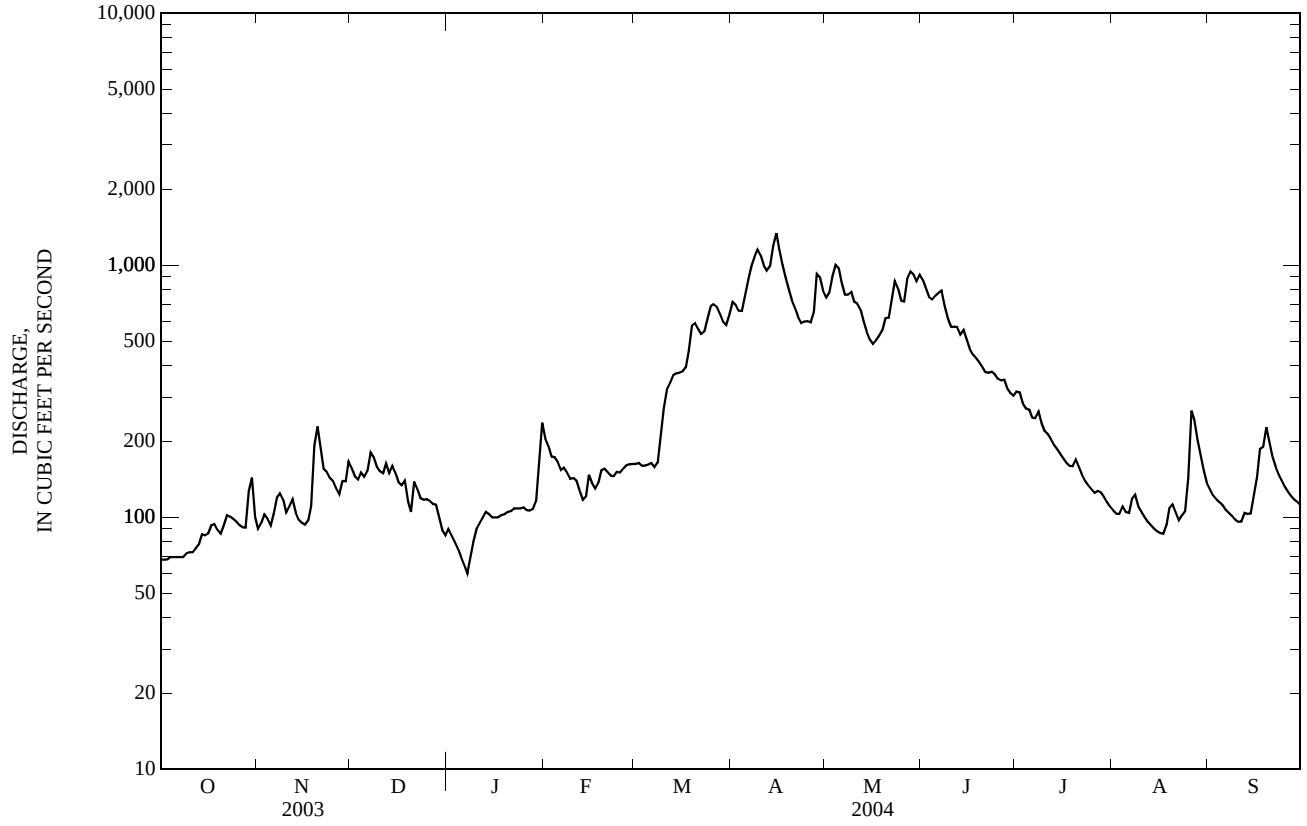
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2004, BY WATER YEAR (WY)

MEAN	133	225	238	251	346	585	1,210	1,380	815	289	138	119
MAX	305	819	1,174	1,272	1,965	2,401	2,752	3,300	1,796	532	244	204
(WY)	(1986)	(1996)	(1996)	(1974)	(1996)	(1972)	(1997)	(1997)	(1974)	(1971)	(1997)	(1968)
MIN	76.4	87.0	90.4	77.9	95.0	134	318	482	221	92.7	56.0	54.6
(WY)	(2002)	(1980)	(1993)	(1979)	(1993)	(2001)	(2001)	(1977)	(1977)	(1977)	(1994)	(2001)

12302055 FISHER RIVER NEAR LIBBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1968 - 2004	
ANNUAL TOTAL	108,419		108,946			
ANNUAL MEAN	297		298		477	
HIGHEST ANNUAL MEAN					938	1996
LOWEST ANNUAL MEAN					169	1977
HIGHEST DAILY MEAN	1,300	Apr 2	1,340	Apr 15	7,790	Feb 9, 1996
LOWEST DAILY MEAN	61	Sep 6	60	Jan 7	35	Jan 2, 1977
ANNUAL SEVEN-DAY MINIMUM	62	Sep 1	69	Oct 1	50	Aug 18, 1994
MAXIMUM PEAK FLOW			1,360	Apr 15	a12,000	Feb 9, 1996
MAXIMUM PEAK STAGE			5.39	Apr 15	10.35	Feb 9, 1996
INSTANTANEOUS LOW FLOW					29	Jan 2, 1977
ANNUAL RUNOFF (AC-FT)	215,000		216,100		345,700	
ANNUAL RUNOFF (CFSM)	0.354		0.355		0.569	
ANNUAL RUNOFF (INCHES)	4.81		4.84		7.74	
10 PERCENT EXCEEDS	788		760		1,250	
50 PERCENT EXCEEDS	147		152		207	
90 PERCENT EXCEEDS	72		91		97	

a--From indirect measurement.
e--Estimated.



12304500 YAAK RIVER NEAR TROY, MT

LOCATION.--Lat 48°33'43", long 115°58'09" (NAD 27), in NE¼SE¼SE¼ sec.5, T.32 N., R.34 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on right bank 500 ft upstream from bridge on U.S. Highway 2, 0.3 mi upstream from mouth, and 7.7 mi northwest of Troy.

DRAINAGE AREA.--766 mi^2.

PERIOD OF RECORD.--October 1910 to September 1916 (fragmentary record), March 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,839.2 ft (NGVD 29). Oct. 15, 1910, to Sept. 30, 1916, nonrecording gage at several sites within 11 mi of present site at various elevations.

REMARKS.--Records good. Minor diversions for irrigation upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 11.0 ft, from floodmarks; discharge, 12,500 ft^3/s. Flood in May 1954 reached a stage of 11.4 ft, from floodmarks; discharge, 13,400 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	106	144	e85	236	156	1,370	1,830	1,270	471	143	141
2	65	89	e143	e83	183	155	1,190	2,120	1,200	490	137	133
3	65	90	e140	e80	180	150	1,120	2,500	1,110	482	141	130
4	65	e88	e135	e78	193	150	1,190	2,580	1,130	453	178	129
5	64	e85	e130	e75	159	150	1,440	2,510	1,200	449	160	132
6	64	e95	e140	e70	146	150	1,620	2,120	1,550	416	150	128
7	64	e105	e140	e65	143	145	1,760	1,920	1,560	412	158	123
8	64	e110	135	e80	135	150	2,230	1,940	1,280	464	157	122
9	64	e115	127	e95	123	196	2,830	1,870	1,100	433	150	120
10	64	e130	e120	e105	130	254	2,320	1,690	999	383	141	119
11	64	e125	e110	e110	116	280	2,040	1,560	994	350	132	130
12	77	e120	e115	e105	112	298	2,040	1,390	971	328	126	164
13	81	e115	e120	e100	137	323	2,250	1,240	901	310	119	151
14	80	e110	e125	e100	189	337	2,740	1,140	898	292	115	162
15	76	e110	e120	e100	192	336	2,770	1,100	877	274	111	212
16	82	e112	e115	e100	134	336	2,320	1,130	796	259	107	242
17	118	e118	e110	e100	121	365	2,000	1,230	742	245	104	265
18	123	122	e100	e100	126	488	1,760	1,260	701	234	103	338
19	107	309	e95	e100	131	710	1,620	1,340	656	226	104	335
20	109	357	e90	e102	127	662	1,510	1,370	615	229	116	286
21	e125	248	e110	e103	124	587	1,410	1,480	582	218	125	243
22	e130	172	e110	e105	121	578	1,300	1,880	558	211	130	214
23	e130	129	e105	e110	123	706	1,280	1,790	559	206	164	196
24	134	137	e100	e115	128	901	1,350	1,460	522	194	174	184
25	115	143	e105	e112	131	1,030	1,320	1,270	516	185	252	176
26	106	145	e105	e100	138	1,020	1,330	1,350	482	177	251	168
27	99	137	e102	e100	148	976	1,610	1,450	469	170	220	160
28	103	182	e100	e112	154	898	2,110	1,650	463	165	206	155
29	129	218	e90	114	156	857	1,980	1,620	435	159	180	150
30	135	172	e85	178	---	929	1,810	1,440	486	153	166	145
31	133	---	e90	315	---	1,280	---	1,390	---	149	152	---
TOTAL	2,900	4,294	3,556	3,297	4,236	15,553	53,620	50,620	25,622	9,187	4,672	5,353
MEAN	93.5	143	115	106	146	502	1,787	1,633	854	296	151	178
MAX	135	357	144	315	236	1,280	2,830	2,580	1,560	490	252	338
MIN	64	85	85	65	112	145	1,120	1,100	435	149	103	119
MED	82	121	110	100	135	337	1,690	1,480	836	259	143	158
AC-FT	5,750	8,520	7,050	6,540	8,400	30,850	106,400	100,400	50,820	18,220	9,270	10,620
CFSM	0.12	0.19	0.15	0.14	0.19	0.65	2.33	2.13	1.11	0.39	0.20	0.23
IN.	0.14	0.21	0.17	0.16	0.21	0.76	2.60	2.46	1.24	0.45	0.23	0.26

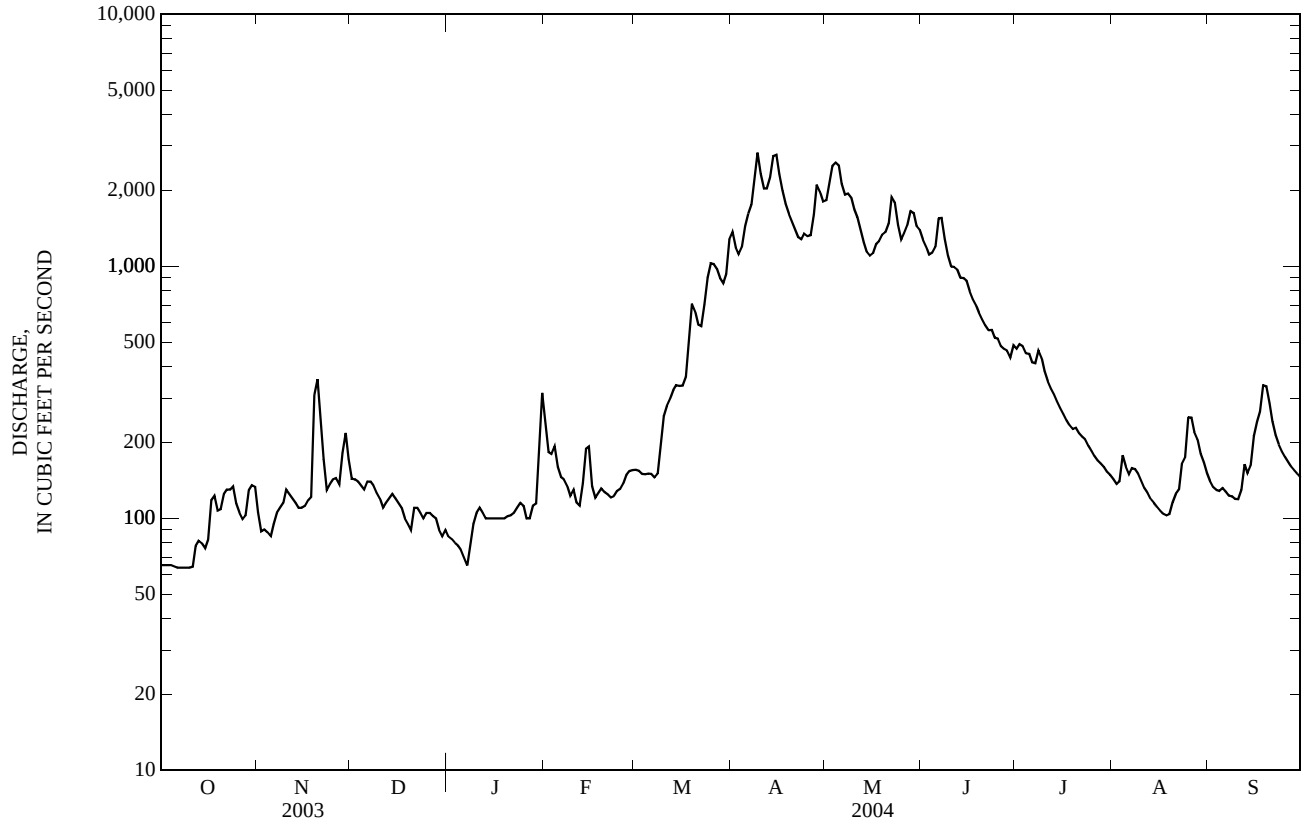
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	196	315	315	289	350	596	1,922	3,456	1,903	490	194	162
MAX	833	1,192	1,630	1,552	1,626	1,872	3,754	6,463	4,992	970	373	506
(WY)	(1960)	(1996)	(1996)	(1974)	(1996)	(1972)	(1969)	(1997)	(1974)	(1969)	(1993)	(1959)
MIN	84.0	93.2	94.0	94.6	83.0	134	421	1,026	377	151	80.9	53.2
(WY)	(1988)	(1980)	(2003)	(1988)	(2001)	(2001)	(2001)	(1977)	(1992)	(1977)	(2001)	(2001)

12304500 YAAK RIVER NEAR TROY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	182,049		182,910			
ANNUAL MEAN	499		500		850	
HIGHEST ANNUAL MEAN					1,562	1974
LOWEST ANNUAL MEAN					278	1977
HIGHEST DAILY MEAN	3,200	May 26	2,830	Apr 9	11,600	May 16, 1997
LOWEST DAILY MEAN	60	Sep 6	a64	Oct 5	49	Sep 19, 2001
ANNUAL SEVEN-DAY MINIMUM	62	Sep 2	64	Oct 5	49	Sep 19, 2001
MAXIMUM PEAK FLOW			2,990	Apr 9	c12,600	May 17, 1997
MAXIMUM PEAK STAGE			6.39	Apr 9	d9.70	May 21, 1956
INSTANTANEOUS LOW FLOW			b64	Oct 5	47	Sep 22, 2001
ANNUAL RUNOFF (AC-FT)	361,100		362,800		616,000	
ANNUAL RUNOFF (CFSM)	0.651		0.652		1.11	
ANNUAL RUNOFF (INCHES)	8.84		8.88		15.08	
10 PERCENT EXCEEDS	1,580		1,490		2,540	
50 PERCENT EXCEEDS	138		159		283	
90 PERCENT EXCEEDS	75		100		119	

a--Also occurred Oct. 6-11.
b--Gage height, 2.74 ft.
c--Gage height, 9.58 ft.
d--Gage height in well, 10.8 ft, from outside gage.
e--Estimated.



12305000 KOOTENAI RIVER AT LEONIA, ID

LOCATION.--Lat 48°37'04", long 116°02'47", in NW¼NW¼NW¼ sec.20, T.33 N., R.34 W., principal Meridian, Lincoln County, Montana, Leonia quad., Hydrologic Unit l70l0l04, on right bank at Leonia, 450 ft east of Montana-Idaho State line, 0.5 mi upstream from Boulder Creek, and at mile 171.6.

DRAINAGE AREA.--11,740 mi^2, approximately.

PERIOD OF RECORD.--March 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,790.25 ft above NGVD of 1929. Prior to Oct. 1, 1970, at datum 90 ft lower. Prior to Nov. 13, 1928, nonrecording gage on bridge 250 ft upstream at datum 90.41 ft lower.

REMARKS.--No estimated daily discharges. Records good. Station equipment includes satellite telemetry. Diversions above station for irrigation of about 14,600 acres. Flow regulated by Libby Dam and power plant since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (1929-71), 123,000 ft^3/s May 28, 1948, gage height, 33.40 ft; minimum, 996 ft^3/s Dec. 9, 1936, minimum gage height, 7.56 ft, Dec. 10, 1929. Maximum discharge since regulation began in 1972, 62,000 ft^3/s Jan. 16, 1974, gage height, 24.15 ft; maximum gage height, 25.06 ft, Feb. 9, 1996; minimum daily, 2,270 ft Dec. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1894 and 1916 reached stages of 34.6 and 31.6 ft, respectively, present datum, from information by Great Northern Railway.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 21,600 ft^3/s Nov. 20; minimum daily, 4,270 ft^3/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,560	5,280	14,200	10,500	5,320	4,960	8,560	9,890	18,000	14,200	13,000	12,900
2	5,130	5,270	20,800	10,500	5,150	4,940	8,240	10,700	17,800	14,100	13,000	13,000
3	4,900	5,250	20,800	10,500	4,990	4,930	8,050	12,100	17,500	14,000	13,000	13,000
4	4,900	5,190	20,800	10,500	4,990	4,940	8,160	12,700	17,400	14,000	13,100	12,900
5	4,850	5,110	20,800	11,000	4,950	4,950	8,790	12,400	17,800	13,900	13,100	10,000
6	4,720	5,090	20,900	12,000	4,880	4,940	9,360	11,100	18,600	13,800	13,100	12,900
7	4,270	5,070	21,000	12,300	4,870	4,920	9,900	10,400	19,200	14,000	13,200	12,900
8	4,380	5,120	20,900	12,300	4,840	4,930	11,000	10,500	18,400	14,000	13,200	12,900
9	4,910	5,160	20,900	12,300	4,780	5,200	12,000	10,500	17,700	13,800	13,200	12,900
10	4,950	5,200	20,900	12,300	4,780	5,640	11,100	9,950	17,200	13,500	13,000	12,900
11	5,000	5,270	20,800	12,400	4,750	5,870	10,500	9,540	17,300	13,400	13,000	13,000
12	5,000	5,260	20,800	12,400	4,700	5,930	10,500	9,160	17,300	13,400	12,200	13,000
13	5,010	5,220	20,800	10,800	4,650	6,010	11,000	8,660	17,100	13,300	12,900	13,500
14	5,010	5,190	20,800	9,170	4,670	6,050	12,400	8,330	18,300	13,200	12,900	14,300
15	5,000	5,180	20,800	8,320	4,760	6,040	12,700	8,160	18,200	13,100	12,900	14,700
16	5,060	5,210	17,200	7,450	4,780	6,050	11,400	8,180	17,800	13,300	13,000	14,500
17	5,150	6,360	15,500	6,380	4,760	6,160	10,400	8,480	17,600	13,300	12,800	12,300
18	5,240	11,500	14,000	5,210	4,830	6,630	9,730	8,700	17,500	13,300	12,700	12,000
19	5,220	21,300	12,000	4,510	4,840	7,400	9,310	9,010	17,300	13,200	12,900	11,300
20	5,260	21,600	10,900	4,520	4,830	7,350	8,970	9,370	17,200	13,200	12,900	11,000
21	5,740	21,200	10,600	4,530	4,820	7,040	8,670	9,850	18,100	13,100	12,900	10,700
22	5,620	21,000	10,700	4,520	4,790	6,910	8,400	10,700	17,900	13,200	13,000	10,700
23	5,460	21,000	10,600	4,520	4,790	7,110	8,300	10,600	18,200	13,200	13,200	10,600
24	5,340	17,400	10,600	4,570	4,820	7,640	8,490	9,720	18,200	13,200	13,300	10,600
25	5,260	14,200	10,600	4,540	4,850	8,030	8,440	9,070	18,100	13,200	14,300	10,500
26	5,080	12,600	10,600	4,510	4,910	8,070	8,520	9,210	18,000	13,100	14,400	10,500
27	4,530	10,500	10,600	4,570	5,000	7,930	9,220	9,890	18,000	13,100	14,100	10,500
28	4,470	9,370	10,500	4,600	4,990	7,710	11,000	10,600	15,800	13,100	13,700	10,400
29	4,910	8,690	10,500	4,650	4,990	7,500	10,700	10,400	14,500	13,100	13,400	10,400
30	5,010	8,850	10,500	5,130	---	7,510	9,960	13,500	14,300	13,100	13,200	10,400
31	5,360	---	10,500	5,510	---	8,200	---	18,000	---	13,100	13,100	---
TOTAL	156,300	288,640	491,900	247,010	141,080	197,490	293,770	319,370	526,300	416,500	407,700	361,200
MEAN	5,042	9,621	15,870	7,968	4,865	6,371	9,792	10,300	17,540	13,440	13,150	12,040
MAX	5,740	21,600	21,000	12,400	5,320	8,200	12,700	18,000	19,200	14,200	14,400	14,700
MIN	4,270	5,070	10,500	4,510	4,650	4,920	8,050	8,160	14,300	13,100	12,200	10,000
AC-FT	310,000	572,500	975,700	489,900	279,800	391,700	582,700	633,500	1,044,000	826,100	808,700	716,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929-71, BY WATER YEAR (WY) - UNREGULATED

MEAN	6,528	5,705	4,768	4,049	4,364	4,898	14,540	38,860	45,570	23,050	10,010	7,045
MAX	15,5540	11,280	13,700	13,330	10,630	10,390	39,940	61,770	74,280	47,510	16,910	16,560
(WY)	(1948)	(1934)	(1934)	(1934)	(1951)	(1934)	(1934)	(1956)	(1967)	(1954)	(1954)	(1959)
MIN	3,532	2,748	2,477	1,922	1,994	2,693	4,334	18,630	26,630	9,819	6,142	4,744
(WY)	(1937)	(1937)	(1945)	(1937)	(1936)	(1944)	(1945)	(1944)	(1941)	(1944)	(1941)	(1936)

12305000 KOOTENAI RIVER AT LEONIA, ID—Continued

SUMMARY STATISTICS	WATER YEARS 1929-71	
ANNUAL MEAN	14,150	
HIGHEST ANNUAL MEAN	19,240	1956
LOWEST ANNUAL MEAN	7,416	1944
HIGHEST DAILY MEAN	122,000	May 28, 1948
LOWEST DAILY MEAN	1,070	Dec 8, 1936
ANNUAL SEVEN-DAY MINIMUM	1,310	Jan 2, 1937
ANNUAL RUNOFF (AC-FT)	10,250,000	
10 PERCENT EXCEEDS	37,800	
50 PERCENT EXCEEDS	6,750	
90 PERCENT EXCEEDS	3,240	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2004, BY WATER YEAR (WY) - REGULATED- UNADJUSTED

MEAN	14,140	16,110	16,210	15,050	12,530	8,801	11,010	15,220	17,400	13,100	11,590	11,120
MAX	31,980	26,400	28,140	28,610	24,790	15,160	25,570	31,670	39,200	29,740	20,310	20,960
(WY)	(1973)	(1992)	(1991)	(1976)	(1990)	(1990)	(1996)	(1997)	(1972)	(2002)	(1976)	(1972)
MIN	5,042	5,004	3,423	3,109	3,724	4,350	5,588	8,352	5,374	4,139	3,956	5,539
(WY)	(2004)	(1972)	(1972)	(1972)	(1973)	(1973)	(2001)	(1977)	(1977)	(1988)	(1975)	(1994)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1972 - 2004	
ANNUAL TOTAL	4,064,730		3,847,260			
ANNUAL MEAN	11,140		10,510		13,530	
HIGHEST ANNUAL MEAN					20,400	1996
LOWEST ANNUAL MEAN					7,466	2001
HIGHEST DAILY MEAN	30,700	Jun 7	21,600	Nov 20	56,200	Jan 16, 1974
LOWEST DAILY MEAN	4,270	Oct 7	4,270	Oct 7	2,270	Dec 9, 1972
ANNUAL SEVEN-DAY MINIMUM	4,490	Jan 18	4,530	Jan 19	2,420	Dec 7, 1972
ANNUAL RUNOFF (AC-FT)	8,062,000		7,631,000		9,800,000	
10 PERCENT EXCEEDS	20,800		17,700		24,200	
50 PERCENT EXCEEDS	9,080		10,500		11,800	
90 PERCENT EXCEEDS	4,910		4,880		5,010	

12323240 BLACKTAIL CREEK AT BUTTE, MT

LOCATION.--Lat 45°54'38", long 112°31'38" (NAD 27), in SW¼NE¼SE¼ sec.24, T.3 N., R.8 W., Silver Bow County, Hydrologic Unit 17010201, on left bank, 70 feet upstream from George Street culvert in Butte, and 0.2 mi upstream from Silver Bow Creek.

DRAINAGE AREA.--95.4 mi^2.

PERIOD OF RECORD.--October 1988 to current year.

REVISED RECORDS.--WDR-MT-93-1: 1989-92 (M).

GAGE.--Water-stage recorder. Elevation of gage is 5,430 ft (NGVD 29).

REMARKS.--Records good except those for July through September and estimated daily discharges, which are fair. Slight regulation by Basin Creek Reservoir. Diversions for irrigation of about 1,400 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	e7.0	6.9	6.5	6.6	7.2	15	7.7	8.4	9.4	5.0	5.7
2	6.7	e7.0	6.9	6.4	6.6	6.8	11	7.4	7.8	8.1	5.1	7.0
3	6.7	e7.0	6.9	6.4	6.6	6.8	11	7.2	7.4	8.1	5.3	6.1
4	6.9	e7.0	6.7	e6.0	6.6	6.7	12	7.1	7.2	7.5	5.1	5.9
5	6.9	e7.0	6.7	e6.0	6.6	6.7	13	6.9	7.1	7.1	5.4	5.9
6	6.8	e7.0	6.9	e6.0	6.4	6.7	12	6.8	6.8	7.5	5.2	5.9
7	6.6	e7.2	6.9	e6.4	6.5	7.4	11	6.9	6.6	7.2	5.4	5.7
8	6.8	7.3	6.8	6.4	6.5	10	10	6.5	7.3	7.0	5.5	5.6
9	6.7	7.3	6.7	6.5	6.6	8.8	10	6.5	7.4	6.6	5.6	5.7
10	6.5	7.5	6.8	6.5	6.5	8.3	10	6.6	8.9	6.4	5.4	5.6
11	6.5	7.5	6.8	6.5	6.6	8.0	9.1	6.8	8.7	6.0	5.3	5.6
12	6.7	7.3	6.8	6.4	6.5	8.1	9.1	6.9	9.0	6.2	5.4	7.4
13	6.8	7.3	6.8	6.5	6.5	7.9	8.9	6.7	8.2	6.5	5.2	6.6
14	6.8	7.2	6.9	6.4	6.4	8.1	8.6	6.6	7.2	6.1	5.4	7.0
15	6.8	7.3	6.7	6.5	6.5	8.7	8.8	6.4	6.9	6.1	5.5	6.6
16	6.7	7.3	6.7	6.5	6.4	9.3	8.1	8.6	7.0	6.1	5.5	6.2
17	6.7	7.3	6.7	6.4	6.8	9.4	8.9	7.8	6.9	5.7	6.7	6.1
18	6.7	7.3	6.6	6.4	7.1	10	11	12	7.5	5.8	6.9	8.7
19	6.7	7.0	6.6	6.4	6.8	12	11	13	8.2	6.4	6.4	11
20	6.7	6.9	6.6	6.5	6.9	12	11	13	7.4	7.6	6.4	8.0
21	6.7	6.8	6.6	6.5	6.8	12	10	17	7.1	5.6	5.8	6.7
22	6.7	6.7	6.6	6.5	6.9	12	9.3	17	7.9	5.4	6.4	6.6
23	6.7	6.6	6.5	6.7	7.3	12	8.3	16	10	5.6	20	6.8
24	6.7	6.7	6.6	6.8	7.5	12	7.6	15	7.7	5.3	6.4	6.6
25	6.7	6.6	6.6	6.7	7.0	13	7.3	13	8.4	5.2	8.4	6.3
26	6.8	6.6	6.6	6.6	6.8	13	7.2	12	32	5.1	6.2	6.2
27	7.4	6.6	6.5	6.6	7.6	11	7.0	11	23	5.1	6.1	6.1
28	7.2	6.6	6.4	6.8	6.9	10	9.9	11	11	5.0	5.6	6.0
29	e7.0	6.8	6.5	6.8	6.9	10	7.8	11	9.1	4.9	5.6	6.2
30	e7.0	6.7	6.5	6.9	---	9.8	7.9	11	9.2	5.0	5.4	6.2
31	e7.0	---	6.4	6.7	---	9.2	---	9.8	---	4.9	5.5	---
TOTAL	210.3	210.4	207.2	201.2	195.7	292.9	291.8	301.2	277.3	194.5	193.1	196.0
MEAN	6.78	7.01	6.68	6.49	6.75	9.45	9.73	9.72	9.24	6.27	6.23	6.53
MAX	7.4	7.5	6.9	6.9	7.6	13	15	17	32	9.4	20	11
MIN	6.5	6.6	6.4	6.0	6.4	6.7	7.0	6.4	6.6	4.9	5.0	5.6
AC-FT	417	417	411	399	388	581	579	597	550	386	383	389

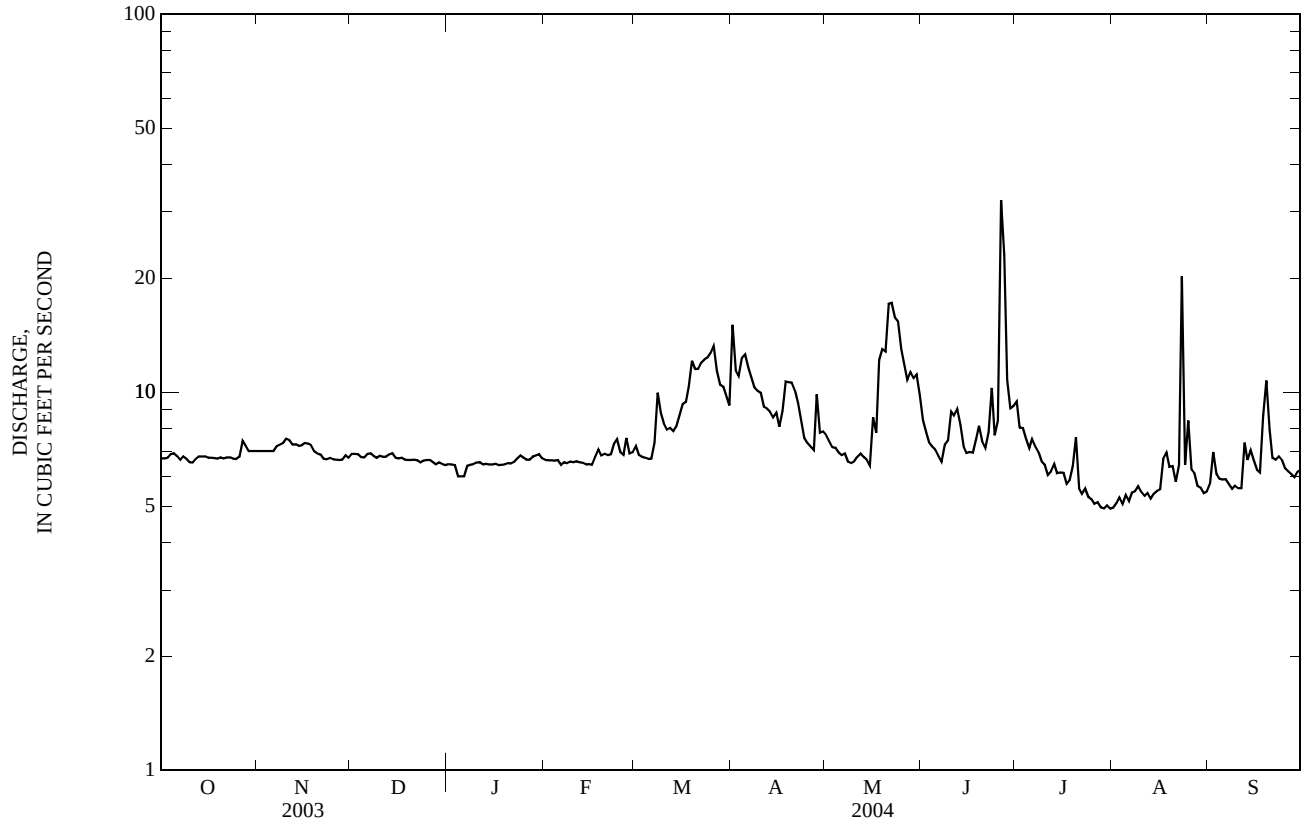
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)

MEAN	9.83	9.75	8.94	8.78	10.6	14.4	16.3	18.9	19.3	11.5	9.51	8.84
MAX	15.0	13.9	12.6	12.6	25.5	29.9	28.6	41.9	61.5	26.0	17.7	13.6
(WY)	(1998)	(1999)	(1999)	(1999)	(1995)	(1997)	(1996)	(1995)	(1995)	(1997)	(1997)	(1995)
MIN	6.78	6.90	6.68	6.49	6.33	7.42	9.36	7.31	8.11	6.07	5.28	5.98
(WY)	(2004)	(2001)	(2004)	(2004)	(1993)	(1991)	(1992)	(1992)	(2000)	(2003)	(2000)	(1992)

12323240 BLACKTAIL CREEK AT BUTTE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004	
ANNUAL TOTAL	3,559.9		2,771.6			
ANNUAL MEAN	9.75		7.57		12.2	
HIGHEST ANNUAL MEAN					19.9	1995
LOWEST ANNUAL MEAN					7.57	2004
HIGHEST DAILY MEAN	117	Mar 14	32	Jun 26	211	Feb 20, 1995
LOWEST DAILY MEAN	5.4	Jul 11	4.9	Jul 29	4.2	Aug 22, 2000
ANNUAL SEVEN-DAY MINIMUM	5.4	Jul 10	5.0	Jul 26	4.4	Aug 19, 2000
MAXIMUM PEAK FLOW			123	Jun 26	b303	Feb 19, 1995
MAXIMUM PEAK STAGE			3.24	Jun 26	5.28	Feb 19, 1995
INSTANTANEOUS LOW FLOW			a4.1	Jul 28	a4.1	Jul 28, 2004
ANNUAL RUNOFF (AC-FT)	7,060		5,500		8,860	
10 PERCENT EXCEEDS	16		11		20	
50 PERCENT EXCEEDS	7.2		6.8		9.7	
90 PERCENT EXCEEDS	6.3		5.7		6.7	

a--Gage height, 0.85 ft.
b--From indirect measurement.
e--Estimated.



12323250 SILVER BOW CREEK BELOW BLACKTAIL CREEK, AT BUTTE, MT

LOCATION.--Lat 45°59'47", long 112°33'45" (NAD 27), in SW¼SE¼NW¼ sec. 23, T.3 N., R.8 W., Silver Bow County, Hydrologic Unit 17010201, on right bank at Interstate 90 overpass in Butte, 0.8 mi upstream from Whiskey Gulch, 1.3 mi downstream from Blacktail Creek, and at river mile 20.2.

DRAINAGE AREA.--103 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

REVISED RECORDS.--WDR-MT-92-1: 1984-90 (M). WDR-MT-98-1: Drainage area. WDR-MT-2000-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,409.47 ft (NGVD 29). October 1983 to Sept. 14, 1997, water-stage recorder 150 ft upstream at elevation 1.40 ft higher. Sept. 15, 1997 to Dec. 3, 1997, no gage in operation due to channel reconstruction during EPA Superfund cleanup operations. Dec. 3, 1997 to Aug. 16, 1999, water-stage recorder 0.8 mi downstream at different elevation. Aug. 16, 1999 to May 10, 2000, water-stage recorder 2.1 mi downstream at different elevation.

REMARKS.--Water-discharge records good. Flow slightly regulated by Silver Bow County sewage treatment plant. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	16	15	15	16	24	15	16	17	13	15
2	14	16	16	15	15	16	19	16	16	16	13	16
3	14	16	16	16	15	16	18	15	16	16	13	15
4	14	16	16	16	15	16	19	15	15	15	13	15
5	14	16	16	15	15	15	20	15	15	15	13	14
6	14	16	16	15	15	16	19	15	15	15	13	15
7	14	16	16	15	15	17	19	15	14	15	13	15
8	15	16	16	15	15	21	18	15	16	15	14	15
9	15	15	16	15	15	19	18	15	16	14	14	14
10	14	16	16	15	15	18	18	15	18	13	13	14
11	15	16	16	15	15	18	17	15	17	13	13	14
12	15	16	16	15	15	18	17	15	17	14	13	18
13	15	16	16	15	15	17	17	15	16	13	13	17
14	15	16	16	15	15	18	16	15	15	14	13	17
15	15	16	16	15	15	18	17	14	15	14	13	16
16	15	16	16	15	15	19	16	18	15	14	14	16
17	15	16	16	15	16	19	18	17	14	13	16	16
18	15	16	16	15	16	20	19	22	14	14	17	19
19	15	16	15	15	15	21	19	22	15	15	16	24
20	15	16	15	15	15	21	19	22	14	17	15	19
21	15	16	15	15	15	21	18	28	14	14	15	17
22	15	16	15	15	15	21	17	29	14	14	16	16
23	15	16	16	15	16	20	16	25	16	14	37	16
24	15	16	15	15	17	21	16	24	14	13	16	16
25	15	16	15	15	16	20	16	22	14	14	21	16
26	15	16	15	15	15	21	15	20	37	13	16	16
27	16	15	15	15	16	19	15	19	37	13	16	16
28	15	15	15	15	15	18	20	20	20	13	15	16
29	16	16	16	15	15	18	16	19	17	13	14	16
30	15	16	16	15	---	17	16	19	17	13	14	16
31	15	---	16	15	---	17	---	18	---	13	14	---
TOTAL	460	477	487	467	442	572	532	569	509	439	469	485
MEAN	14.8	15.9	15.7	15.1	15.2	18.5	17.7	18.4	17.0	14.2	15.1	16.2
MAX	16	16	16	16	17	21	24	29	37	17	37	24
MIN	14	15	15	15	15	15	15	14	14	13	13	14
AC-FT	912	946	966	926	877	1,130	1,060	1,130	1,010	871	930	962

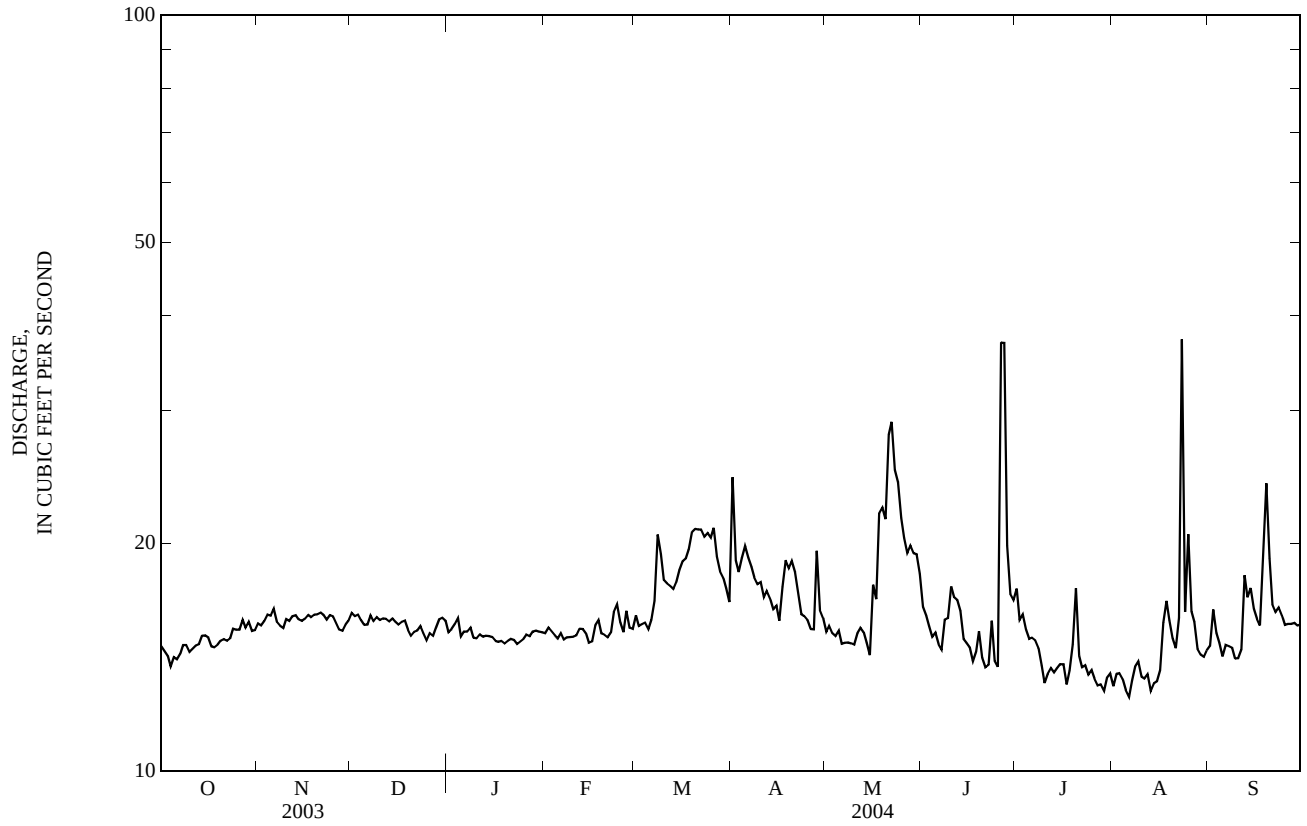
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)

MEAN	19.8	19.5	18.3	17.9	19.8	24.7	27.5	29.6	28.7	21.3	20.0	18.8
MAX	26.7	25.7	24.0	25.6	38.0	40.7	42.2	53.5	75.2	37.0	28.7	25.9
(WY)	(1984)	(1984)	(1998)	(1984)	(1995)	(1997)	(1998)	(1995)	(1995)	(1995)	(1993)	(1995)
MIN	14.7	15.4	14.9	13.4	14.2	17.2	14.9	12.6	15.5	12.4	14.0	14.1
(WY)	(2003)	(2003)	(2003)	(1989)	(2001)	(1991)	(1992)	(1992)	(2000)	(2003)	(2001)	(2000)

12323250 SILVER BOW CREEK BELOW BLACKTAIL CREEK, AT BUTTE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004	
ANNUAL TOTAL	6,603		5,908			
ANNUAL MEAN	18.1		16.1		22.2	
HIGHEST ANNUAL MEAN					30.8	1995
LOWEST ANNUAL MEAN					16.1	2004
HIGHEST DAILY MEAN	136	Mar 14	37	Jun 26	258	Feb 20, 1995
LOWEST DAILY MEAN	11	Jul 11	13	Jul 10	8.0	May 8, 1992
ANNUAL SEVEN-DAY MINIMUM	11	Jul 9	13	Jul 26	11	May 2, 1992
MAXIMUM PEAK FLOW			122	Jun 26	b447	Jul 30, 1998
MAXIMUM PEAK STAGE			2.78	Jun 26	c8.11	Jul 30, 1998
INSTANTANEOUS LOW FLOW			a9.1	Jan 5	6.4	Aug 27, 1996
ANNUAL RUNOFF (AC-FT)	13,100		11,720		16,060	
10 PERCENT EXCEEDS	26		19		32	
50 PERCENT EXCEEDS	15		15		19	
90 PERCENT EXCEEDS	14		14		15	

a--Gage height, 1.42 ft.
b--From culvert computation.
c--Site and datum then in use.



12323250 SILVER BOW CREEK BELOW BLACKTAIL CREEK, AT BUTTE, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to August 1995, December 1996 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	0955	18	7.6	614	5.5	9.0	200	55.0	14.6	3.8	5	.46	1.02
MAR													
17...	0725	18	7.6	578	8.0	3.5	200	56.7	13.6	3.7	6	1.06	1.29
APR													
20...	0825	18	7.5	535	3.0	5.5	170	47.9	12.0	4.7	5	1.07	1.13
MAY													
17...	0915	18	7.6	526	6.5	9.5	180	50.6	12.2	3.4	4	1.02	1.19
JUN													
01...	1525	17	7.7	571	19.5	18.0	190	54.7	13.4	4.6	6	.87	1.07
13...	0755	15	7.7	609	13.0	20.0	220	62.7	14.6	3.3	5	1.54	1.78
JUL													
19...	0845	15	7.6	612	20.5	14.5	200	56.9	13.8	4.9	5	1.27	1.29
AUG													
20...	0815	15	7.6	580	14.0	13.5	200	59.0	13.4	4.6	5	2.02	1.90

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	3.2	25.5	20	490	.20	4.68	286	319	182	227	94	15	.73
MAR													
17...	8.8	29.9	61	390	.30	2.69	495	505	268	278	81	8	.39
APR													
20...	15.7	26.3	46	430	.23	2.29	427	445	242	247	88	11	.53
MAY													
17...	18.3	35.3	32	430	.22	2.01	388	436	227	245	92	8	.39
JUN													
01...	12.4	21.2	14	320	.13	1.72	383	404	162	186	84	6	.28
13...	15.0	29.1	17	370	.12	1.33	505	555	326	346	82	5	.20
JUL													
19...	15.1	24.7	22	130	.22	.85	352	326	314	308	92	3	.12
AUG													
20...	23.9	27.8	26	130	.18	.74	365	350	478	473	75	3	.12

12323600 SILVER BOW CREEK AT OPPORTUNITY, MT

LOCATION.--Lat 46°06'28", long 112°48'17" (NAD 27), in SE¼SW¼SE¼ sec.11, T.4 N., R.10 W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 200 ft downstream from Stuart Street bridge, 0.5 mi east of Opportunity, and 1.0 mi upstream from Mill Creek.
DRAINAGE AREA.--363 mi^2. Prior to water year 2001, drainage area published as 284 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1988 to current year. Prior to October 1991, seasonal records only.
REVISED RECORDS.--WDR MT-2001-01: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 4,912.37 ft (NGVD 29).
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Numerous diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	e20	e25	e22	e28	28	46	34	35	25	13	18
2	16	e21	e24	e22	e28	29	48	34	31	25	13	20
3	17	e24	e24	e21	e28	28	41	35	31	22	14	21
4	18	e20	e24	e20	e28	28	45	35	30	24	14	19
5	19	e19	e24	e19	e28	28	46	34	29	20	15	19
6	19	e21	e23	e23	e28	28	46	35	28	19	13	18
7	19	e22	e23	e27	e28	29	43	32	27	21	13	19
8	19	e23	e22	e30	e28	32	40	28	30	21	13	19
9	19	e24	e22	e35	e28	38	41	26	31	20	14	19
10	19	e25	e22	e30	e28	36	38	26	33	22	13	18
11	19	e24	e22	e30	e28	33	38	33	35	22	13	18
12	20	e23	e22	e30	e28	34	38	32	31	21	12	19
13	21	e22	e22	e29	e28	34	38	32	30	18	12	28
14	24	e22	e22	e29	e28	33	38	30	28	19	12	24
15	25	e23	e22	e29	e28	35	38	28	26	19	14	23
16	25	e24	e22	e29	e28	36	36	30	24	19	12	22
17	24	e25	e22	e28	e28	37	35	37	23	17	14	22
18	23	e25	e22	e28	e28	41	41	38	23	17	16	23
19	23	e24	e22	e28	e28	45	39	49	25	19	16	34
20	24	e23	e22	e28	e28	42	40	46	26	23	15	31
21	24	e19	e22	e28	e28	42	38	60	23	18	13	24
22	24	e20	e22	e28	e28	43	36	60	22	14	14	22
23	23	e22	e22	e28	e28	44	33	68	24	14	41	22
24	23	e23	e22	e28	e28	46	33	58	22	14	26	21
25	23	e24	e22	e28	e28	45	33	50	21	14	23	20
26	24	e25	e22	e28	29	45	33	46	22	14	23	20
27	24	e25	e21	e28	29	44	33	44	67	13	22	20
28	25	e25	e21	e28	29	40	41	42	43	13	20	20
29	26	e26	e20	e28	28	39	38	42	28	13	19	19
30	21	e26	e20	e28	---	40	36	40	28	13	19	20
31	e21	---	e21	e28	---	40	---	38	---	13	18	---
TOTAL	667	689	688	845	815	1,142	1,169	1,222	876	566	509	642
MEAN	21.5	23.0	22.2	27.3	28.1	36.8	39.0	39.4	29.2	18.3	16.4	21.4
MAX	26	26	25	35	29	46	48	68	67	25	41	34
MIN	16	19	20	19	28	28	33	26	21	13	12	18
AC-FT	1,320	1,370	1,360	1,680	1,620	2,270	2,320	2,420	1,740	1,120	1,010	1,270

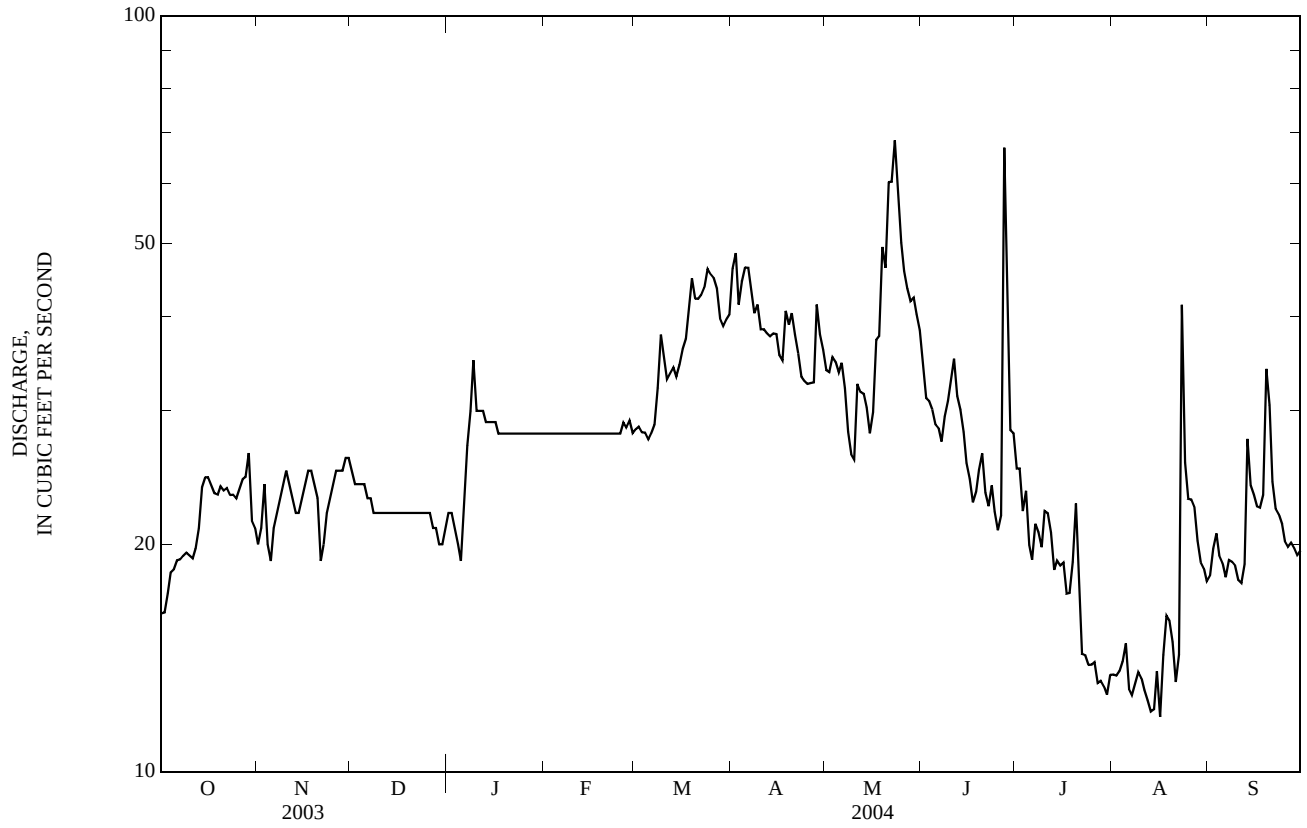
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2004, BY WATER YEAR (WY)

MEAN	36.4	36.0	33.3	36.1	50.1	54.4	63.8	92.8	93.2	44.5	29.2	31.3
MAX	55.8	49.5	49.2	68.6	184	86.6	120	261	281	107	69.5	59.8
(WY)	(1998)	(1996)	(1998)	(1997)	(1996)	(1997)	(1996)	(1997)	(1997)	(1995)	(1993)	(1993)
MIN	21.5	23.0	22.2	22.2	21.9	31.6	39.0	31.3	23.6	16.7	14.5	18.2
(WY)	(2004)	(2004)	(2004)	(2001)	(2001)	(2002)	(2004)	(1992)	(2000)	(2003)	(2000)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1988 - 2004	
ANNUAL TOTAL	14,126		9,830			
ANNUAL MEAN	38.7		26.9		51.3	
HIGHEST ANNUAL MEAN					99.0	1997
LOWEST ANNUAL MEAN					26.9	2004
HIGHEST DAILY MEAN	365	Mar 13	68	May 23	1,300	Feb 11, 1996
LOWEST DAILY MEAN	11	Aug 2	12	Aug 12	11	Aug 2, 2003
ANNUAL SEVEN-DAY MINIMUM	12	Jul 18	13	Aug 10	12	Jul 18, 2003
MAXIMUM PEAK FLOW			a139	Jun 27	d1,300	Feb 11, 1996
MAXIMUM PEAK STAGE			b3.74	Nov 23	b6.91	Feb 11, 1996
INSTANTANEOUS LOW FLOW			c9.1	Aug 20	c9.1	Aug 20, 2004
ANNUAL RUNOFF (AC-FT)	28,020		19,500		37,190	
10 PERCENT EXCEEDS	80		40		93	
50 PERCENT EXCEEDS	24		25		39	
90 PERCENT EXCEEDS	16		17		21	

a--Gage height, 3.67 ft.
b--Backwater from ice.
c--Gage height, 2.05 ft.
d--Estimated daily discharge during a period of ice effect.
e--Estimated.

12323600 SILVER BOW CREEK AT OPPORTUNITY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1993 to August 1995, December 1996 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1993 to September 1995.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 563 mg/L, July 13, 1995; minimum daily mean, 3 mg/L, Sep. 16, 1993; Feb. 3-7, July 22, 1994.
SEDIMENT LOAD: Maximum daily, 495 tons, June 6, 1995; minimum daily, 0.19 ton, Feb. 4-7, 1994.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instan-taneous dis-charge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1220	E25	8.4	566	5.0	0.5	210	60.1	13.9	9.9	17	.76	1.49
MAR													
16...	1540	35	8.8	518	10.0	7.0	190	55.0	12.0	12.1	15	.85	1.18
APR													
20...	1110	43	8.7	485	8.0	6.5	180	52.7	11.5	15.6	16	.57	1.04
MAY													
17...	1140	38	8.4	483	13.0	9.5	180	54.0	11.6	10.8	17	.42	1.08
JUN													
01...	1325	35	8.8	463	16.5	15.0	170	51.9	10.8	12.2	18	.28	.75
13...	1040	30	8.6	499	13.0	12.0	180	54.3	11.1	12.1	17	.27	.80
JUL													
19...	1205	21	9.1	583	25.5	20.5	210	62.3	13.7	20.7	22	.47	1.12
AUG													
20...	1100	16	8.7	633	21.5	17.0	240	71.6	15.0	16.0	24	1.57	3.04

12323600 SILVER BOW CREEK AT OPPORTUNITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover -able, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	25.1	130	7	900	.20	26.9	286	446	237	392	91	23	E1.6
MAR													
16...	46.2	107	15	500	.33	13.1	423	446	129	228	83	10	.95
APR													
20...	25.4	78.0	12	600	.22	14.5	451	548	123	256	85	18	2.1
MAY													
17...	22.1	94.5	14	840	.30	19.4	428	644	115	283	90	21	2.2
JUN													
01...	20.0	70.1	20	470	.24	12.5	266	342	50.9	169	89	12	1.1
13...	18.5	68.4	12	450	.29	12.2	264	342	81.8	203	88	13	1.1
JUL													
19...	35.5	103	11	360	.31	9.81	239	288	49.7	201	70	8	.45
AUG													
20...	67.2	216	7	460	.27	14.7	594	633	204	517	57	12	.52

E--Estimated.

12323700 MILL CREEK AT OPPORTUNITY, MT

LOCATION.--Lat 46°06'57", long 112°49'08" (NAD 27), in SE$^1/_4$SE/4NE$^1/_4$ sec. 10, T.4N., R.10W., Deer Lodge County, Hydrologic Unit 17010201, on right bank at Opportunity, 0.9 mi upstream from Mill-Willow Bypass, and at river mile 0.9.

DRAINAGE AREA .--43.2 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 4,940 ft (NGVD 29).

REMARKS.--Water-discharge records good escept those for estimated daily discharges, which are poor. No regulation. Minor diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.99	e1.5	e2.2	e1.5	e1.9	1.6	2.7	1.4	14	27	1.7	1.6
2	0.98	e1.7	e2.1	e1.5	e1.8	1.5	2.3	1.6	13	26	1.6	2.1
3	0.97	e1.6	e2.0	e1.3	1.9	1.7	1.9	1.6	16	21	1.7	2.0
4	0.96	e1.5	e2.0	e1.0	e1.9	1.8	2.1	2.4	26	22	1.6	1.9
5	0.94	e1.5	e1.9	e0.80	1.9	1.7	2.2	4.4	41	18	1.5	1.8
6	0.95	e1.6	e2.0	e0.90	e1.9	1.8	1.6	6.6	60	14	1.4	1.8
7	1.3	e1.7	e1.9	e0.90	2.0	2.0	1.7	6.9	45	13	1.4	1.6
8	1.1	e1.8	e1.8	e1.0	2.1	2.7	1.7	8.5	38	12	1.3	1.5
9	1.1	e1.9	e1.7	1.1	2.1	3.3	2.2	8.9	34	10	1.1	1.3
10	1.3	e2.0	e1.7	1.1	e2.1	3.4	1.9	9.0	52	9.0	1.1	1.3
11	1.4	e1.9	e1.7	1.2	e2.0	2.7	1.8	9.3	49	6.8	1.0	1.2
12	1.7	e1.8	e1.7	1.2	e2.0	2.9	1.7	7.4	37	6.1	0.96	1.3
13	1.7	e1.7	e1.8	1.2	e1.9	3.1	1.7	5.1	33	5.0	0.97	1.8
14	1.9	e1.6	e1.8	1.2	e2.0	2.8	1.8	4.3	31	4.3	1.1	1.4
15	2.0	e1.7	e1.8	1.3	2.1	2.7	2.0	3.8	31	3.9	1.0	1.3
16	2.2	e1.9	e1.8	1.3	e2.0	2.8	1.8	3.8	27	4.0	1.0	1.1
17	1.9	e2.0	e1.8	1.4	2.1	2.7	1.7	4.4	24	4.0	1.3	0.93
18	1.4	e2.0	e1.9	1.4	2.3	3.2	1.8	3.7	23	3.4	2.0	1.0
19	1.3	e2.0	e2.0	1.5	2.3	4.2	1.8	4.3	25	3.4	2.2	1.5
20	1.2	e1.8	e1.9	1.5	e2.2	3.8	1.7	4.7	25	3.7	1.8	1.5
21	1.0	e1.6	e1.8	1.5	e2.2	3.6	1.5	8.6	25	3.2	1.4	1.5
22	0.91	e1.5	e1.8	1.5	e2.3	4.0	1.5	18	26	2.8	1.5	1.4
23	0.91	e1.6	e1.7	1.6	e2.5	4.6	1.4	22	29	2.6	2.3	1.3
24	0.93	e1.8	e1.8	1.6	2.8	5.9	1.4	19	32	2.5	2.4	1.4
25	1.0	e1.8	e1.8	1.6	2.7	5.5	1.9	17	34	2.7	2.6	e1.3
26	1.2	e1.8	e1.7	1.6	2.3	5.1	1.2	16	32	2.4	2.9	e1.3
27	1.3	e1.9	e1.6	1.7	2.0	4.4	1.3	16	41	1.9	3.1	e1.2
28	1.7	e1.9	e1.3	1.7	1.7	3.9	1.9	19	32	1.9	2.5	e1.2
29	3.0	e2.0	e1.4	1.7	1.7	3.4	1.6	21	27	1.8	2.1	e1.2
30	e2.0	e1.9	e1.3	1.8	---	3.0	1.5	18	32	2.5	1.9	e1.1
31	e1.4	---	e1.4	1.9	---	2.0	---	16	---	1.9	1.7	---
TOTAL	42.64	53.0	55.1	42.50	60.7	97.8	53.3	292.7	954	242.8	52.13	42.83
MEAN	1.38	1.77	1.78	1.37	2.09	3.15	1.78	9.44	31.8	7.83	1.68	1.43
MAX	3.0	2.0	2.2	1.9	2.8	5.9	2.7	22	60	27	3.1	2.1
MIN	0.91	1.5	1.3	0.80	1.7	1.5	1.2	1.4	13	1.8	0.96	0.93
AC-FT	85	105	109	84	120	194	106	581	1,890	482	103	85

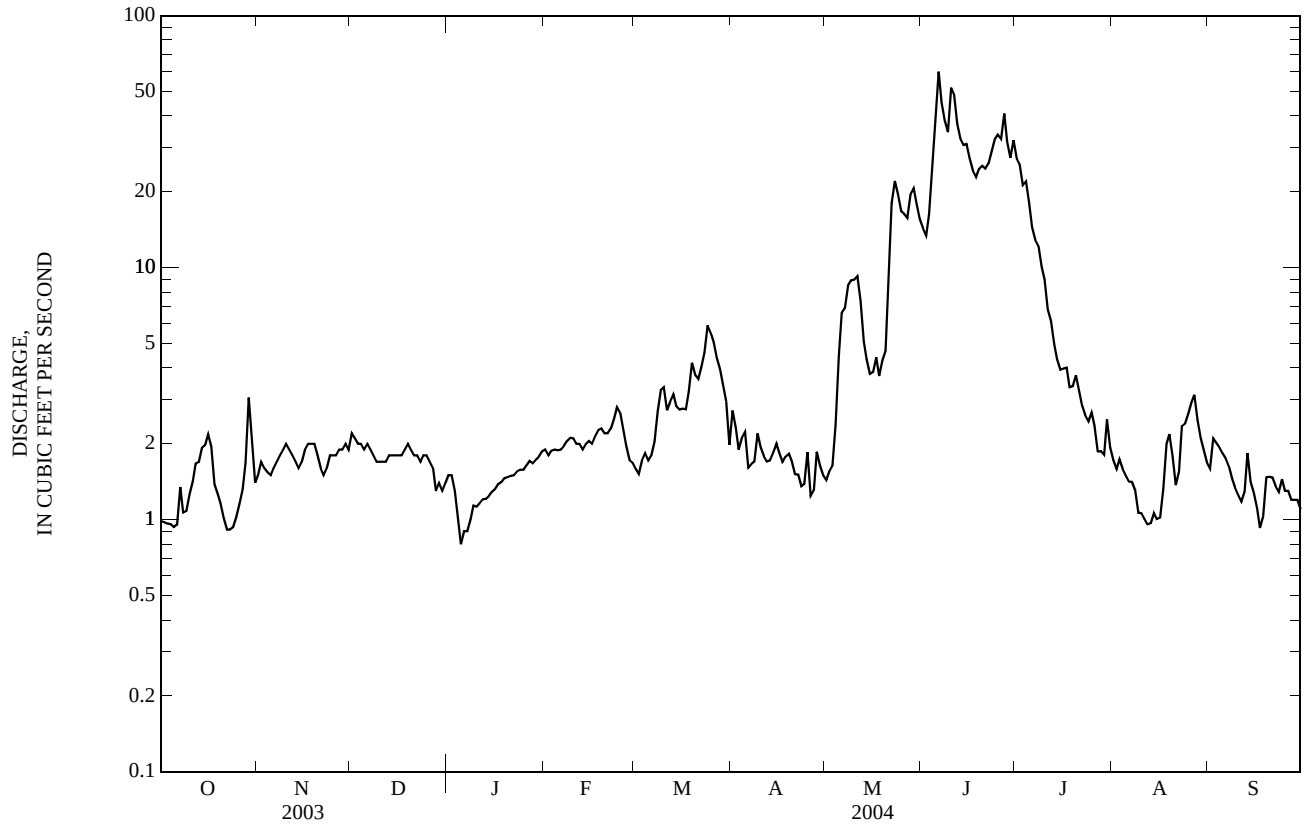
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2004, BY WATER YEAR (WY)

MEAN	1.38	1.77	1.78	1.37	2.09	3.15	8.97	31.6	58.7	9.01	1.98	1.40
MAX	1.38	1.77	1.78	1.37	2.09	3.15	16.2	53.7	85.7	10.2	2.27	1.43
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)	(2003)	(2004)
MIN	1.38	1.77	1.78	1.37	2.09	3.15	1.78	9.44	31.8	7.83	1.68	1.38
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 2003 - 2004	
ANNUAL TOTAL	1,989.50			
ANNUAL MEAN	5.44		5.44	
HIGHEST ANNUAL MEAN			5.44	2004
LOWEST ANNUAL MEAN			5.44	2004
HIGHEST DAILY MEAN	60	Jun 6	260	Jun 1, 2003
LOWEST DAILY MEAN	0.80	Jan 5	0.80	Jan 5, 2004
ANNUAL SEVEN-DAY MINIMUM	0.97	Jan 4	0.96	Sep 28, 2003
MAXIMUM PEAK FLOW	69	Jun 6	284	Jun 1, 2003
MAXIMUM PEAK STAGE	2.10	Jun 6	3.34	Jun 1, 2003
INSTANTANEOUS LOW FLOW			a0.79	Sep 29, 2003
ANNUAL RUNOFF (AC-FT)	3,950		3,940	
10 PERCENT EXCEEDS	18		18	
50 PERCENT EXCEEDS	1.9		1.9	
90 PERCENT EXCEEDS	1.2		1.2	

a--Gage height, 0.89 ft.
e--Estimated.

12323700 MILL CREEK AT OPPORTUNITY, MT—Continued



WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1055	3.6	8.1	219	4.5	1.0	97	26.8	7.31	18.5	20	.10	.13
MAR													
16...	1435	2.9	8.2	221	10.0	4.5	100	27.9	7.68	16.2	16	.08	.08
APR													
20...	0930	1.8	8.0	184	6.0	5.5	79	22.3	5.64	13.9	16	.08	.09
MAY													
17...	1015	4.6	7.9	133	12.0	7.0	55	15.4	3.94	18.5	22	.07	.10
JUN													
01...	1250	15	7.8	110	16.5	10.0	48	14.0	3.18	18.0	22	.06	.11
13...	0920	34	7.8	88	18.0	8.5	39	11.6	2.44	16.2	21	.07	.12
JUL													
19...	1045	3.8	7.9	136	24.5	16.0	59	17.1	3.93	30.5	30	.07	.08
AUG													
20...	0935	1.9	7.9	167	19.0	14.5	75	21.4	5.11	28.9	31	.07	.10

12323700 MILL CREEK AT OPPORTUNITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover -able, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	1.8	2.8	44	110	E.08	.26	7.3	8	7.7	8	82	2	.02
MAR													
16...	2.0	3.0	17	70	E.05	.19	5.0	6	3.2	2	80	1	.01
APR													
20...	2.3	3.5	36	80	E.04	.14	10.6	10	4.4	4	83	1	.00
MAY													
17...	3.0	4.2	48	130	.13	.41	7.7	11	4.5	5	90	2	.02
JUN													
01...	3.1	4.9	38	150	.13	.73	5.5	11	3.5	5	84	5	.20
13...	3.0	5.3	35	160	.14	.93	4.9	12	3.9	5	73	5	.46
JUL													
19...	2.8	4.1	74	130	.19	.43	11.7	13	2.2	2	80	1	.01
AUG													
20...	2.7	3.1	84	150	.15	.29	12.9	14	3.3	3	90	1	.01

E--Estimated.

12323720 WILLOW CREEK AT OPPORTUNITY, MT

LOCATION.--Lat 46°06'22", long 112°48'41" (NAD 27), in NW¼ NE¼ NW¼ sec. 14, T4N., R.10W., Deer Lodge County, Hydrologic Unit 17010201, 1,300 ft upstream from Stuart Street culverts, at Opportunity, 1.2 mi upstream from Mill-Willow Bypass, and at river mile 1.2.
DRAINAGE AREA .--30.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2003 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 4,930 ft (NGVD 29).
REMARKS.--Water-discharge records good except those from July to September, which are fair. No regulation. Minor diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	5.1	5.8	4.6	4.2	4.9	6.8	5.9	19	15	7.1	5.9
2	6.8	5.1	6.0	4.6	4.1	4.8	6.5	5.6	18	15	7.7	6.3
3	6.3	5.2	6.1	4.6	4.1	4.8	6.3	5.7	16	14	8.3	6.4
4	6.2	5.1	5.4	4.6	4.1	4.8	6.7	6.3	17	14	8.5	6.4
5	6.3	5.1	5.2	4.5	4.1	4.8	6.4	6.6	18	14	8.2	6.4
6	6.4	5.0	5.9	4.1	4.1	4.7	6.3	6.9	21	11	7.6	6.8
7	6.6	4.9	5.6	4.1	4.1	4.9	6.5	6.9	21	9.1	7.1	6.8
8	6.4	4.9	5.6	4.0	4.1	5.9	6.4	6.8	25	8.3	7.3	7.0
9	6.1	5.0	5.3	4.0	4.1	6.4	7.2	8.5	27	7.8	7.2	7.2
10	6.2	5.5	5.1	4.0	4.2	6.3	6.4	6.5	26	7.0	7.2	7.4
11	6.1	5.6	5.1	4.1	4.2	6.1	5.9	8.2	26	7.2	7.4	7.4
12	6.0	5.7	5.2	4.1	4.2	6.4	5.8	9.3	21	7.3	7.0	7.6
13	6.0	5.5	5.3	4.1	4.2	6.5	5.9	9.0	19	7.5	7.0	8.0
14	6.1	5.3	5.3	4.1	4.1	6.2	6.2	8.1	17	7.2	7.0	8.0
15	6.2	5.3	5.2	4.1	4.1	6.4	6.4	8.2	16	7.4	6.6	8.3
16	6.0	5.6	5.0	4.1	4.1	6.6	5.8	11	16	7.8	6.5	8.2
17	6.0	5.7	5.0	4.0	4.2	6.5	5.6	15	14	7.3	7.3	7.9
18	6.1	5.9	4.9	4.1	4.6	7.4	5.8	15	13	7.7	7.2	7.8
19	6.2	6.3	4.7	4.1	4.5	7.6	5.7	17	15	7.9	7.0	8.2
20	6.3	5.8	5.0	4.1	4.5	6.7	5.6	13	17	7.8	6.3	8.9
21	6.3	5.4	5.1	4.1	4.5	6.7	5.0	19	14	7.5	5.9	8.0
22	6.3	5.1	5.1	4.1	4.4	6.8	4.9	25	13	7.4	5.6	8.0
23	6.2	5.1	4.9	4.1	4.4	7.0	5.0	25	12	7.4	6.2	7.7
24	6.0	5.1	4.9	4.1	4.5	7.4	5.0	21	12	7.3	5.4	7.7
25	5.9	5.0	5.0	4.1	4.7	7.3	5.0	19	14	7.2	5.4	7.4
26	6.0	5.0	5.0	4.1	4.7	7.2	5.3	19	16	7.4	5.3	7.3
27	6.1	5.1	4.9	4.1	4.7	6.6	5.5	19	20	6.5	5.6	7.4
28	6.3	5.1	4.8	4.1	4.8	6.3	6.4	23	19	6.3	5.6	7.6
29	6.2	5.7	4.9	4.2	4.8	6.0	6.2	25	16	6.2	5.9	7.4
30	5.7	5.6	4.7	4.4	---	5.1	6.2	21	15	6.5	6.0	7.4
31	5.3	---	4.6	4.2	---	5.2	---	21	---	7.0	6.0	---
TOTAL	192.0	159.8	160.6	129.6	125.4	190.3	178.7	416.5	533	267.0	208.4	222.8
MEAN	6.19	5.33	5.18	4.18	4.32	6.14	5.96	13.4	17.8	8.61	6.72	7.43
MAX	7.4	6.3	6.1	4.6	4.8	7.6	7.2	25	27	15	8.5	8.9
MIN	5.3	4.9	4.6	4.0	4.1	4.7	4.9	5.6	12	6.2	5.3	5.9
AC-FT	381	317	319	257	249	377	354	826	1,060	530	413	442

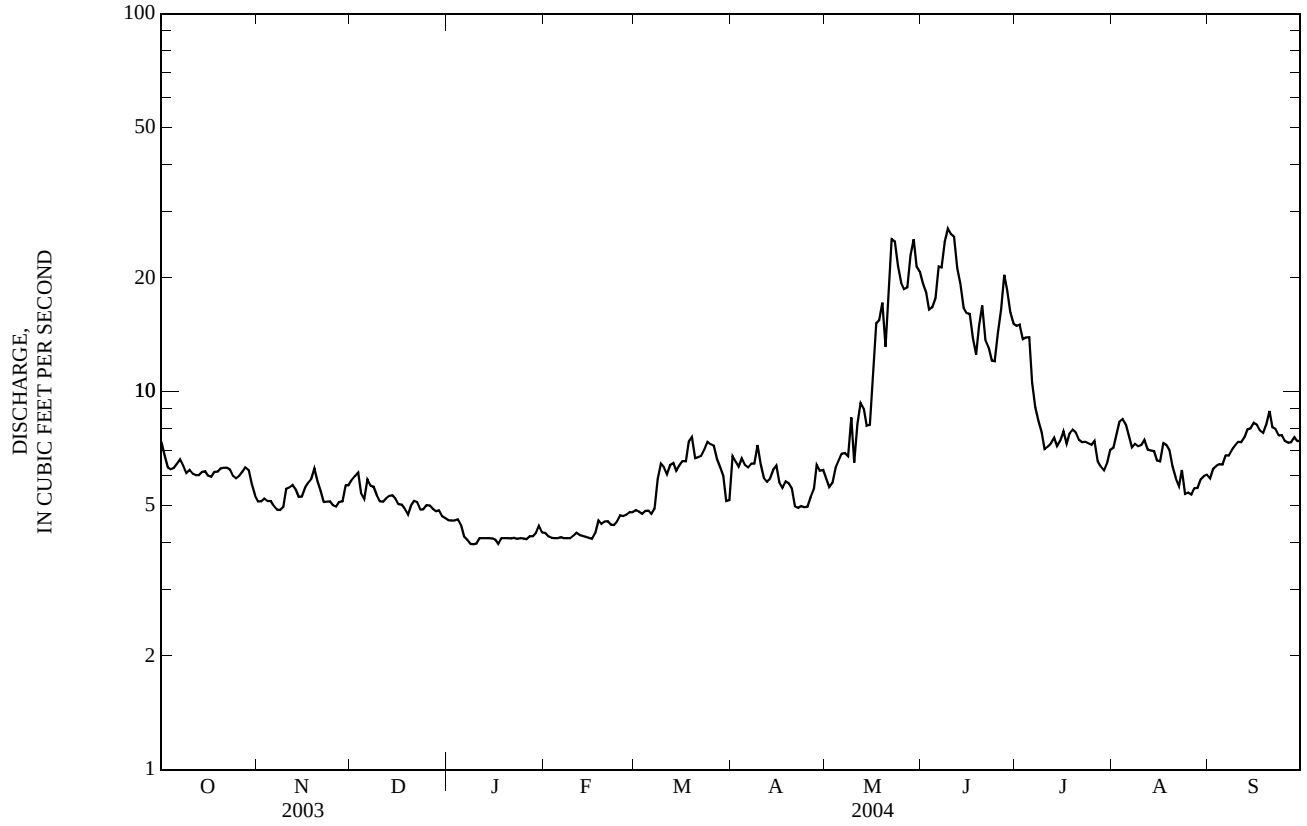
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2004, BY WATER YEAR (WY)

MEAN	6.19	5.33	5.18	4.18	4.32	6.14	10.2	21.8	17.9	7.65	6.52	7.09
MAX	6.19	5.33	5.18	4.18	4.32	6.14	14.5	30.2	18.1	8.61	6.72	7.43
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)	(2004)	(2004)
MIN	6.19	5.33	5.18	4.18	4.32	6.14	5.96	13.4	17.8	6.68	6.32	6.75
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 2003 - 2004	
ANNUAL TOTAL	2,784.1			
ANNUAL MEAN	7.61		7.61	
HIGHEST ANNUAL MEAN			7.61	2004
LOWEST ANNUAL MEAN			7.61	2004
HIGHEST DAILY MEAN	27	Jun 9	61	May 31, 2003
LOWEST DAILY MEAN	4.0	Jan 8	4.0	Jan 8, 2004
ANNUAL SEVEN-DAY MINIMUM	4.1	Jan 6	4.1	Jan 6, 2004
MAXIMUM PEAK FLOW	a29	May 22	65	May 28, 2003
MAXIMUM PEAK STAGE	b4.83	Jun 27	5.00	May 28, 2003
INSTANTANEOUS LOW FLOW	c3.1	Jan 31	c3.1	Jan 31, 2004
ANNUAL RUNOFF (AC-FT)	5,520		5,510	
10 PERCENT EXCEEDS	15		15	
50 PERCENT EXCEEDS	6.2		6.2	
90 PERCENT EXCEEDS	4.2		4.2	

a--Gage height, 4.55 ft.
b--Backwater from algae.
c--Gage height, 3.81 ft.

12323720 WILLOW CREEK AT OPPORTUNITY, MT—Continued



WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1135	5.7	8.1	308	4.5	5.0	130	38.9	9.03	12.0	13	.08	.06
MAR													
16...	1515	6.6	8.2	292	9.5	7.0	130	38.0	9.00	13.5	12	.09	.05
APR													
20...	1015	5.7	8.1	280	6.5	5.0	120	36.1	7.59	13.3	16	E.03	.06
MAY													
17...	1050	16	8.0	371	10.0	8.5	170	47.4	12.0	89.0	96	.09	.16
JUN													
01...	1410	20	8.4	314	19.0	16.0	140	41.2	10.1	81.0	87	.05	.07
13...	0950	21	8.1	321	14.0	10.0	150	44.4	10.5	75.7	79	.05	.07
JUL													
19...	1115	8.3	8.1	320	26.5	13.5	140	40.7	9.11	21.8	21	E.04	.04
AUG													
20...	1010	6.3	7.9	308	19.0	12.0	140	40.6	9.04	15.6	16	E.03	E.03

E--Estimated.

12323720 WILLOW CREEK AT OPPORTUNITY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	2.0	5.7	16	140	.09	1.43	20.2	26	3.4	7	96	4	.06
MAR													
16...	2.7	4.2	18	100	.13	.69	44.6	46	4.0	4	92	3	.05
APR													
20...	2.6	5.0	29	130	E.07	1.02	45.5	43	3.8	7	78	4	.06
MAY													
17...	11.5	18.9	65	330	.21	2.86	39.9	60	19.8	30	85	13	.56
JUN													
01...	6.9	10.0	22	130	.12	1.14	16.7	23	5.8	10	92	5	.27
13...	5.8	7.8	35	100	.11	.68	16.6	20	5.0	7	87	3	.17
JUL													
19...	2.9	3.6	7	30	<.08	.27	4.1	5	1.8	2	82	1	.02
AUG													
20...	2.4	2.8	7	40	E.04	.29	15.9	15	2.3	3	80	1	.02

E--Estimated.

12323750 SILVER BOW CREEK AT WARM SPRINGS, MT

LOCATION.--Lat 46°10'50", long 112°46'46" (NAD 27), in SW¼SE¼SW¼ sec.18, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 1.0 mi upstream from confluence with Warm Springs Creek, 1.1 mi upstream from county highway bridge, and 0.5 mi east of Warm Springs.

DRAINAGE AREA.--473 mi^2; area at site used prior to May 24, 1994, 483 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1972 to September 1979, April 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,800.31 ft (NGVD 29). Prior to May 24, 1994, gage located at sites 0.8 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow is regulated by dam on tailing ponds about 0.2 mi upstream from gage. Diversions for irrigation of about 4,650 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	40	e33	41	44	56	42	78	62	22	26
2	23	28	43	e34	39	44	60	41	74	57	21	28
3	22	29	44	e33	39	44	58	41	71	53	22	27
4	21	31	43	e32	40	44	57	42	75	53	21	28
5	21	31	43	e30	40	47	55	44	85	51	21	27
6	20	32	43	e31	40	47	58	47	102	45	21	26
7	21	32	45	e31	40	45	61	49	94	41	20	26
8	21	32	44	e32	40	49	62	50	85	40	20	25
9	21	34	43	32	40	53	64	51	83	38	20	25
10	21	34	43	33	41	51	62	48	93	35	20	24
11	23	36	44	33	41	47	58	51	96	33	20	24
12	22	37	42	33	40	45	54	52	80	32	21	23
13	21	38	43	34	39	45	50	49	73	31	21	25
14	22	39	45	35	39	44	47	47	68	30	21	25
15	24	40	43	36	39	44	46	47	65	30	21	25
16	26	41	42	37	39	45	43	49	63	29	22	24
17	25	41	41	37	40	44	42	61	59	29	24	25
18	24	40	39	38	42	44	43	62	57	28	25	27
19	24	41	40	39	43	40	45	71	59	29	27	30
20	24	41	41	39	44	36	47	63	64	31	27	36
21	24	39	40	38	43	37	46	67	60	29	26	36
22	24	36	43	38	43	38	45	84	59	28	24	33
23	23	39	40	39	43	35	45	90	60	27	30	31
24	23	38	41	40	43	35	41	88	61	26	28	30
25	23	37	39	40	45	35	41	85	64	25	28	31
26	23	37	39	40	44	35	40	84	64	25	29	31
27	25	38	37	40	44	35	40	84	72	23	29	31
28	27	39	e34	40	43	36	42	92	71	23	29	31
29	28	39	e33	41	44	39	44	98	65	23	27	32
30	25	39	e32	41	---	50	42	87	67	24	27	33
31	26	---	e31	39	---	44	---	83	---	23	27	---
TOTAL	721	1,085	1,260	1,118	1,198	1,321	1,494	1,949	2,167	1,053	741	845
MEAN	23.3	36.2	40.6	36.1	41.3	42.6	49.8	62.9	72.2	34.0	23.9	28.2
MAX	28	41	45	41	45	53	64	98	102	62	30	36
MIN	20	27	31	30	39	35	40	41	57	23	20	23
AC-FT	1,430	2,150	2,500	2,220	2,380	2,620	2,960	3,870	4,300	2,090	1,470	1,680

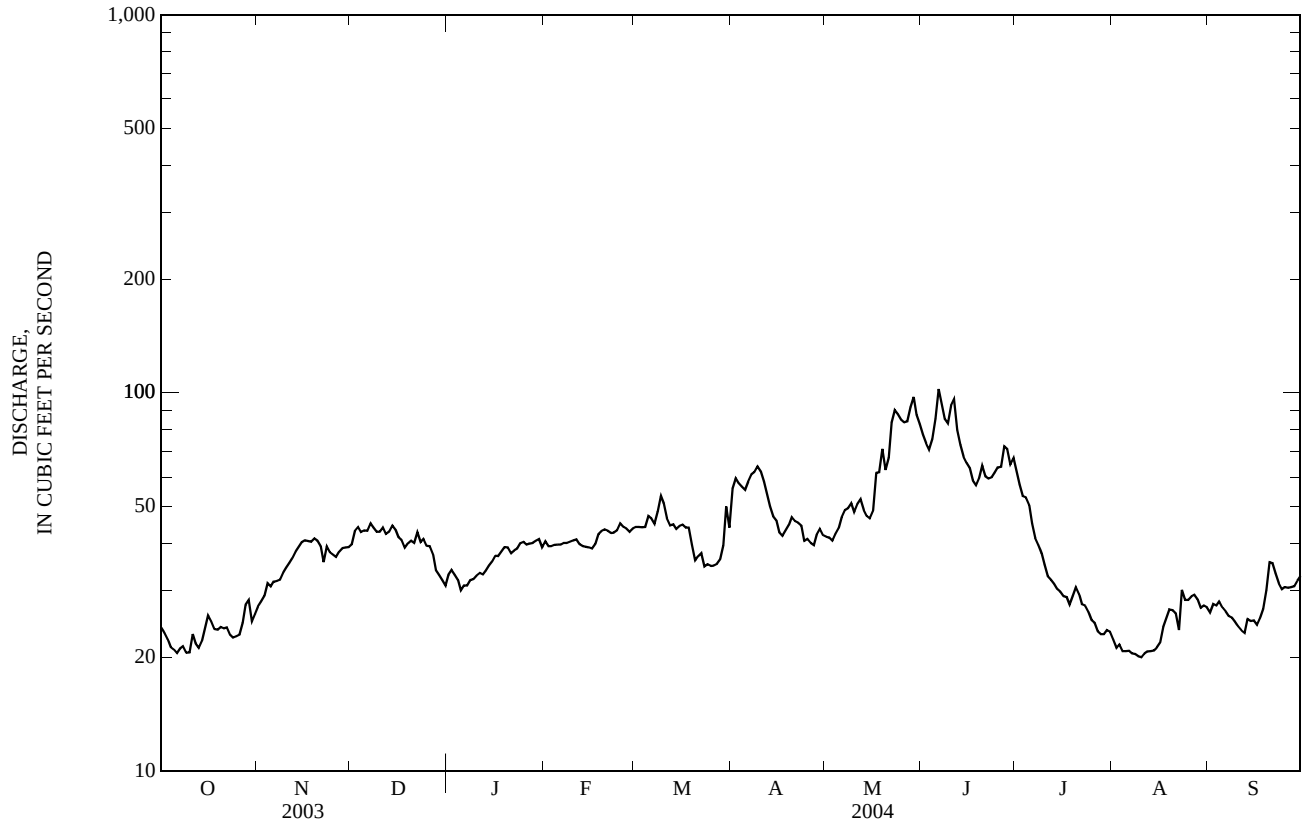
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2004, BY WATER YEAR (WY)*

MEAN	67.8	74.9	70.1	74.3	78.9	107	126	233	263	112	64.6	59.9
MAX	193	161	156	152	130	207	281	586	770	356	201	137
(WY)	(1976)	(1976)	(1976)	(1974)	(1996)	(1976)	(1976)	(1976)	(1975)	(1975)	(1975)	(1975)
MIN	23.3	31.7	30.9	36.1	36.9	42.6	49.8	62.9	57.2	28.8	16.8	20.1
(WY)	(2004)	(2001)	(2002)	(2004)	(2001)	(2004)	(2004)	(2004)	(2000)	(2000)	(2000)	(2000)

12323750 SILVER BOW CREEK AT WARM SPRINGS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1972 - 2004*	
ANNUAL TOTAL	26,192		14,952			
ANNUAL MEAN	71.8		40.9		110	
HIGHEST ANNUAL MEAN					228	1975
LOWEST ANNUAL MEAN					40.9	2004
HIGHEST DAILY MEAN	422	Jun 1	102	Jun 6	1,220	Jun 20, 1975
LOWEST DAILY MEAN	19	Aug 2	20	Oct 6	15	Sep 12, 1973
ANNUAL SEVEN-DAY MINIMUM	21	Jul 28	20	Aug 5	16	Aug 4, 2000
MAXIMUM PEAK FLOW			114	Jun 6	a1,320	Jun 20, 1975
MAXIMUM PEAK STAGE			2.37	Jun 6	b8.64	Jan 16, 1974
ANNUAL RUNOFF (AC-FT)	51,950		29,660		79,680	
10 PERCENT EXCEEDS	144		63		218	
50 PERCENT EXCEEDS	47		39		76	
90 PERCENT EXCEEDS	23		23		32	

*--During periods of operation (March 1972 to September 1979, April 1993 to current year).
a--Gage height, 7.47 ft, site and datum then in use.
b--Backwater from ice, site and datum then in use.
e--Estimated.



12323750 SILVER BOW CREEK AT WARM SPRINGS, MT—Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1993 to September 1995.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 429 mg/L, Mar. 15, 1994; minimum daily mean, 1 mg/L, several days in October 1995.
SEDIMENT LOAD: Maximum daily, 302 tons, June 6, 1995; minimum daily, 0.12 ton, several days in August 1995.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1325	42	9.1	626	5.0	4.0	270	75.2	18.8	26.5	27	E.04	.07
MAR													
16...	1700	44	8.8	586	9.5	5.0	250	72.8	16.8	12.5	13	.11	.14
APR													
20...	1200	50	8.8	600	13.5	9.5	250	73.8	17.1	12.2	16	E.04	.10
MAY													
17...	1245	62	9.1	493	13.0	10.5	220	64.5	15.2	24.1	30	E.03	.13
JUN													
01...	1145	77	9.0	454	17.5	12.5	190	55.5	13.6	34.5	43	E.04	.13
13...	1125	76	8.7	354	16.0	12.5	150	43.9	10.5	34.1	44	E.03	.10
JUL													
19...	1330	30	9.2	540	28.5	22.5	240	70.4	16.2	32.4	35	E.03	.08
AUG													
20...	1205	27	9.1	568	25.0	18.5	260	75.3	17.1	32.3	35	E.03	.07

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	3.7	6.6	E6	110	E.04	.49	65.7	95	3.5	7	64	3	.34
MAR													
16...	5.2	6.9	7	180	<.08	.96	164	178	5.9	9	90	2	.24
APR													
20...	3.3	5.9	11	200	E.05	.88	247	304	3.5	9	90	4	.54
MAY													
17...	4.9	10.4	35	370	.11	1.73	88.9	265	2.2	15	90	8	1.3
JUN													
01...	4.9	8.3	24	260	E.07	1.10	125	214	2.0	11	84	6	1.2
13...	4.1	7.9	34	220	.12	1.17	104	173	2.9	10	86	6	1.2
JUL													
19...	3.5	5.7	8	150	<.08	.62	39.6	102	.9	5	79	4	.32
AUG													
20...	3.4	5.5	11	170	E.04	.71	58.5	104	2.2	6	78	3	.22

E--Estimated.

12323760 WARM SPRINGS CREEK NEAR ANACONDA, MT

LOCATION.--Lat 46°08'01", long 112°54'48" (NAD 27), in SW¼NW¼NE¼ sec. 1, T.4N., R.11W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 0.3 mi downstream from Arbiter Bridge on private road, 1.0 mi upstream from Dutchman Creek, 1.2 mi northeast of Anaconda, and at river mile 9.5.
DRAINAGE AREA.--157 mi^2.
PERIOD OF RECORD.--October 1997 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 5,150 ft (NGVD 29).
REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Storm King Lake. Minor diversions upstream from station for irrigation and municipal use. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	e34	52	23	41	42	51	72	87	95	65	78
2	62	35	57	24	37	42	50	77	87	89	66	80
3	62	37	66	e20	40	42	49	90	90	88	74	75
4	61	36	66	e15	42	43	50	102	111	91	73	74
5	62	e35	57	e15	42	42	51	121	129	84	69	72
6	61	e30	46	e15	40	41	53	122	174	89	67	72
7	61	e30	43	e18	43	43	54	106	147	91	62	72
8	61	34	39	e20	42	62	56	105	139	85	62	69
9	60	32	38	22	41	54	59	101	108	81	62	67
10	60	22	40	31	41	53	55	94	172	83	68	65
11	61	24	39	32	40	49	55	92	179	82	65	65
12	62	24	37	33	38	50	54	84	128	77	62	78
13	58	24	36	35	40	49	57	79	112	78	65	86
14	55	e23	36	36	40	48	61	75	106	76	65	81
15	58	e23	35	38	41	47	62	72	101	71	64	79
16	57	e25	33	39	40	46	60	74	96	69	65	79
17	43	28	36	40	42	47	61	76	91	74	70	76
18	45	35	30	41	43	48	62	74	86	78	90	75
19	49	40	31	42	42	52	60	77	89	82	80	86
20	49	e34	34	48	41	49	59	76	86	88	76	87
21	52	e32	35	50	39	49	56	80	81	83	73	84
22	59	e30	32	47	36	46	56	93	81	79	76	81
23	41	e35	27	48	40	50	56	99	86	75	97	83
24	40	e40	32	44	45	54	56	92	92	64	91	87
25	40	54	e30	43	44	53	55	86	98	63	101	84
26	42	55	e26	42	43	51	54	85	96	65	109	83
27	45	54	e25	42	42	48	58	88	117	72	104	80
28	39	48	e22	42	42	48	71	95	109	77	96	79
29	49	54	e23	43	43	46	68	98	105	74	91	77
30	e36	54	e20	43	---	49	69	93	109	66	84	75
31	e34	---	e23	41	---	50	---	89	---	66	80	---
TOTAL	1,625	1,061	1,146	1,072	1,190	1,493	1,718	2,767	3,292	2,435	2,372	2,329
MEAN	52.4	35.4	37.0	34.6	41.0	48.2	57.3	89.3	110	78.5	76.5	77.6
MAX	62	55	66	50	45	62	71	122	179	95	109	87
MIN	34	22	20	15	36	41	49	72	81	63	62	65
AC-FT	3,220	2,100	2,270	2,130	2,360	2,960	3,410	5,490	6,530	4,830	4,700	4,620

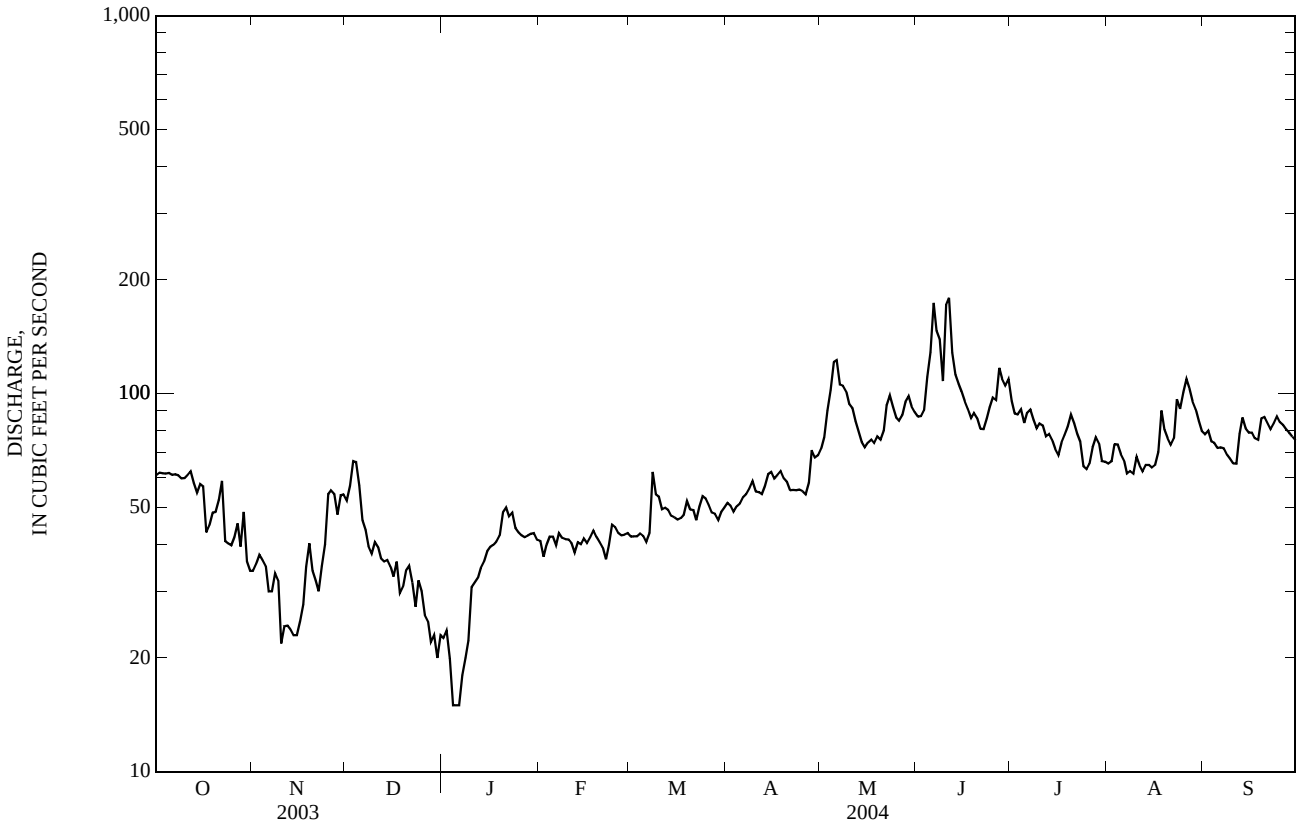
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	76.3	62.1	51.1	49.6	48.7	50.5	55.7	112	183	106	83.8	78.7
MAX	113	99.5	78.6	71.0	68.0	67.3	66.5	159	266	196	99.0	95.1
(WY)	(1998)	(1998)	(1998)	(1998)	(1998)	(1998)	(1998)	(1998)	(2003)	(1998)	(1999)	(1999)
MIN	52.4	35.4	37.0	34.6	40.5	40.8	46.2	70.0	93.0	65.2	63.2	68.4
(WY)	(2004)	(2004)	(2004)	(2004)	(2001)	(2002)	(2001)	(2002)	(2000)	(2000)	(2000)	(2000)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	30,444		22,500			
ANNUAL MEAN	83.4		61.5		79.9	
HIGHEST ANNUAL MEAN					112	1998
LOWEST ANNUAL MEAN					61.5	2004
HIGHEST DAILY MEAN	598	May 31	179	Jun 11	598	May 31, 2003
LOWEST DAILY MEAN	20	Dec 30	15	Jan 4	15	Jan 4, 2004
ANNUAL SEVEN-DAY MINIMUM	24	Nov 10	18	Jan 3	18	Jan 3, 2004
MAXIMUM PEAK FLOW			202	Jun 10	b675	May 31, 2003
MAXIMUM PEAK STAGE			3.13	Jun 10	c4.89	Dec 26, 1998
INSTANTANEOUS LOW FLOW			a10	Jan 6	a10	Jan 6, 2004
ANNUAL RUNOFF (AC-FT)	60,390		44,630		57,880	
10 PERCENT EXCEEDS	175		93		122	
50 PERCENT EXCEEDS	59		58		65	
90 PERCENT EXCEEDS	35		33		42	

a--Gage height, 1.79 ft, result of freezeup, but may have been lower during period of ice effect.
b--Gage height, 4.17 ft.
c--Backwater from ice.
e--Estimated.

12323760 WARM SPRINGS CREEK NEAR ANACONDA, MT—Continued



12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT

LOCATION.--Lat 46°10'50", long 112°47'04" (NAD 27), in SW¼SW¼SW¼ sec.18, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on right bank at I-90 frontage road bridge 0.2 mi southeast of Warm Springs post office, and at river mile 0.9.

DRAINAGE AREA.--163 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year. October 1983 to June 26, 2002 at site 200 ft upstream.

GAGE.--Water-stage recorder. Elevation of gage is 4,810 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Numerous diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	e20	42	e10	e25	33	36	50	31	60	15	21
2	23	e20	43	e10	e25	33	36	50	28	48	13	22
3	18	e20	42	e9.0	e30	33	35	47	29	32	14	23
4	20	e20	39	e8.0	28	34	36	57	37	37	15	25
5	24	e15	36	e8.0	28	33	36	67	60	32	16	23
6	23	e15	33	e8.0	27	33	38	79	92	31	16	23
7	20	e15	31	e9.0	30	33	40	64	88	33	12	23
8	25	e20	29	e10	29	49	41	57	89	32	13	21
9	30	e20	29	e15	30	47	44	56	67	30	12	20
10	33	e20	29	e15	30	45	41	51	97	31	13	19
11	36	19	28	e16	29	41	40	52	112	30	16	17
12	37	19	29	e20	e25	41	39	46	85	29	13	22
13	37	16	30	e20	e25	41	41	43	69	26	14	32
14	32	e15	29	e20	e20	39	43	27	66	25	16	28
15	27	e14	27	e25	e25	38	42	24	62	23	17	27
16	33	15	e25	e25	29	37	39	25	58	21	14	28
17	24	17	e25	e30	31	38	40	27	52	21	16	27
18	24	20	e25	e30	32	38	43	27	50	25	24	26
19	27	25	e25	e32	31	38	42	27	52	28	24	33
20	29	27	e25	e34	30	34	41	23	52	45	20	35
21	28	e25	e25	35	29	34	39	27	46	43	19	33
22	35	e25	25	35	27	32	39	35	43	42	19	42
23	24	e20	e25	34	29	33	39	40	47	37	30	43
24	23	e30	e25	30	34	36	38	36	51	22	30	46
25	22	e45	22	29	35	35	38	33	57	20	32	44
26	21	e40	20	e28	33	34	37	29	58	17	42	42
27	26	e40	20	e27	32	33	39	28	73	16	37	41
28	21	e40	e15	28	32	32	51	33	69	20	31	40
29	25	e45	e13	29	33	31	51	36	67	20	29	38
30	23	45	e11	29	---	31	50	35	68	16	25	36
31	e20	---	e9.0	27	---	32	---	33	---	16	22	---
TOTAL	815	727	831.0	685.0	843	1,121	1,214	1,264	1,855	908	629	900
MEAN	26.3	24.2	26.8	22.1	29.1	36.2	40.5	40.8	61.8	29.3	20.3	30.0
MAX	37	45	43	35	35	49	51	79	112	60	42	46
MIN	18	14	9.0	8.0	20	31	35	23	28	16	12	17
AC-FT	1,620	1,440	1,650	1,360	1,670	2,220	2,410	2,510	3,680	1,800	1,250	1,790

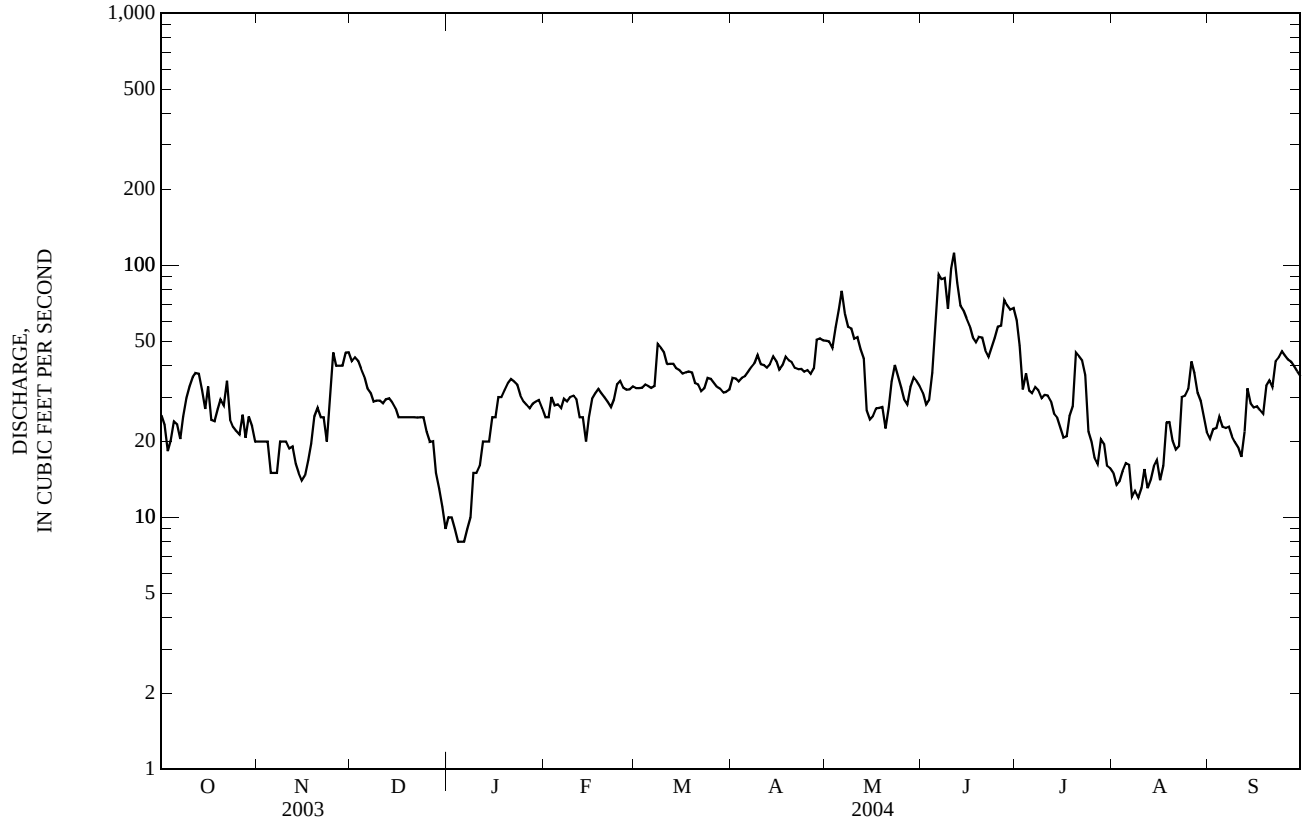
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)

MEAN	43.5	43.4	33.6	35.8	35.8	35.6	42.1	81.3	134	53.1	25.2	32.0
MAX	95.2	84.5	77.8	82.1	63.0	53.5	62.8	196	362	170	125	81.6
(WY)	(1998)	(1998)	(1985)	(1985)	(1986)	(1998)	(1986)	(1997)	(1997)	(1997)	(1997)	(1997)
MIN	10.6	13.1	5.89	4.21	4.54	18.9	13.3	19.3	7.05	0.42	0.46	2.61
(WY)	(1988)	(1993)	(1993)	(1993)	(1993)	(1991)	(1991)	(1992)	(1992)	(1985)	(1988)	(1988)

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004	
ANNUAL TOTAL	18,507.0		11,792.0			
ANNUAL MEAN	50.7		32.2		49.6	
HIGHEST ANNUAL MEAN					108	1997
LOWEST ANNUAL MEAN					16.6	1992
HIGHEST DAILY MEAN	377	Jun 1	112	Jun 11	475	Jun 6, 1997
LOWEST DAILY MEAN	9.0	Dec 31	8.0	Jan 4	0.00	Aug 4, 1988
ANNUAL SEVEN-DAY MINIMUM	16	Dec 25	8.9	Dec 31	0.05	Aug 3, 1988
MAXIMUM PEAK FLOW			a121	Jun 11	c494	Jun 5, 1997
MAXIMUM PEAK STAGE			b5.10	Jan 15	b5.70	Feb 2, 1986
INSTANTANEOUS LOW FLOW					0.00	Aug 4, 1988
ANNUAL RUNOFF (AC-FT)	36,710		23,390		35,920	
10 PERCENT EXCEEDS	108		50		95	
50 PERCENT EXCEEDS	35		30		37	
90 PERCENT EXCEEDS	20		16		7.6	

a--Gage height, 3.52 ft.
b--Backwater from ice.
c--Gage height, 4.55 ft, site and datum then in use.
e--Estimated.



12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT—Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 2000 to current year.

INSTRUMENTATION.--Temperature recorder installed July 6, 2000.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 23.5°C, July 21, 29, 2000, July 14, 2002; minimum 0.0°C, many days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.0°C, July 17; minimum 0.0°C, many days October through March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1305	17	8.6	431	6.5	2.0	220	66.1	12.6	5.4	6	E.03	.04
APR													
20...	1220	42	8.6	340	13.5	7.0	170	51.5	10.3	3.9	5	<.04	E.03
MAY													
17...	1220	27	8.5	339	13.0	8.0	180	53.7	10.1	5.3	7	E.03	E.03
JUN													
01...	1125	32	8.4	312	17.5	10.0	150	47.2	8.02	5.3	6	E.03	E.04
JUL													
19...	1255	26	8.5	311	28.5	18.0	150	45.8	7.61	8.8	9	E.03	E.04
AUG													
20...	1140	22	8.4	362	25.0	14.5	180	58.2	8.98	7.6	8	E.04	.06

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	2.3	7.8	E5	100	<.08	.36	229	235	1.5	3	71	10	.46
APR													
20...	2.6	5.6	10	60	<.08	.29	84.0	94	1.1	2	62	2	.23
MAY													
17...	3.0	6.1	14	70	<.08	.28	71.2	95	1.2	E2	78	2	.15
JUN													
01...	3.2	8.1	11	90	<.08	.43	42.2	83	1.1	2	72	4	.35
JUL													
19...	3.3	7.5	10	80	<.08	.41	23.3	67	.9	E2	67	2	.14
AUG													
20...	3.7	7.7	7	80	<.08	.43	83.9	147	1.7	3	81	2	.12

E--Estimated.

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	7.0	9.5	0.5	0.0	0.0	4.0	2.5	3.0	0.5	0.0	0.0
2	12.5	7.5	10.0	0.5	0.0	0.0	5.0	3.0	3.5	0.5	0.0	0.0
3	12.5	6.0	9.0	0.5	0.0	0.5	4.5	2.5	3.5	0.5	0.0	0.0
4	12.0	6.5	9.0	0.0	0.0	0.0	2.5	0.0	1.0	0.0	0.0	0.0
5	13.5	7.0	10.0	2.5	0.0	0.0	2.5	0.5	1.0	0.5	0.0	0.0
6	11.5	8.0	10.0	0.5	0.0	0.0	4.0	2.5	3.5	0.5	0.0	0.0
7	13.0	8.5	10.5	1.0	0.0	0.0	3.5	1.0	3.0	0.5	0.0	0.0
8	13.0	9.0	10.5	1.5	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
9	10.5	8.5	9.5	0.5	0.0	0.0	1.0	0.0	0.5	0.0	0.0	0.0
10	8.5	6.5	7.5	1.5	0.0	0.5	1.5	0.0	0.5	0.5	0.0	0.0
11	7.5	4.0	5.5	3.0	1.5	2.0	1.5	0.5	1.0	0.0	0.0	0.0
12	9.5	5.0	7.0	3.5	1.5	2.0	2.0	0.0	1.0	0.0	0.0	0.0
13	7.5	5.5	6.5	2.0	0.0	1.0	2.5	1.0	1.5	0.5	0.0	0.0
14	6.5	4.0	5.5	3.5	0.0	0.5	2.5	1.0	2.0	2.0	0.0	0.5
15	7.5	5.0	6.0	3.0	0.0	1.0	1.5	0.0	0.5	0.5	0.0	0.0
16	8.0	4.0	6.0	4.0	1.0	2.0	0.0	0.0	0.0	0.5	0.0	0.5
17	12.0	7.0	9.0	3.0	1.5	2.0	1.5	0.0	0.5	0.5	0.0	0.0
18	11.5	7.5	9.5	5.5	1.0	2.0	0.5	0.0	0.0	0.5	0.0	0.5
19	11.5	7.5	9.0	6.0	3.0	4.0	0.0	0.0	0.0	5.5	0.5	2.5
20	11.0	6.5	8.5	4.0	0.5	2.0	1.0	0.0	0.0	2.5	0.0	1.0
21	12.5	8.0	10.0	0.5	0.0	0.5	2.5	1.0	1.5	1.5	0.0	0.5
22	11.0	7.5	9.0	2.0	0.0	0.0	1.0	0.0	0.5	1.5	0.0	1.0
23	10.0	6.0	8.5	1.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	2.0
24	6.5	4.0	5.0	0.0	0.0	0.0	1.5	0.0	0.5	3.0	2.0	2.5
25	6.0	2.0	4.0	0.0	0.0	0.0	2.5	1.5	1.5	2.0	0.5	1.0
26	8.0	3.0	5.0	0.0	0.0	0.0	1.5	0.5	1.0	1.0	0.0	0.5
27	8.0	6.5	7.5	1.5	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.5
28	9.5	6.5	8.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	1.5
29	9.0	2.0	6.0	3.0	0.0	1.5	0.0	0.0	0.0	3.0	1.5	2.0
30	2.0	0.0	1.0	3.5	2.0	2.5	0.5	0.0	0.5	3.0	0.5	2.5
31	0.0	0.0	0.0	---	---	---	1.0	0.0	0.5	1.0	0.0	0.5
MONTH	13.5	0.0	7.5	6.0	0.0	1.0	5.0	0.0	1.0	5.5	0.0	0.5
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	6.5	2.5	4.0	8.0	4.5	6.0	14.0	6.5	10.5
2	0.0	0.0	0.0	3.5	1.5	2.5	5.0	3.0	4.0	13.0	8.0	11.0
3	1.5	0.0	0.5	2.5	0.0	1.0	10.5	3.5	6.5	15.0	8.5	11.5
4	2.0	0.0	1.0	4.0	1.0	2.5	11.0	6.5	8.5	14.0	8.5	11.5
5	3.0	1.0	2.0	3.5	1.5	2.5	12.0	6.0	8.5	13.0	9.0	11.5
6	1.5	0.0	0.5	4.5	0.0	1.5	11.0	7.5	9.0	12.0	8.0	10.5
7	2.0	0.0	1.0	5.0	0.5	2.5	12.0	6.0	9.0	14.5	8.5	11.0
8	2.0	1.0	1.5	8.5	3.5	5.0	10.5	7.0	8.5	13.5	8.5	11.0
9	2.5	0.5	1.5	7.5	3.0	5.0	9.5	5.5	7.5	13.5	7.0	10.5
10	2.0	0.5	1.0	8.0	3.5	5.5	10.0	3.5	7.0	10.5	7.0	8.0
11	2.5	0.0	1.0	7.5	2.5	4.5	11.5	4.5	8.0	8.5	5.5	6.5
12	0.0	0.0	0.0	7.5	3.0	5.0	13.0	5.5	9.0	8.5	3.0	5.5
13	0.0	0.0	0.0	7.0	3.5	5.0	12.0	7.0	9.5	9.0	4.5	6.5
14	0.0	0.0	0.0	6.0	2.5	4.0	11.0	7.5	9.0	10.0	4.5	7.5
15	2.0	0.0	0.5	7.0	2.5	5.0	10.0	5.5	8.0	12.5	5.5	9.0
16	2.5	0.0	1.0	5.5	4.0	5.0	10.5	4.0	7.5	10.0	8.0	8.5
17	3.0	1.5	2.0	8.0	4.0	5.0	9.0	6.0	7.5	13.0	7.0	9.5
18	4.5	2.5	3.5	10.0	5.0	7.0	10.0	5.5	7.5	10.5	8.5	9.0
19	4.0	2.5	3.0	9.0	5.0	6.5	9.5	5.0	7.0	13.0	7.0	9.5
20	4.5	1.5	3.0	8.0	2.0	5.0	10.0	5.0	7.5	16.0	8.0	11.5
21	3.5	0.5	2.0	10.0	3.5	6.5	10.5	4.0	7.0	12.5	9.5	11.0
22	3.5	0.0	1.5	10.0	4.5	7.0	12.0	4.5	8.0	12.0	8.5	10.0
23	4.0	0.5	2.0	10.5	5.5	8.0	12.5	5.5	9.0	9.5	6.5	8.0
24	5.0	1.0	3.0	9.5	6.0	7.5	11.5	7.0	9.0	10.5	6.0	8.0
25	5.0	2.0	3.5	10.5	5.0	7.5	13.0	5.5	9.0	13.0	5.5	9.0
26	4.5	2.5	3.5	7.5	4.0	6.0	14.5	7.0	10.5	13.0	8.5	10.5
27	6.0	2.0	3.5	6.5	2.0	4.0	14.0	8.5	11.5	14.0	9.5	11.5
28	3.5	2.0	2.5	9.5	3.5	6.0	11.5	5.5	8.0	12.0	9.5	10.5
29	5.0	2.0	3.5	10.5	3.0	6.5	10.5	2.5	6.5	10.0	7.5	8.5
30	---	---	---	11.5	5.0	8.0	12.5	5.0	8.5	11.5	6.5	8.5
31	---	---	---	10.5	6.0	8.0	---	---	---	13.5	7.5	10.0
MONTH	6.0	0.0	1.5	11.5	0.0	5.0	14.5	2.5	8.0	16.0	3.0	9.5

12323770 WARM SPRINGS CREEK AT WARM SPRINGS, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	8.5	12.0	17.5	12.5	15.0	19.0	14.5	16.5	18.0	13.0	15.0
2	17.0	9.5	13.0	17.5	11.5	14.5	17.0	14.5	16.0	16.0	12.0	13.5
3	16.5	10.5	13.5	16.5	12.5	14.5	19.5	14.0	16.5	13.5	8.5	11.0
4	17.5	11.5	14.5	18.0	11.0	14.5	21.0	14.0	17.0	14.0	9.5	11.5
5	17.0	12.0	14.5	19.0	12.0	15.0	19.0	14.5	17.0	14.5	10.0	12.0
6	14.5	11.0	12.5	18.0	12.0	15.0	19.0	13.5	16.0	14.5	9.0	11.5
7	14.5	8.0	11.0	17.0	12.5	14.5	19.0	13.5	16.0	14.0	10.0	12.0
8	11.0	8.0	8.5	17.0	9.5	13.0	19.0	12.0	15.5	14.5	9.5	12.0
9	14.5	7.5	10.0	18.5	10.5	14.0	19.5	12.5	16.0	14.0	10.5	12.0
10	12.0	9.0	10.0	19.0	13.0	16.0	20.0	13.0	16.5	15.0	10.5	12.5
11	12.0	7.5	9.0	17.0	12.5	15.0	19.5	13.0	16.0	15.0	10.5	13.0
12	14.0	7.0	10.5	20.0	11.0	15.5	19.5	12.5	16.0	14.0	11.0	12.0
13	16.0	9.5	12.0	20.5	13.0	17.0	20.0	12.5	16.0	11.5	9.5	10.5
14	15.0	9.0	12.0	22.0	14.5	18.0	20.5	13.0	16.5	11.5	9.5	10.5
15	12.0	8.5	10.0	20.5	15.5	18.0	20.0	13.5	17.0	11.0	8.5	9.5
16	15.0	6.5	10.5	22.0	14.5	18.0	19.0	15.0	16.5	12.5	9.0	10.5
17	14.5	8.5	11.5	23.0	16.0	19.0	19.0	15.0	16.5	10.5	8.5	9.5
18	13.5	8.5	11.0	19.0	16.5	18.0	17.5	15.0	16.0	10.0	8.5	9.0
19	12.5	9.0	10.5	21.5	15.5	18.0	19.0	13.5	16.0	9.0	7.0	8.0
20	15.5	8.0	11.5	20.0	15.0	17.5	18.5	14.0	16.0	9.5	6.5	7.5
21	17.0	9.5	13.0	20.0	13.5	16.5	18.0	13.5	15.5	7.5	6.0	7.0
22	17.5	10.5	14.0	19.5	13.0	16.0	16.0	13.5	15.0	9.0	6.5	7.5
23	18.5	11.5	15.5	20.0	13.0	16.5	14.5	12.0	13.0	10.5	8.5	9.5
24	18.5	12.5	15.5	20.5	13.5	17.0	13.0	10.0	11.5	12.0	8.0	10.0
25	17.5	12.5	14.5	19.0	14.0	16.5	13.0	11.0	12.0	13.0	8.0	10.5
26	17.0	12.0	14.5	21.0	13.5	17.0	13.0	10.0	11.5	13.0	9.0	10.5
27	14.0	12.0	13.0	20.0	13.5	16.5	13.5	10.5	11.5	12.5	8.5	10.5
28	16.5	10.0	13.5	20.5	13.5	16.5	14.5	10.0	12.0	13.0	8.5	10.5
29	16.5	12.0	14.0	20.0	13.5	16.5	16.0	10.5	13.0	12.0	8.0	10.0
30	18.0	12.0	15.0	20.0	13.5	17.0	17.0	11.0	14.0	11.0	8.0	9.5
31	---	---	---	20.5	13.5	17.0	17.5	11.5	14.5	---	---	---
MONTH	18.5	6.5	12.5	23.0	9.5	16.0	21.0	10.0	15.0	18.0	6.0	10.5

12323800 CLARK FORK NEAR GALEN, MT

LOCATION.--Lat 46°12'30", long 112°45'59" (NAD 27), in NE¼NE¼NE¼ sec.7, T.5 N., R.9 W., Deer Lodge County, Hydrologic Unit 17010201, on right bank at upstream side of bridge on county road, 2.6 mi downstream from Silver Bow Creek and Warm Springs Creek, 2 mi south of Galen, and at river mile 482.7.
DRAINAGE AREA.--651 mi^2, area at site used prior to Oct. 1, 1994, 793 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1988 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 4,749.24 ft (NGVD 29).
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by settling ponds on Silver Bow Creek near Warm Springs. Numerous diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	e45	81	e42	e68	79	95	91	114	116	35	38
2	49	e50	86	e45	e68	79	102	91	107	101	31	41
3	43	e52	87	e43	e68	79	100	86	104	83	30	42
4	42	e50	83	e40	69	80	100	96	113	85	31	46
5	46	e45	79	e38	69	83	100	105	140	80	32	45
6	46	e45	76	e38	68	82	102	120	183	72	32	43
7	43	e45	76	e40	70	80	108	112	177	69	26	45
8	49	e45	73	e43	69	94	110	104	169	67	28	42
9	52	54	72	e46	71	103	115	105	151	64	27	41
10	55	59	70	e50	72	98	111	99	179	61	27	39
11	60	58	73	51	72	89	106	102	202	58	31	38
12	63	58	73	53	67	87	101	99	163	56	27	43
13	62	56	73	e56	e65	86	96	94	141	53	29	59
14	58	57	73	e58	e60	84	96	77	132	49	31	56
15	54	56	72	e62	e68	86	93	70	126	46	31	55
16	63	57	69	e65	69	85	85	72	123	43	30	53
17	54	59	69	e68	70	87	83	88	113	41	33	53
18	51	60	e68	e68	75	88	86	89	103	45	43	54
19	54	68	e65	69	75	80	86	100	107	48	46	64
20	56	68	e60	72	74	72	90	87	113	65	40	73
21	54	e60	68	e70	73	70	88	94	106	65	38	73
22	61	e60	e65	e75	71	71	86	118	100	62	33	77
23	52	e65	e65	e70	73	67	87	130	103	59	52	76
24	48	65	62	e70	77	71	81	126	107	45	53	77
25	48	82	60	e68	82	70	82	120	113	41	52	76
26	47	77	59	e68	79	70	80	117	114	38	62	73
27	53	80	56	e68	78	70	82	114	133	34	59	72
28	52	80	e52	71	77	71	93	125	133	38	52	72
29	57	85	e50	72	79	73	97	137	122	39	48	70
30	e50	84	e45	73	---	85	94	128	125	36	44	70
31	e45	---	e40	70	---	80	---	120	---	35	39	---
TOTAL	1,617	1,825	2,100	1,822	2,076	2,499	2,835	3,216	3,916	1,794	1,172	1,706
MEAN	52.2	60.8	67.7	58.8	71.6	80.6	94.5	104	131	57.9	37.8	56.9
MAX	63	85	87	75	82	103	115	137	202	116	62	77
MIN	42	45	40	38	60	67	80	70	100	34	26	38
AC-FT	3,210	3,620	4,170	3,610	4,120	4,960	5,620	6,380	7,770	3,560	2,320	3,380

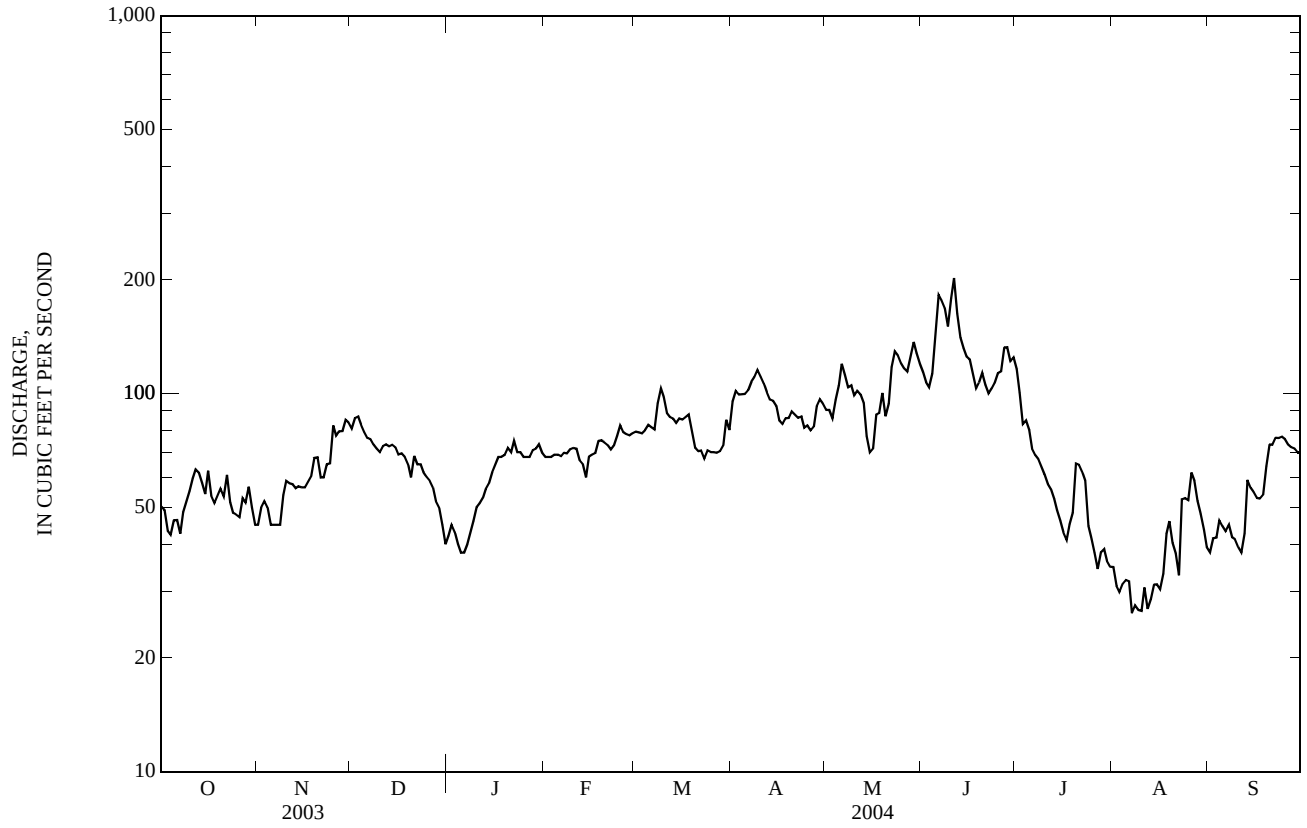
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2004, BY WATER YEAR (WY)

MEAN	88.3	93.8	82.4	84.5	92.5	115	135	246	344	134	69.3	69.9
MAX	170	159	132	169	174	167	257	668	974	381	233	184
(WY)	(1998)	(1998)	(1998)	(1997)	(1996)	(1997)	(1996)	(1997)	(1997)	(1997)	(1997)	(1993)
MIN	40.6	50.7	40.7	42.5	43.5	77.2	80.5	68.6	51.1	21.4	10.2	20.3
(WY)	(1989)	(1993)	(1993)	(1993)	(1993)	(1991)	(1991)	(1992)	(1992)	(1988)	(1988)	(1988)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1988 - 2004	
ANNUAL TOTAL	45,120		26,578			
ANNUAL MEAN	124		72.6		131	
HIGHEST ANNUAL MEAN					288	1997
LOWEST ANNUAL MEAN					59.6	1992
HIGHEST DAILY MEAN	881	Jun 1	202	Jun 11	1,210	Jun 7, 1997
LOWEST DAILY MEAN	29	Aug 1	26	Aug 7	9.7	Aug 11, 1988
ANNUAL SEVEN-DAY MINIMUM	36	Jul 29	28	Aug 7	9.8	Aug 15, 1988
MAXIMUM PEAK FLOW			213	Jun 11	1,240	Jun 7, 1997
MAXIMUM PEAK STAGE			2.56	Jun 11	5.07	Jun 7, 1997
INSTANTANEOUS LOW FLOW			a25	Aug 9	b9.0	Aug 9, 1988
ANNUAL RUNOFF (AC-FT)	89,500		52,720		94,650	
10 PERCENT EXCEEDS	251		111		270	
50 PERCENT EXCEEDS	82		70		89	
90 PERCENT EXCEEDS	48		41		43	

a--Gage height, 1.61 ft.
b--Gage height, 1.39 ft.
e--Estimated.

12323800 CLARK FORK NEAR GALEN, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-74, 1988 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998, October 2000 to September 2002.

REMARKS.--Sampling conducted since 1988 as part of EPA Superfund program.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, June 23, 1991; minimum, 0.0°C, on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1420	59	8.9	575	7.0	4.0	260	74.2	17.1	19.6	20	.04	.06
MAR													
17...	0835	87	8.3	514	12.5	3.5	230	67.9	14.0	7.9	8	.07	.12
APR													
20...	1320	93	8.7	486	5.0	8.0	220	64.5	14.0	12.9	11	E.04	.07
MAY													
17...	1405	89	8.9	451	17.5	10.5	210	62.1	13.8	17.5	21	E.03	.09
JUN													
01...	1035	116	8.7	428	12.5	10.5	190	54.2	12.4	23.9	31	.04	.09
13...	1310	143	8.6	307	14.5	12.5	140	41.0	8.03	21.2	26	E.03	.08
JUL													
19...	1440	49	8.7	442	27.5	20.5	210	61.2	12.8	19.4	20	E.03	.07
AUG													
20...	1310	39	8.7	495	26.0	18.5	240	70.9	14.4	20.2	21	E.03	.07

E--Estimated.

12323800 CLARK FORK NEAR GALEN, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, fltrd, ug/L (01056)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus- pended sedi- ment, percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
NOV													
17...	3.9	8.2	E6	110	<.08	.61	82.2	107	3.0	8	75	2	.32
MAR													
17...	4.0	11.9	7	290	<.08	2.19	181	228	6.7	13	77	9	2.1
APR													
20...	3.5	7.0	8	130	<.08	.66	131	149	3.5	8	78	4	1.0
MAY													
17...	4.7	9.3	23	220	E.07	1.01	67.1	151	1.8	8	86	6	1.4
JUN													
01...	4.8	10.2	20	230	E.06	1.04	90.0	172	2.4	10	82	6	1.9
13...	4.2	10.4	21	200	E.07	1.06	51.9	123	1.7	9	81	7	2.7
JUL													
19...	4.3	7.7	7	100	<.08	.55	48.1	85	.9	4	82	3	.40
AUG													
20...	4.9	7.9	E5	110	<.08	.62	54.2	90	1.9	5	83	3	.32

E--Estimated.

12323850 LOST CREEK NEAR GALEN, MT

LOCATION.--Lat 46°13'07", long 112°46'23" (NAD 27), in NW¼SW¼SE¼ sec. 6, T.5N., R.9W., Deer Lodge County, Hydrologic Unit 17010201, on left bank 40 ft upstream from frontage road bridge, 1.2 mi south of Galen, and at river mile 1.8.

DRAINAGE AREA .--60.5 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 4,750 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. No regulation. Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	e40	49	e45	e41	46	41	16	1.7	1.4	1.5	6.0
2	22	42	51	e44	e40	46	43	7.3	1.6	1.5	1.6	7.2
3	21	43	50	e40	40	46	41	2.0	1.6	1.6	1.7	7.5
4	22	e38	48	e38	41	45	39	1.9	1.5	1.7	1.7	7.2
5	21	e35	47	e35	41	45	38	1.8	1.5	1.6	1.6	7.5
6	22	e36	49	e35	41	45	38	1.7	1.6	1.5	1.6	14
7	22	e40	48	e40	41	46	37	1.8	1.6	1.6	1.6	14
8	22	e45	46	e42	41	49	33	1.6	1.6	1.5	1.6	17
9	24	49	45	e44	41	54	35	1.6	1.6	1.5	1.7	18
10	30	51	45	e42	40	54	33	1.7	1.7	1.5	1.6	18
11	29	53	46	e42	41	50	32	1.9	1.7	1.6	1.5	17
12	30	51	45	42	e40	49	31	1.8	1.6	1.5	1.5	20
13	30	50	45	42	e40	48	30	1.8	1.5	1.5	1.5	25
14	30	49	46	42	e40	48	25	1.7	1.4	1.5	1.6	24
15	31	49	44	42	40	47	21	1.6	1.5	1.5	1.4	23
16	30	49	e44	42	40	47	20	1.9	1.5	1.5	1.5	22
17	30	49	e44	42	41	48	20	2.0	1.4	1.5	1.7	22
18	29	49	e44	e42	46	51	21	2.0	1.5	1.6	1.9	22
19	29	52	e44	41	46	47	21	2.2	1.7	1.7	1.9	24
20	30	50	44	41	44	46	21	2.1	1.6	1.7	1.8	25
21	30	49	44	41	43	46	20	2.3	1.5	1.6	1.7	24
22	30	e48	e43	41	43	45	19	2.7	1.4	1.6	1.8	22
23	30	e45	e43	41	43	46	19	2.8	1.4	1.5	2.8	21
24	30	47	43	42	44	46	18	2.3	1.4	1.5	2.4	21
25	30	e47	44	42	47	46	19	2.0	1.4	1.6	4.0	21
26	31	47	44	41	47	46	17	1.9	1.4	1.6	7.6	22
27	31	47	44	41	46	46	17	1.8	1.5	1.6	8.0	22
28	31	48	e42	41	46	45	19	2.0	1.5	1.6	7.3	22
29	40	49	e40	42	46	42	19	2.1	1.5	1.5	7.0	22
30	e40	49	e38	43	---	36	17	1.9	1.4	1.5	6.9	22
31	e38	---	e40	41	---	35	---	1.8	---	1.5	6.3	---
TOTAL	887	1,396	1,389	1,279	1,230	1,436	804	80.0	45.8	48.1	88.3	559.4
MEAN	28.6	46.5	44.8	41.3	42.4	46.3	26.8	2.58	1.53	1.55	2.85	18.6
MAX	40	53	51	45	47	54	43	16	1.7	1.7	8.0	25
MIN	21	35	38	35	40	35	17	1.6	1.4	1.4	1.4	6.0
AC-FT	1,760	2,770	2,760	2,540	2,440	2,850	1,590	159	91	95	175	1,110

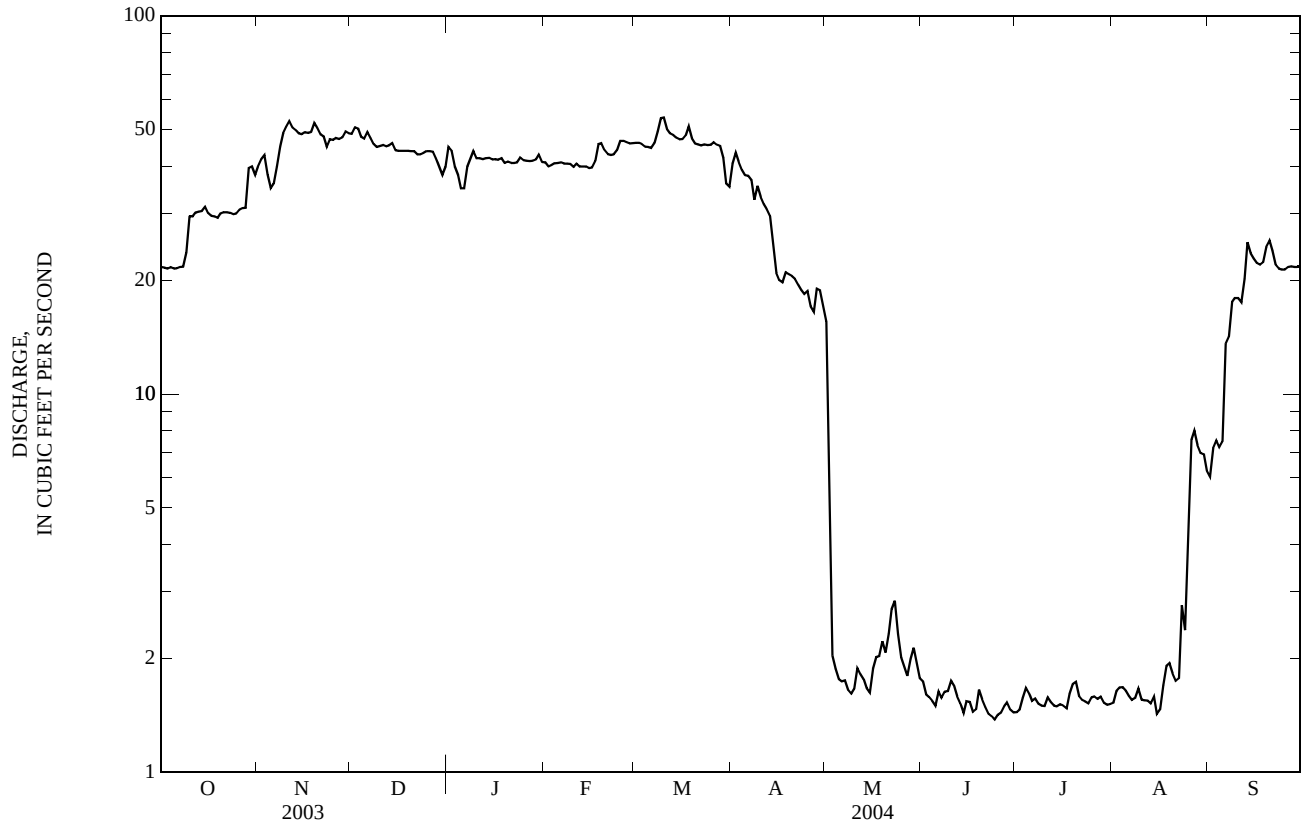
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2004, BY WATER YEAR (WY)

MEAN	28.6	46.5	44.8	41.3	42.4	46.3	30.4	10.6	3.77	2.79	2.80	14.9
MAX	28.6	46.5	44.8	41.3	42.4	46.3	34.0	18.6	6.01	4.03	2.85	18.6
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)	(2004)	(2004)
MIN	28.6	46.5	44.8	41.3	42.4	46.3	26.8	2.58	1.53	1.55	2.75	11.1
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)

12323850 LOST CREEK NEAR GALEN, MT—Continued

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 2003 - 2004	
ANNUAL TOTAL	9,242.6			
ANNUAL MEAN	25.3		25.3	
HIGHEST ANNUAL MEAN			25.3	2004
LOWEST ANNUAL MEAN			25.3	2004
HIGHEST DAILY MEAN	54	Mar 9	60	Apr 1, 2003
LOWEST DAILY MEAN	1.4	Jun 14	1.4	Jul 30, 2003
ANNUAL SEVEN-DAY MINIMUM	1.4	Jun 21	1.4	Jun 21, 2004
MAXIMUM PEAK FLOW	a56	Mar 17	d61	Apr 2, 2003
MAXIMUM PEAK STAGE	b5.34	Jan 5	b5.34	Jan 5, 2004
INSTANTANEOUS LOW FLOW	c1.2	Jun 23	c1.2	Jul 22, 2003
ANNUAL RUNOFF (AC-FT)	18,330		18,290	
10 PERCENT EXCEEDS	47		47	
50 PERCENT EXCEEDS	30		30	
90 PERCENT EXCEEDS	1.5		1.5	

a--Gage height, 2.04 ft.
b--Backwater from ice.
c--Gage height, 1.16 ft.
d--Gage height, 2.08 ft.
e--Estimated.



12323850 LOST CREEK NEAR GALEN, MT—Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1450	49	8.6	585	7.0	4.5	300	86.0	19.6	8.3	8	<.04	.05
MAR													
17...	0900	47	8.4	633	11.0	4.5	320	91.5	21.1	15.5	16	E.03	.08
APR													
20...	1355	20	8.5	607	5.0	8.5	300	87.1	19.7	9.9	12	E.03	.06
MAY													
17...	1335	2.0	8.5	707	17.0	14.0	300	78.9	24.7	11.7	12	E.03	E.03
JUN													
01...	1005	1.8	8.4	682	15.0	11.5	280	73.5	23.5	8.8	9	E.03	E.03
13...	1245	1.5	8.5	623	18.0	15.5	250	64.3	22.3	7.7	8	E.02	E.02
JUL													
19...	1420	1.7	8.4	576	30.0	24.5	220	54.8	20.4	8.2	8	E.02	.04
AUG													
20...	1250	1.8	8.4	608	26.5	19.5	260	67.3	21.3	6.6	6	<.04	E.03

E--Estimated.

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	1.5	6.7	8	170	<.08	.59	7.5	13	1.7	5	32	22	2.9
MAR													
17...	2.5	12.1	9	280	E.04	1.18	17.1	25	2.4	5	83	13	1.6
APR													
20...	2.6	7.8	E5	160	<.08	.69	14.8	19	2.4	5	51	34	1.8
MAY													
17...	3.3	4.4	11	70	<.08	.13	10.2	12	1.1	E1	61	17	.09
JUN													
01...	2.9	4.1	13	50	<.08	.10	10.9	12	1.2	E1	48	24	.12
13...	2.8	3.9	E6	40	<.08	.08	4.1	6	.8	<2	19	14	.06
JUL													
19...	2.6	4.0	<6	40	<.08	.12	2.7	5	E.4	E1	60	4	.02
AUG													
20...	--	4.3	11	20	.19	E.04	1.9	2	.9	E1	86	27	.13

E--Estimated.

12324200 CLARK FORK AT DEER LODGE, MT

LOCATION.--Lat 46°23'52", long 112°44'31" (NAD 27), in SW¼SW¼SW¼ sec.33, T.8 N., R.9 W., Powell County, Hydrologic Unit 17010201, on left bank 35 ft upstream from Milwaukee Avenue Bridge in Deer Lodge, 0.05 mi upstream from Taylor Creek, 0.24 mi downstream from Tin Cup Joe Creek, and at river mile 461.2.

DRAINAGE AREA.--995 mi^2, area at site used prior to Oct. 1, 1994, 1,005 mi^2. Area used Octobert 1994 to September 2000, 916 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,502.24 ft (NGVD 29).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation of about 31,000 acres. Some regulation by settling ponds on Silver Bow Creek near Warm Springs. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	e130	206	e150	182	199	201	152	144	142	37	75
2	135	161	217	e150	189	198	233	145	128	103	38	77
3	128	170	221	e140	184	193	219	131	115	93	39	81
4	127	e160	209	e120	182	199	216	128	111	92	33	76
5	131	e150	200	e110	184	198	211	108	135	93	34	83
6	133	e150	214	e120	172	198	209	119	157	86	35	87
7	129	e150	210	e130	183	198	217	128	187	82	33	90
8	132	162	196	e140	179	233	209	112	175	82	32	90
9	135	164	187	e150	179	267	223	108	168	83	30	89
10	143	184	190	165	178	265	212	104	160	80	30	89
11	150	189	198	166	179	235	197	114	232	77	29	85
12	155	185	196	e160	164	224	188	119	196	70	33	92
13	156	178	196	e160	171	225	182	114	159	68	29	113
14	157	171	202	165	183	215	181	101	144	66	28	119
15	156	179	194	e180	183	212	177	87	136	61	27	113
16	159	177	180	175	177	210	173	84	138	57	28	111
17	157	180	197	e170	178	206	172	100	135	48	31	111
18	149	182	181	e170	195	211	175	107	124	46	34	112
19	147	199	180	176	204	208	176	121	120	48	38	128
20	149	203	190	181	195	190	179	114	126	47	41	149
21	150	184	188	e170	189	185	179	112	120	53	42	152
22	152	e170	e170	e190	181	185	172	146	105	48	40	143
23	153	e160	e170	185	186	182	167	180	97	47	59	142
24	143	e170	178	192	195	186	161	180	93	45	73	139
25	142	e180	182	189	210	188	159	162	95	45	83	138
26	144	192	177	180	205	188	157	148	102	38	90	135
27	142	192	169	181	203	185	152	143	110	47	94	134
28	140	198	156	187	201	181	164	147	139	38	88	133
29	159	210	e150	191	197	179	177	172	122	39	83	129
30	180	212	e140	209	---	176	162	166	120	39	81	128
31	e130	---	e130	193	---	181	---	156	---	37	81	---
TOTAL	4,496	5,292	5,774	5,145	5,408	6,300	5,600	4,008	4,093	2,000	1,473	3,343
MEAN	145	176	186	166	186	203	187	129	136	64.5	47.5	111
MAX	180	212	221	209	210	267	233	180	232	142	94	152
MIN	127	130	130	110	164	176	152	84	93	37	27	75
AC-FT	8,920	10,500	11,450	10,210	10,730	12,500	11,110	7,950	8,120	3,970	2,920	6,630

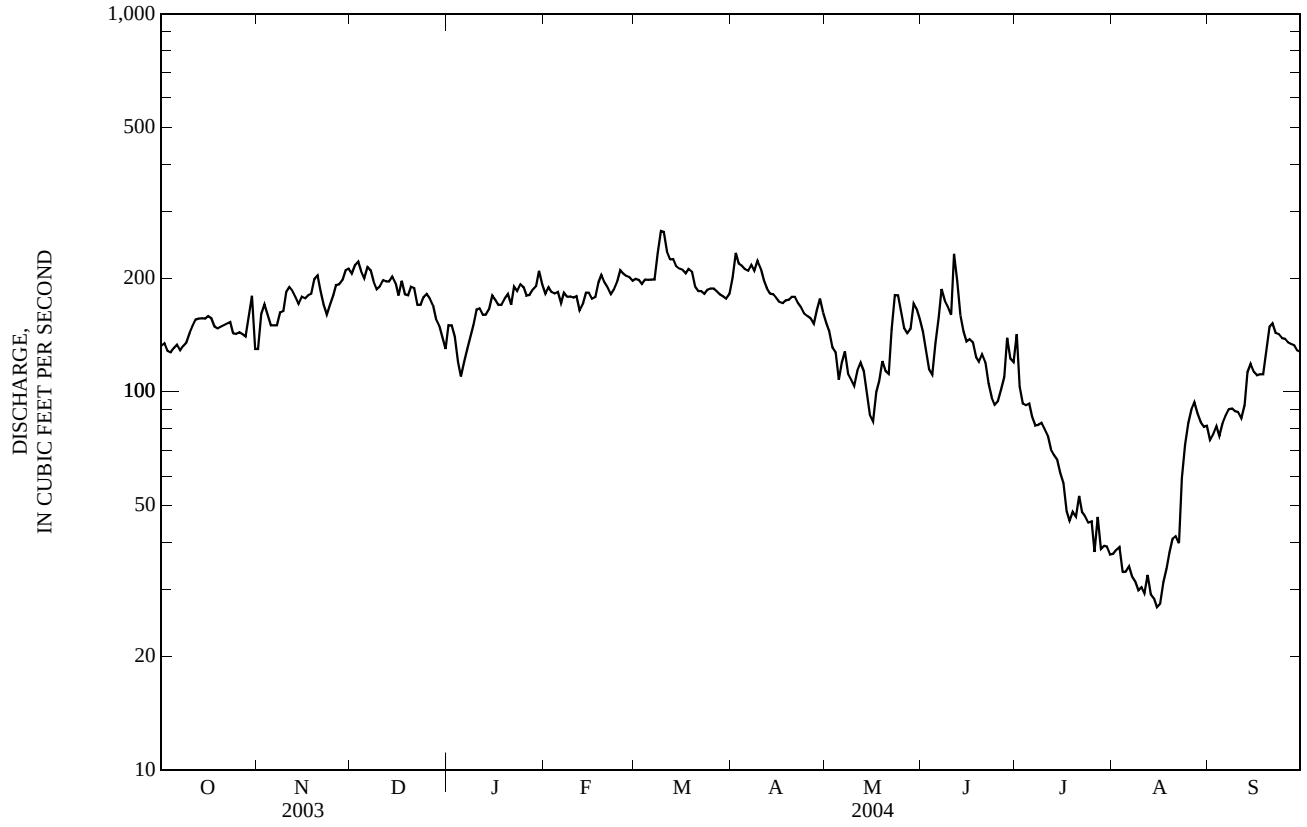
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2004, BY WATER YEAR (WY)

MEAN	236	247	221	221	243	265	277	381	482	211	103	170
MAX	421	384	353	342	481	387	422	971	1,450	593	337	315
(WY)	(1983)	(1981)	(1981)	(1983)	(1982)	(1979)	(1982)	(1981)	(1997)	(1982)	(1997)	(1993)
MIN	115	156	122	140	137	185	161	80.2	57.8	29.9	27.8	57.8
(WY)	(1989)	(1989)	(1993)	(1992)	(1989)	(1991)	(1992)	(1992)	(1992)	(1985)	(1988)	(1988)

12324200 CLARK FORK AT DEER LODGE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1979 - 2004	
ANNUAL TOTAL	76,439		52,932			
ANNUAL MEAN	209		145		254	
HIGHEST ANNUAL MEAN					465	1997
LOWEST ANNUAL MEAN					130	1992
HIGHEST DAILY MEAN	1,020	Jun 1	267	Mar 9	2,390	May 23, 1981
LOWEST DAILY MEAN	36	Jul 31	27	Aug 15	22	Aug 18, 1988
ANNUAL SEVEN-DAY MINIMUM	38	Jul 29	29	Aug 10	23	Aug 9, 1991
MAXIMUM PEAK FLOW			a286	Mar 10	d2,500	May 23, 1981
MAXIMUM PEAK STAGE			b3.76	Jan 6	b5.92	Nov 1, 1991
INSTANTANEOUS LOW FLOW			c26	Aug 15	f21	Aug 6, 1991
ANNUAL RUNOFF (AC-FT)	151,600		105,000		184,300	
10 PERCENT EXCEEDS	358		202		402	
50 PERCENT EXCEEDS	185		156		217	
90 PERCENT EXCEEDS	64		52		90	

a--Gage height, 2.98 ft.
b--Backwater from ice.
c--Gage height 2.16 ft.
d--Gage height 5.35 ft.
e--Estimated.
f--Gage height, 2.19 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963, 1969-71, 1979-83, 1985 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1978 to September 1983, October 1991 to September 1998, seasonal records for May 2001 to September 2002.
SUSPENDED-SEDIMENT DISCHARGE: March 1985 through August 1986, April 1987 to March 2003, August 2003 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE : Maximum, 24.5°C, July 26, 1998, July 11-14, 2002; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 835 mg/L, Feb. 8, 1996; minimum daily mean, 1 mg/L, Aug. 19, 2002.
SEDIMENT LOAD: Maximum daily, 2,840 tons, Feb. 24, 1986; minimum daily, 0.18 ton, Aug. 19, 2002.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 64 mg/L, Mar. 9; minimum daily mean, 3 mg/L, July 16, 17, and 23.
SEDIMENT LOAD: Maximum daily, 46 tons, Mar. 9; minimum daily, 0.38 ton, July 23.

12324200 CLARK FORK AT DEER LODGE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
17...	1540	182	8.6	533	4.5	3.5	240	71.3	16.0	11.5	13	.04	.14
MAR													
17...	1005	204	8.4	533	9.0	5.0	240	71.7	15.9	11.3	12	.06	.18
APR													
20...	1505	179	8.6	520	4.5	9.0	240	69.9	15.3	15.4	13	E.03	.09
MAY													
17...	1505	106	8.5	499	19.0	12.5	240	70.2	14.5	10.9	13	E.04	.10
JUN													
01...	0855	146	8.2	497	11.0	10.5	220	65.0	14.5	17.7	25	.06	.18
13...	1415	155	8.6	385	17.0	15.5	170	51.4	10.8	18.1	23	E.03	.12
JUL													
19...	1540	51	8.6	490	29.0	22.5	210	62.0	13.3	17.8	17	E.02	.14
AUG													
20...	1415	40	8.4	535	25.5	20.0	240	73.4	13.9	14.7	16	E.04	.10

.

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
17...	4.6	21.8	E5	350	<.08	2.48	38.9	81	6.1	25	77	15	7.4
MAR													
17...	5.5	30.3	E6	470	E.06	3.52	61.3	119	6.6	29	76	23	13
APR													
20...	5.4	15.8	8	230	E.04	1.86	41.2	66	4.1	16	76	12	5.8
MAY													
17...	5.6	14.2	10	190	E.06	1.32	37.3	70	4.9	14	88	8	2.3
JUN													
01...	6.1	26.5	11	380	E.07	2.97	36.4	126	4.9	26	88	16	6.3
13...	6.2	19.9	8	230	E.06	1.97	25.0	85	2.4	16	87	11	4.6
JUL													
19...	7.0	10.9	E4	60	<.08	.52	8.1	21	.9	7	92	10	1.4
AUG													
20...	6.6	14.2	<6	160	<.08	1.35	34.1	116	2.6	13	66	19	2.1

E--Estimated.

12324200 CLARK FORK AT DEER LODGE, MT—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21	7.5	10	3.5	16	8.9	11	4.5	36	18	18	9.7
2	16	5.8	11	4.8	16	9.4	12	4.9	29	15	16	8.6
3	14	4.8	14	6.4	16	9.5	12	4.5	24	12	17	8.9
4	14	4.8	16	6.9	16	9.0	12	3.9	22	11	20	11
5	14	5.0	16	6.5	16	8.6	13	3.9	21	10	18	9.6
6	14	5.0	17	6.9	17	9.8	14	4.5	20	9.3	20	11
7	13	4.5	18	7.3	17	9.6	15	5.3	18	8.9	20	11
8	14	5.0	18	7.9	17	9.0	17	6.4	17	8.2	36	23
9	14	5.1	18	8.0	17	8.6	18	7.3	17	8.2	64	46
10	14	5.4	16	7.9	17	8.7	19	8.5	18	8.7	47	34
11	14	5.7	13	6.6	16	8.6	20	9.0	22	11	28	18
12	14	5.9	12	6.0	15	7.9	19	8.2	24	11	27	16
13	14	5.9	11	5.3	14	7.4	18	7.8	24	11	24	15
14	14	5.9	11	5.1	13	7.1	17	7.6	24	12	20	12
15	13	5.5	11	5.3	12	6.3	16	7.8	24	12	22	13
16	13	5.6	11	5.3	11	5.3	14	6.6	24	11	26	15
17	13	5.5	14	6.8	10	5.3	12	5.5	24	12	24	13
18	14	5.6	10	4.9	9	4.4	10	4.6	34	18	29	17
19	14	5.6	9	4.8	9	4.4	9	4.3	43	24	23	13
20	14	5.6	10	5.5	9	4.6	8	3.9	38	20	24	12
21	14	5.7	10	5.0	9	4.6	8	3.7	34	17	23	11
22	13	5.3	10	4.6	9	4.1	8	4.1	29	14	25	12
23	12	5.0	11	4.8	9	4.1	9	4.5	25	13	23	11
24	13	5.0	11	5.0	9	4.3	12	6.2	23	12	20	10
25	13	5.0	11	5.3	8	3.9	22	11	22	12	20	10
26	14	5.4	11	5.7	8	3.8	36	17	22	12	16	8.1
27	14	5.4	11	5.7	10	4.6	46	22	22	12	14	7.0
28	14	5.3	14	7.5	12	5.1	48	24	21	11	18	8.8
29	13	5.6	16	9.1	12	4.9	49	25	21	11	19	9.2
30	11	5.3	16	9.2	12	4.5	48	27	---	---	20	9.5
31	10	3.5	---	---	12	4.2	43	22	---	---	24	12
TOTAL	---	166.2	---	183.6	---	200.5	---	285.5	---	365.3	---	425.4
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	25	14	11	4.5	15	5.8	12	4.6	22	2.2	20	4.0
2	32	20	12	4.7	11	3.8	12	3.3	19	1.9	19	4.0
3	27	16	10	3.5	10	3.1	12	3.0	18	1.9	20	4.4
4	26	15	10	3.5	11	3.3	12	3.0	20	1.8	20	4.1
5	22	13	8	2.3	12	4.4	13	3.3	20	1.8	21	4.7
6	23	13	10	3.2	17	7.2	12	2.8	20	1.9	22	5.2
7	22	13	10	3.5	21	11	12	2.7	19	1.7	22	5.3
8	23	13	7	2.1	18	8.5	13	2.9	16	1.4	23	5.6
9	23	14	7	2.0	19	8.6	12	2.7	14	1.1	23	5.5
10	20	11	8	2.2	23	9.9	10	2.2	15	1.2	23	5.5
11	15	8.0	8	2.5	37	23	7	1.5	20	1.6	23	5.3
12	18	9.1	8	2.6	22	12	5	0.95	26	2.3	22	5.5
13	15	7.4	8	2.5	11	4.7	5	0.92	29	2.3	20	6.1
14	14	6.8	7	1.9	9	3.5	4	0.71	30	2.3	19	6.1
15	15	7.2	15	3.5	9	3.3	4	0.66	28	2.0	18	5.5
16	12	5.6	8	1.8	9	3.4	3	0.46	22	1.7	18	5.4
17	10	4.6	9	2.4	8	2.9	3	0.39	18	1.5	18	5.4
18	10	4.7	8	2.3	7	2.3	7	0.87	17	1.6	18	5.4
19	10	4.8	9	2.9	7	2.3	11	1.4	18	1.8	20	6.9
20	12	5.8	9	2.8	7	2.4	8	1.0	21	2.3	23	9.3
21	11	5.3	11	3.3	6	1.9	6	0.86	24	2.7	23	9.4
22	11	5.1	19	7.5	7	2.0	4	0.52	29	3.1	17	6.6
23	11	5.0	42	20	8	2.1	3	0.38	29	4.6	13	5.0
24	10	4.3	35	17	7	1.8	4	0.49	24	4.7	12	4.5
25	10	4.3	22	9.6	9	2.3	6	0.73	20	4.5	11	4.1
26	10	4.2	13	5.2	14	3.9	14	1.4	18	4.4	11	4.0
27	20	8.2	11	4.2	14	4.2	22	2.8	19	4.8	11	4.0
28	12	5.3	12	4.8	14	5.3	25	2.6	20	4.8	12	4.3
29	9	4.3	26	12	12	4.0	26	2.7	20	4.5	11	3.8
30	7	3.1	21	9.4	11	3.6	26	2.7	21	4.6	11	3.8
31	---	---	24	10	---	---	26	2.6	21	4.6	---	---
TOTAL	---	255.1	---	159.7	---	156.5	---	57.14	---	83.6	---	158.7

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT

LOCATION.--Lat 46°31'11", long 112°47'33" (NAD 27), in NE¼NW¼SE¼ sec.24, T.9 N., R.10 W., Powell County, Hydrologic Unit 17010201, on right bank 20 ft upstream from bridge on frontage road, 0.7 mi southeast of Garrison, and at river mile 0.5.

DRAINAGE AREA.--407 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,343.97 ft (NGVD 29). Prior to Oct. 1, 1992, at site 3.5 mi upstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. A few minor irrigation holding reservoirs in upper reaches of drainage. Diversions for irrigation of about 11,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	e53	59	e50	e55	58	143	176	248	104	44	37
2	33	57	65	e55	e50	57	138	168	225	96	44	40
3	37	e55	69	e50	e55	56	128	169	213	93	47	37
4	39	e50	e60	e40	e60	56	144	154	203	96	46	36
5	41	e40	e60	e30	e60	56	155	145	199	100	46	36
6	44	e45	63	e25	e55	55	156	157	203	91	40	37
7	49	e50	68	e30	e60	54	166	165	204	89	41	37
8	47	e50	61	e40	e65	266	175	166	198	90	43	36
9	45	e55	e60	e45	e65	330	205	171	213	86	41	32
10	45	57	e60	e55	e60	356	198	170	224	88	40	33
11	45	58	58	e50	e55	172	183	177	272	97	36	35
12	46	57	58	e50	e50	143	177	174	249	90	31	42
13	46	e55	58	e50	e50	179	179	166	217	85	20	53
14	46	e50	59	e50	e50	121	188	156	196	75	17	70
15	54	e55	57	e50	e55	104	197	137	181	72	16	61
16	56	56	e55	e50	e55	102	194	127	180	74	16	56
17	55	56	58	e45	e60	127	186	137	170	78	18	53
18	52	57	e55	e45	e90	158	178	136	163	72	22	53
19	52	61	e50	e50	79	187	162	159	159	75	19	64
20	50	64	e55	e50	66	128	164	157	157	80	20	77
21	51	61	e60	e50	62	119	166	179	150	75	20	78
22	53	e55	e55	e55	60	119	149	255	134	73	25	83
23	58	e55	e50	e60	59	125	140	295	114	71	43	87
24	55	e60	e60	e60	60	140	131	282	73	69	45	80
25	53	e60	e55	e55	64	149	131	251	85	67	41	76
26	53	e60	e50	e55	61	140	132	244	95	64	41	76
27	53	e60	e50	e60	60	123	139	251	106	60	42	72
28	55	e65	e50	e65	61	113	172	264	133	60	37	71
29	73	61	e45	e70	60	108	185	273	129	64	38	67
30	65	60	e45	e65	---	112	184	274	115	58	37	65
31	e50	---	e50	e60	---	121	---	260	---	57	37	---
TOTAL	1,532	1,678	1,758	1,565	1,742	4,134	4,945	5,995	5,208	2,449	1,053	1,680
MEAN	49.4	55.9	56.7	50.5	60.1	133	165	193	174	79.0	34.0	56.0
MAX	73	65	69	70	90	356	205	295	272	104	47	87
MIN	31	40	45	25	50	54	128	127	73	57	16	32
AC-FT	3,040	3,330	3,490	3,100	3,460	8,200	9,810	11,890	10,330	4,860	2,090	3,330

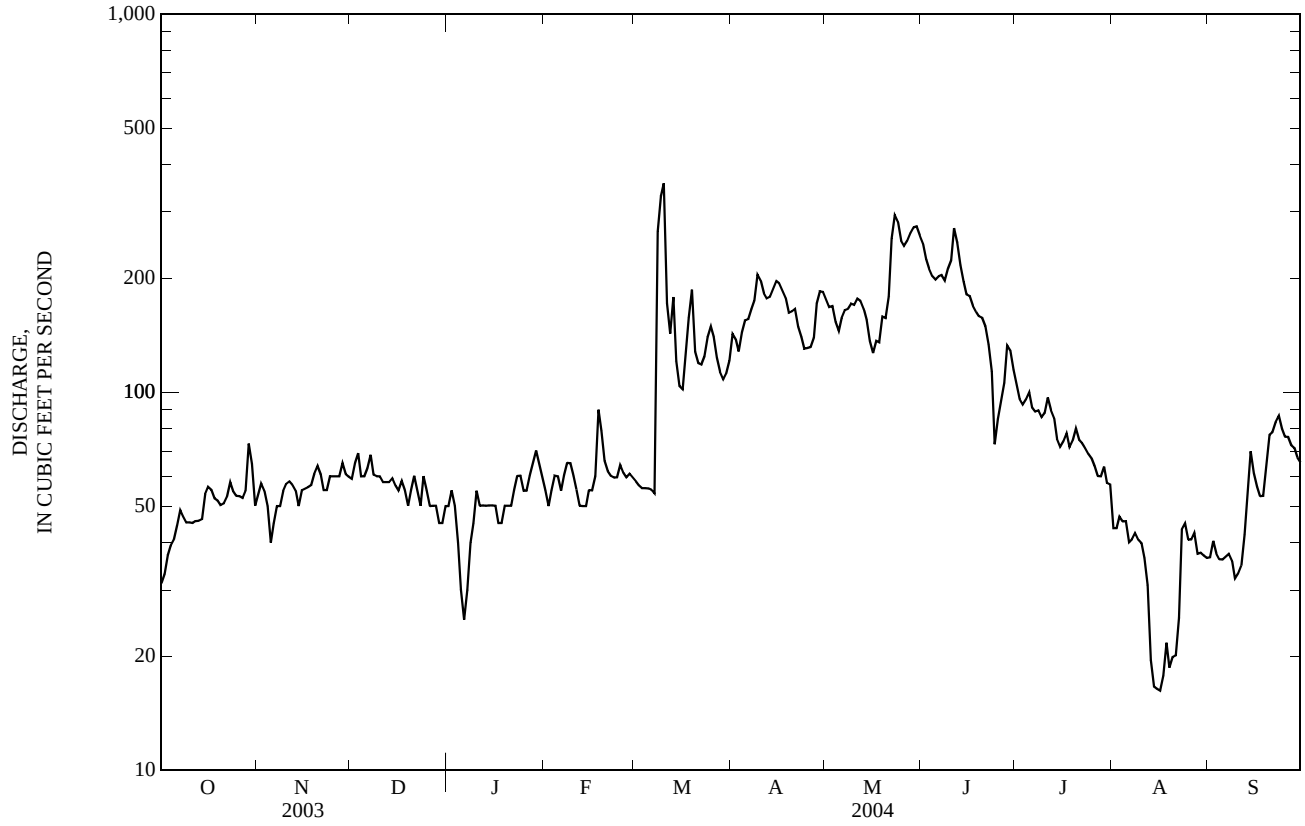
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2004, BY WATER YEAR (WY)

MEAN	70.7	70.0	63.1	61.2	82.7	121	226	481	378	132	60.6	56.4
MAX	129	122	199	135	262	271	486	1,460	1,803	410	191	184
(WY)	(1976)	(1976)	(1976)	(1976)	(1996)	(1986)	(1976)	(1981)	(1975)	(1975)	(1975)	(1993)
MIN	35.4	39.8	32.9	36.3	36.4	55.4	88.8	76.9	60.1	23.6	11.9	19.9
(WY)	(1974)	(1988)	(1993)	(1993)	(1989)	(1975)	(1973)	(1992)	(1992)	(1973)	(1977)	(1977)

12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1972 - 2004	
ANNUAL TOTAL	54,239		33,739			
ANNUAL MEAN	149		92.2		150	
HIGHEST ANNUAL MEAN					322	1975
LOWEST ANNUAL MEAN					58.4	1973
HIGHEST DAILY MEAN	849	Mar 14	356	Mar 10	6,280	May 22, 1981
LOWEST DAILY MEAN	20	Aug 22	16	Aug 15	6.5	Aug 23, 1977
ANNUAL SEVEN-DAY MINIMUM	22	Aug 20	18	Aug 13	6.7	Aug 22, 1977
MAXIMUM PEAK FLOW			711	Mar 8	8,650	May 21, 1981
MAXIMUM PEAK STAGE			3.44	Mar 8	b8.79	May 21, 1981
INSTANTANEOUS LOW FLOW			a16	Aug 14	6.0	Aug 24, 1977
ANNUAL RUNOFF (AC-FT)	107,600		66,920		108,900	
10 PERCENT EXCEEDS	442		183		366	
50 PERCENT EXCEEDS	58		60		74	
90 PERCENT EXCEEDS	30		40		38	

a--Gage height, 0.80 ft.
b--Site and datum then in use.
e--Estimated.



12324590 LITTLE BLACKFOOT RIVER NEAR GARRISON, MT—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963, 1985 to August 2004 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1999 to September 2003.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 29, 30, Aug. 1, 2, 2000; minimum, 0.0°C on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
19...	0810	61	8.2	286	12.0	3.5	140	40.0	8.87	4.4	4	<.04	<.04
APR													
20...	1605	168	8.3	213	7.5	7.5	96	28.3	6.06	6.2	5	<.04	<.04
MAY													
17...	1615	141	8.4	246	16.0	12.0	110	34.0	7.11	4.6	5	<.04	<.04
JUN													
01...	1700	249	8.3	231	22.5	15.0	110	31.4	6.51	4.9	5	<.04	E.03
JUL													
19...	1645	73	8.7	281	31.0	23.0	130	38.8	8.01	6.5	7	<.04	<.04
AUG													
20...	1520	20	8.6	332	28.0	22.0	160	47.4	10.4	6.5	6	<.04	<.04

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recover-able, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
19...	.6	1.1	E5	120	<.08	.20	7.8	24	E.5	E1	79	4	.66
APR													
20...	1.2	1.9	20	240	E.05	.56	8.0	22	.9	3	85	8	3.6
MAY													
17...	1.1	1.6	14	200	<.08	.43	8.7	22	.8	2	86	8	3.0
JUN													
01...	1.1	1.7	18	220	<.08	.46	8.2	22	1.1	3	73	10	6.7
JUL													
19...	.9	1.2	7	60	<.08	.08	9.6	16	<.6	<2	88	2	.39
AUG													
20...	1.1	1.6	E5	80	<.08	.08	12.7	31	E.5	<2	84	3	.16

E--Estimated.

12324680 CLARK FORK AT GOLDCREEK, MT

LOCATION.--Lat 46°35'26", long 112°55'40" (NAD 27), in SE¼NW¼SW¼ sec.25, T.10 N., R.11 W., Powell County, Hydrologic Unit 17010201, on right bank at county road bridge, 0.4 mi north of the town of Goldcreek, 1.1 mi downstream from Gold Creek, and at river mile 434.7.

DRAINAGE AREA.--1,760 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 4,172.80 ft (NGVD 29). June 13 to Oct. 21, 1982, nonrecording gage at site 350 ft downstream at same elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by settling ponds on Silver Bow Creek near Warm Springs. Diversion for irrigation of about 40,100 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	219	294	331	e200	e320	325	409	345	540	259	127	182
2	229	314	342	e220	e300	324	442	334	500	244	121	182
3	231	319	356	e210	e300	315	421	334	466	228	121	180
4	227	305	341	e150	e310	317	425	326	443	244	124	182
5	228	e300	326	e120	e320	319	428	304	443	246	122	180
6	228	281	337	e130	e300	316	420	319	465	239	117	179
7	220	293	346	e180	e310	316	420	345	515	234	112	189
8	217	305	326	e200	e310	666	430	338	512	237	115	189
9	220	334	314	e220	e310	813	472	338	555	242	109	182
10	225	323	326	e240	e300	888	458	334	607	239	105	173
11	238	326	321	e250	e280	557	422	350	905	247	104	171
12	244	318	316	e260	e260	485	399	355	789	227	100	193
13	250	314	317	e260	e250	531	398	334	613	221	95	217
14	250	321	323	e270	e250	444	402	314	517	195	87	238
15	266	322	320	e280	e270	419	405	270	458	183	82	230
16	268	e320	311	e290	e300	416	399	259	417	172	73	226
17	265	312	313	e280	e300	443	381	274	381	170	79	228
18	252	315	298	e280	e320	488	373	290	353	158	100	233
19	248	326	277	e300	e350	508	355	320	336	168	95	257
20	249	339	300	e320	e350	430	355	339	329	202	98	294
21	249	318	326	e310	e330	409	359	353	317	179	100	319
22	249	283	299	e310	321	406	330	473	286	170	104	320
23	267	293	274	e330	316	411	316	575	259	171	157	313
24	257	321	302	e330	324	423	299	592	207	169	168	307
25	262	e320	309	e310	349	433	299	530	202	162	175	311
26	271	322	302	e300	337	423	302	519	217	150	186	307
27	273	331	295	e300	333	406	305	532	237	136	198	302
28	274	e330	249	e310	331	389	340	545	289	139	200	301
29	314	334	e220	e330	325	379	379	593	286	148	195	294
30	322	340	e200	e340	---	370	359	615	262	135	190	286
31	279	---	e180	e340	---	379	---	573	---	139	178	---
TOTAL	7,791	9,473	9,397	8,170	8,976	13,748	11,502	12,322	12,706	6,053	3,937	7,165
MEAN	251	316	303	264	310	443	383	397	424	195	127	239
MAX	322	340	356	340	350	888	472	615	905	259	200	320
MIN	217	281	180	120	250	315	299	259	202	135	73	171
AC-FT	15,450	18,790	18,640	16,210	17,800	27,270	22,810	24,440	25,200	12,010	7,810	14,210

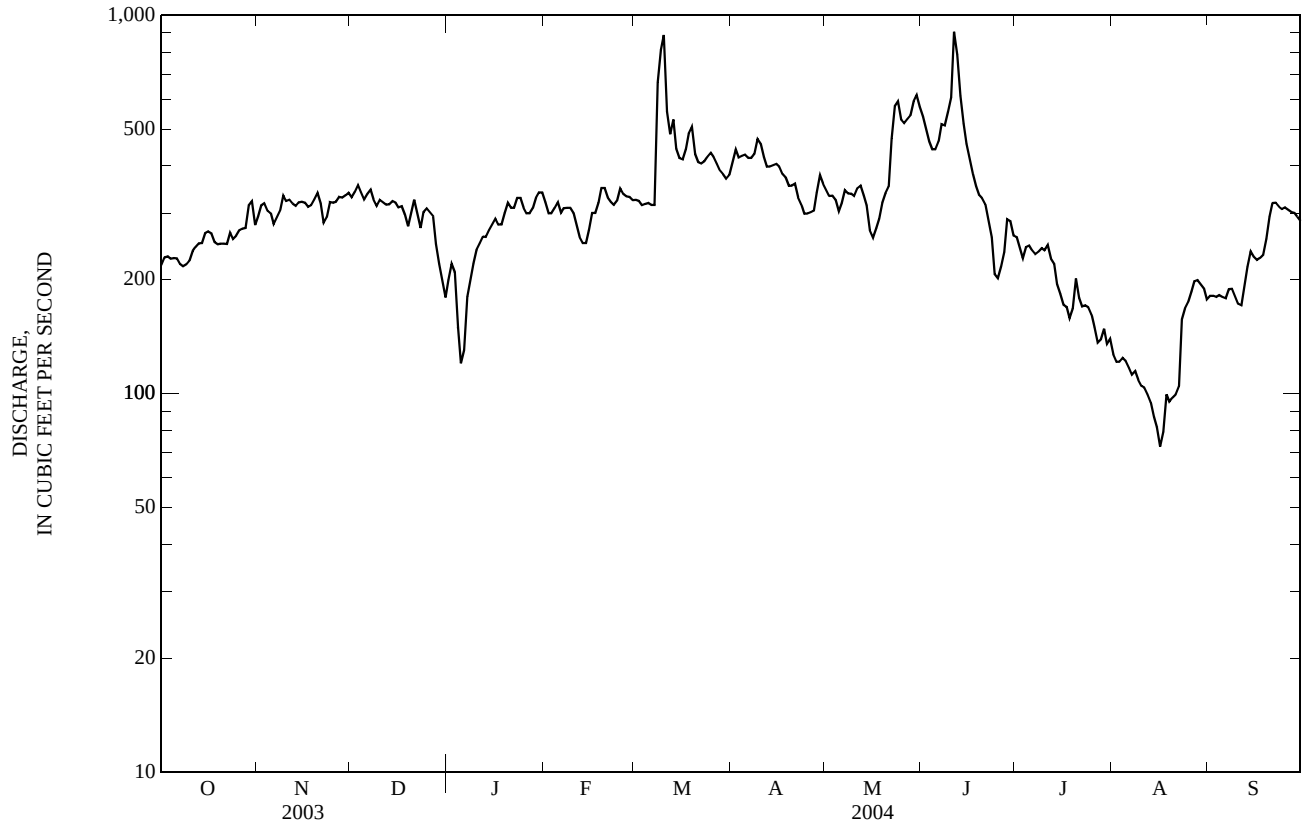
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	390	397	346	345	414	493	598	1,019	1,090	473	229	299
MAX	699	651	622	596	860	721	918	2,914	3,002	1,196	646	707
(WY)	(1983)	(1981)	(1981)	(1984)	(1996)	(1978)	(1996)	(1981)	(1980)	(1982)	(1993)	(1993)
MIN	198	244	193	199	208	306	360	198	138	85.7	67.5	99.8
(WY)	(1989)	(1989)	(1993)	(1988)	(1989)	(1988)	(1992)	(1992)	(1992)	(1985)	(2000)	(1988)

12324680 CLARK FORK AT GOLDCREEK, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	167,810		111,240			
ANNUAL MEAN	460		304		508	
HIGHEST ANNUAL MEAN					860	1981
LOWEST ANNUAL MEAN					243	1992
HIGHEST DAILY MEAN	2,500	Mar 14	905	Jun 11	9,100	May 23, 1981
LOWEST DAILY MEAN	117	Aug 15	73	Aug 16	55	Sep 4, 1988
ANNUAL SEVEN-DAY MINIMUM	126	Aug 14	87	Aug 13	58	Sep 3, 1988
MAXIMUM PEAK FLOW			1,430	Mar 8	b12,000	May 22, 1981
MAXIMUM PEAK STAGE			5.98	Mar 8	c12.50	Jan 2, 1997
INSTANTANEOUS LOW FLOW			a69	Aug 16	d54	Sep 3, 1988
ANNUAL RUNOFF (AC-FT)	332,900		220,600		367,700	
10 PERCENT EXCEEDS	905		443		903	
50 PERCENT EXCEEDS	315		305		376	
90 PERCENT EXCEEDS	162		169		188	

a--Gage height, 3.71 ft.
b--From rating curve extended above 6,500 ft3/s on basis of contracted-opening measurement of peak flow; gage height 11.17 ft, from floodmark.
c--Backwater from ice.
d--Gage height, 3.73 ft.
e--Estimated.



12324680 CLARK FORK AT GOLDCREEK, MT—Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 26, 1995; minimum, 0.0°C on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
18...	0815	317	8.3	474	7.5	2.0	220	64.7	14.2	8.6	10	E.03	.12
MAR													
17...	1145	432	8.6	445	10.0	5.5	210	61.0	12.8	8.8	9	.04	.14
APR													
20...	1710	360	8.6	394	9.5	8.5	180	52.7	11.7	7.3	10	E.02	.07
MAY													
18...	0720	286	8.3	398	11.5	10.0	190	54.7	12.0	8.9	10	E.03	.05
JUN													
02...	1140	507	8.5	351	18.0	12.5	150	46.8	9.05	8.8	10	E.02	.07
13...	1535	607	8.7	298	21.0	15.5	130	40.6	7.64	9.8	12	<.04	.09
JUL													
20...	1355	206	8.6	425	25.0	20.5	200	58.7	12.1	12.0	12	E.02	.06
AUG													
20...	1555	100	8.8	459	29.0	23.0	210	64.0	13.2	13.6	14	<.04	.04

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
18...	3.0	17.3	E4	290	<.08	2.07	21.0	79	5.6	21	86	13	11
MAR													
17...	4.6	23.2	8	450	E.05	2.81	23.4	80	3.4	23	81	23	27
APR													
20...	4.1	11.5	E6	240	<.08	1.30	14.4	46	2.3	12	87	11	11
MAY													
18...	4.3	6.5	8	80	<.08	.38	18.3	27	2.9	6	83	2	1.5
JUN													
02...	3.6	10.4	10	270	E.04	1.24	17.5	61	2.1	11	94	12	16
13...	3.9	12.9	10	280	E.05	1.57	11.5	59	1.5	15	86	15	25
JUL													
20...	4.2	8.1	8	130	<.08	.72	15.0	45	1.4	7	69	7	3.9
AUG													
20...	4.7	6.8	<6	70	<.08	.41	7.7	44	.7	5	72	7	1.9

E--Estimated.

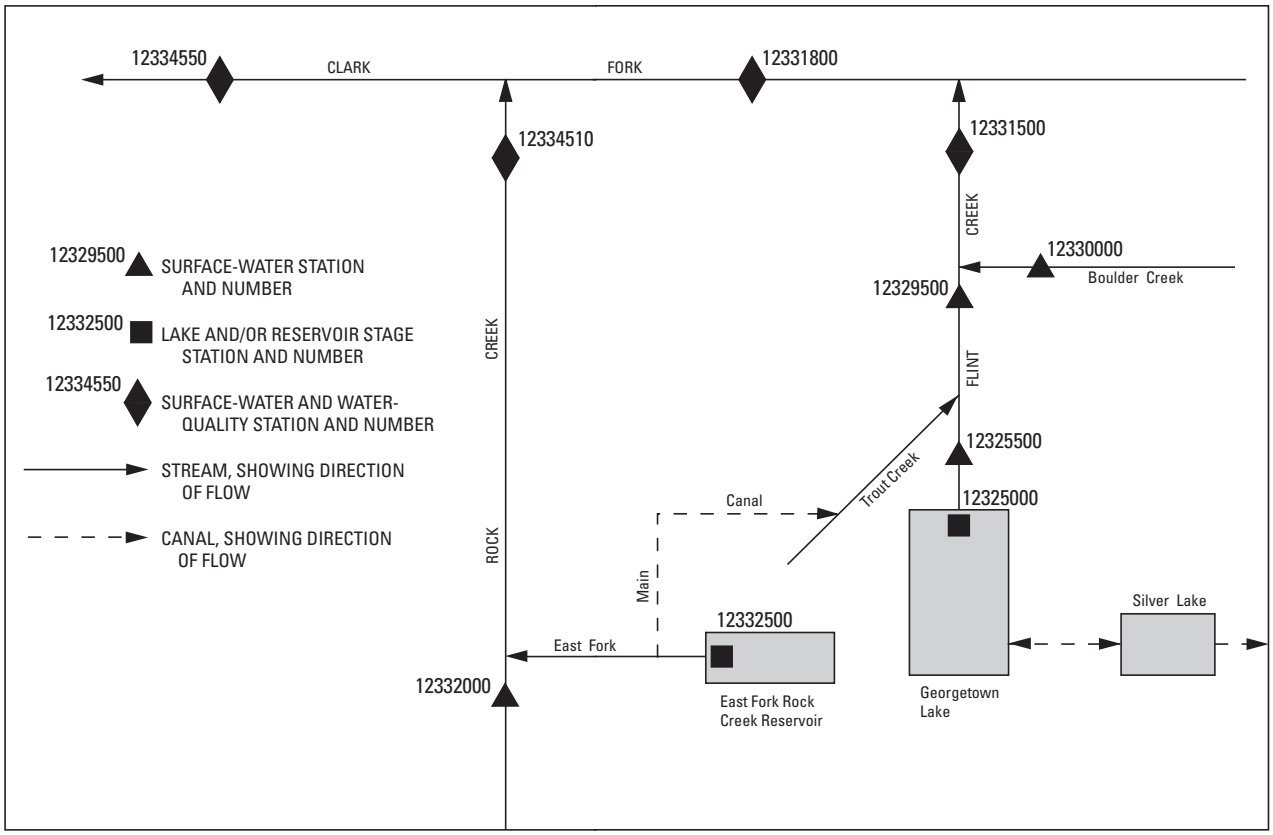


Figure 9. Schematic diagram showing diversions and storage in Flint and Rock Creek basins.

12325500 FLINT CREEK NEAR SOUTHERN CROSS, MT

LOCATION.--Lat 46°13'59", long 113°17'56" (NAD 27), in SE¼NW¼ sec.36, T.6 N., R.14 W., Granite County, Hydrologic Unit 17010202, on right wing wall of weir, 0.5 mi downstream from power plant, 2.0 mi downstream from Georgetown Dam, 3.5 mi northwest of Southern Cross, 6.8 mi south of Philipsburg, and at river mile 36.8.

DRAINAGE AREA.--52.6 mi^2.

PERIOD OF RECORD.--October 1940 to September 1998, August 2000 to current year (seasonal records only).

REVISED RECORDS.--WSP 1216: 1942(M). WSP 1246: Drainage area.

GAGE.--Water-stage recorder and sharp-crested, contracted, rectangular weir. Elevation of gage is 5,630 ft (NGVD 29). Prior to June 3, 1982, nonrecording gage at same site and elevation. Prior to Nov. 27, 1973, gage at same site and elevation 0.20 ft higher.

REMARKS.--Seasonal records good. Flow regulated by Georgetown Lake (station number 12325000). Flow may be augmented by interbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the water year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				9.3	18	32	33	47	30	8.4		
2				9.0	19	32	33	47	30	8.4		
3				9.2	20	32	33	47	30	8.4		
4				9.4	20	32	33	47	30	8.4		
5				9.4	20	32	33	47	30	8.4		
6				9.4	20	32	33	47	30	8.4		
7				9.4	20	32	33	47	30	8.4		
8				9.4	23	32	33	47	30	8.5		
9				9.4	26	31	33	47	30	8.3		
10				9.3	26	32	33	47	31	8.3		
11				9.2	27	32	33	46	31	8.5		
12				9.1	26	32	33	34	30	8.5		
13				9.1	26	32	33	31	30	8.6		
14				9.6	26	32	33	30	30	8.5		
15				9.7	26	32	33	30	24	8.3		
16				9.6	27	32	33	30	17	8.3		
17				9.5	27	32	31	30	16	8.3		
18				9.4	27	32	30	30	15	8.5		
19				9.5	30	32	29	30	15	8.4		
20				9.5	32	31	29	30	15	8.5		
21				9.4	32	31	29	30	14	8.5		
22				9.4	32	31	29	30	10	8.3		
23				9.4	33	31	29	30	8.7	8.4		
24				9.4	33	31	29	30	8.7	8.5		
25				9.4	32	35	30	30	8.7	8.7		
26				9.4	32	36	30	30	8.7	8.7		
27				9.4	32	34	30	30	8.5	8.7		
28				10	32	34	29	30	8.5	8.7		
29				15	32	34	29	30	8.5	8.7		
30				17	32	33	38	30	8.5	8.7		
31				---	32	---	45	30	---	8.7		
TOTAL				295.2	840	968	994	1,121	616.8	262.9		
MEAN				9.84	27.1	32.3	32.1	36.2	20.6	8.48		
MAX				17	33	36	45	47	31	8.7		
MIN				9.0	18	31	29	30	8.5	8.3		
AC-FT				586	1,670	1,920	1,970	2,220	1,220	521		

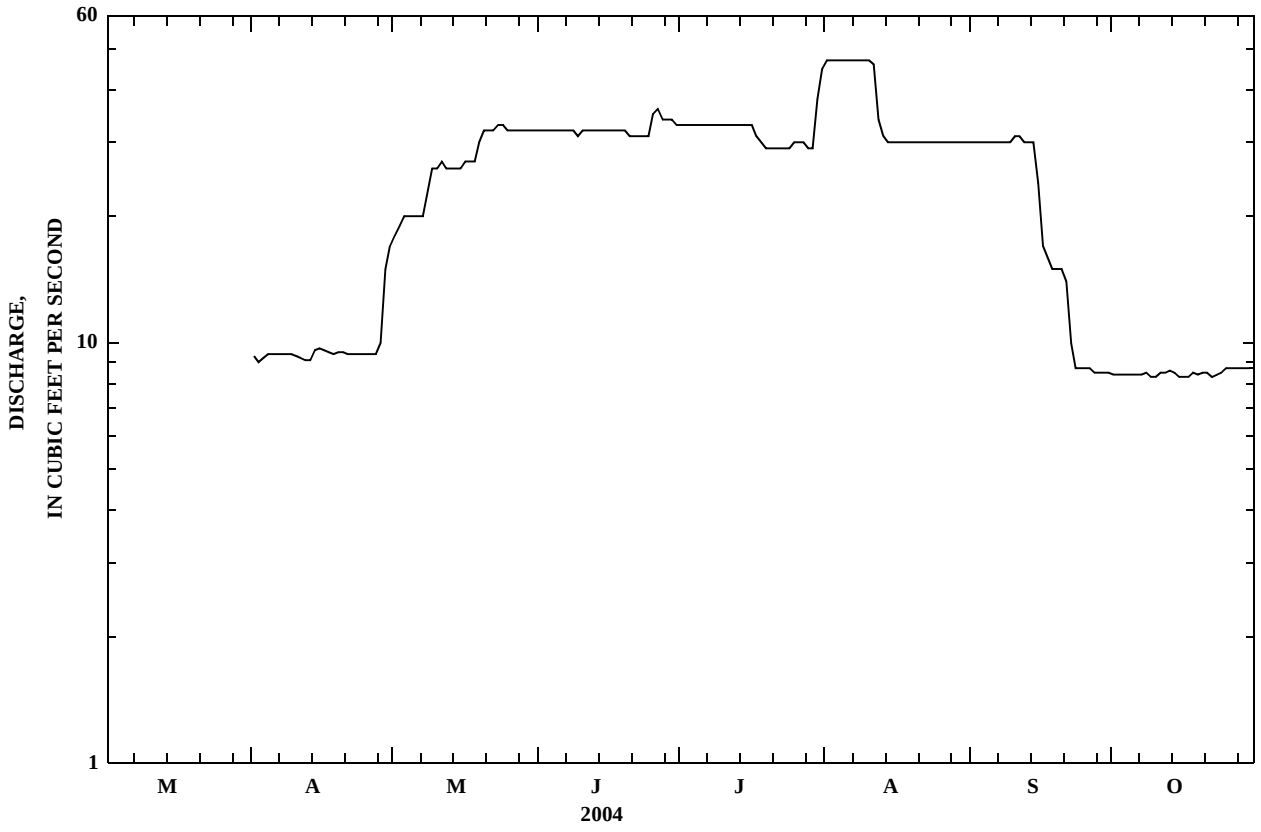
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998 AND SEASONS 2000 - 2004*

MEAN	18.5	19.9	22.1	25.3	32.4	56.2	45.9	33.2	31.0	25.4	21.5	19.8
MAX	37.5	53.8	80.4	121	106	142	131	78.5	74.3	59.2	62.2	50.0
(WY)	(1996)	(1968)	(1943)	(1948)	(1976)	(1948)	(1975)	(1975)	(1993)	(1984)	(1984)	(1976)
MIN	2.86	3.37	4.10	1.62	7.75	25.9	26.4	21.7	13.0	3.90	3.86	2.66
(WY)	(1975)	(1975)	(1975)	(1941)	(1962)	(1955)	(1988)	(1952)	(2000)	(1974)	(1974)	(1975)

12325500 FLINT CREEK NEAR SOUTHERN CROSS, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1941 -1998		SEASONS 2000 - 2004*	
ANNUAL MEAN			29.5			
HIGHEST ANNUAL MEAN			57.9	1976		
LOWEST ANNUAL MEAN			13.2	1962		
HIGHEST DAILY MEAN	47	Aug 1	172	Jun 19, 1980	135	May 31, 2003
LOWEST DAILY MEAN	8.3	Oct 9	a0.00	Nov 30, 1966	4.9	Oct 20, 2003
ANNUAL SEVEN-DAY MINIMUM			1.4	Mar 8, 1941		
MAXIMUM PEAK FLOW	48	Aug 2	b174	Jun 13, 1942	139	May 31, 2003
MAXIMUM PEAK STAGE	1.16	Aug 2	c2.60	Jun 19, 1980	2.44	May 31, 2003
INSTANTANEOUS LOW FLOW			0.00	Nov 30, 1966		
ANNUAL RUNOFF (AC-FT)			21,370			
10 PERCENT EXCEEDS			50			
50 PERCENT EXCEEDS			28			
90 PERCENT EXCEEDS			6.8			

*--During periods of operation (1941 to current year; seasonal records beginning 2000).
a--Partial days of no flow in several years.
b--Gage height, 1.86 ft.
c--Maximum observed.



12329500 FLINT CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°27'50", long 113°14'20" (NAD 27), in NE¼SW¼NW¼ sec.9, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.4 mi west of Maxville and 1.0 mi upstream from Boulder Creek.

DRAINAGE AREA.--208 mi^2.

PERIOD OF RECORD.--August 1941 to current year. April 1939 to September 1941 at site 0.5 mi upstream; records not equivalent owing to diversions.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,828.38 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Georgetown Lake. Diversions for irrigation of about 8,200 acres upstream from station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	e46	e46	e27	e41	51	66	50	81	91	73	55
2	60	e48	e45	e27	e41	47	65	53	70	87	76	58
3	56	e48	e43	e26	e40	48	62	56	72	84	84	56
4	57	e46	e40	e25	e40	48	64	59	75	89	91	56
5	57	e42	e41	e24	e40	47	64	61	90	89	85	58
6	57	e43	e43	e24	e41	42	66	59	117	91	88	58
7	57	e44	e44	e25	44	49	70	51	116	90	87	58
8	56	e47	e45	e26	48	83	69	48	98	90	91	56
9	54	52	46	e30	46	121	70	41	93	90	87	57
10	54	60	47	e32	44	151	65	36	176	89	86	59
11	54	63	48	e33	e39	113	62	38	216	93	87	60
12	56	60	47	e32	e38	105	60	38	146	91	82	86
13	57	e56	48	e34	e38	121	61	35	121	83	80	105
14	57	e54	48	e34	e39	76	67	34	111	83	73	89
15	57	e54	45	e35	43	66	67	33	100	72	71	82
16	59	56	e42	e36	54	68	62	32	92	49	75	77
17	56	55	e41	e38	46	67	60	42	87	64	81	74
18	53	55	e40	e38	49	73	60	44	84	75	89	74
19	52	62	e39	40	50	83	59	59	84	87	82	92
20	53	63	e38	46	48	64	59	54	82	98	77	100
21	51	53	e38	46	e45	62	57	46	78	86	69	92
22	52	e45	e37	44	e45	63	55	64	72	81	67	86
23	51	e42	e37	46	e43	64	52	71	68	63	86	83
24	52	e42	e36	47	e45	66	51	59	62	54	87	89
25	55	e43	e38	47	e45	68	52	50	70	59	94	83
26	59	e43	e36	44	47	65	47	47	89	84	104	78
27	58	e44	e34	41	46	60	e38	67	92	78	105	75
28	58	e46	e32	47	46	59	e40	99	105	75	81	73
29	e54	e46	e31	47	46	56	e42	113	95	74	62	70
30	e50	e48	e31	48	---	56	e44	95	92	67	62	68
31	e45	---	e26	46	---	57	---	86	---	73	57	---
TOTAL	1,706	1,506	1,252	1,135	1,277	2,199	1,756	1,720	2,934	2,479	2,519	2,207
MEAN	55.0	50.2	40.4	36.6	44.0	70.9	58.5	55.5	97.8	80.0	81.3	73.6
MAX	60	63	48	48	54	151	70	113	216	98	105	105
MIN	45	42	26	24	38	42	38	32	62	49	57	55
AC-FT	3,380	2,990	2,480	2,250	2,530	4,360	3,480	3,410	5,820	4,920	5,000	4,380

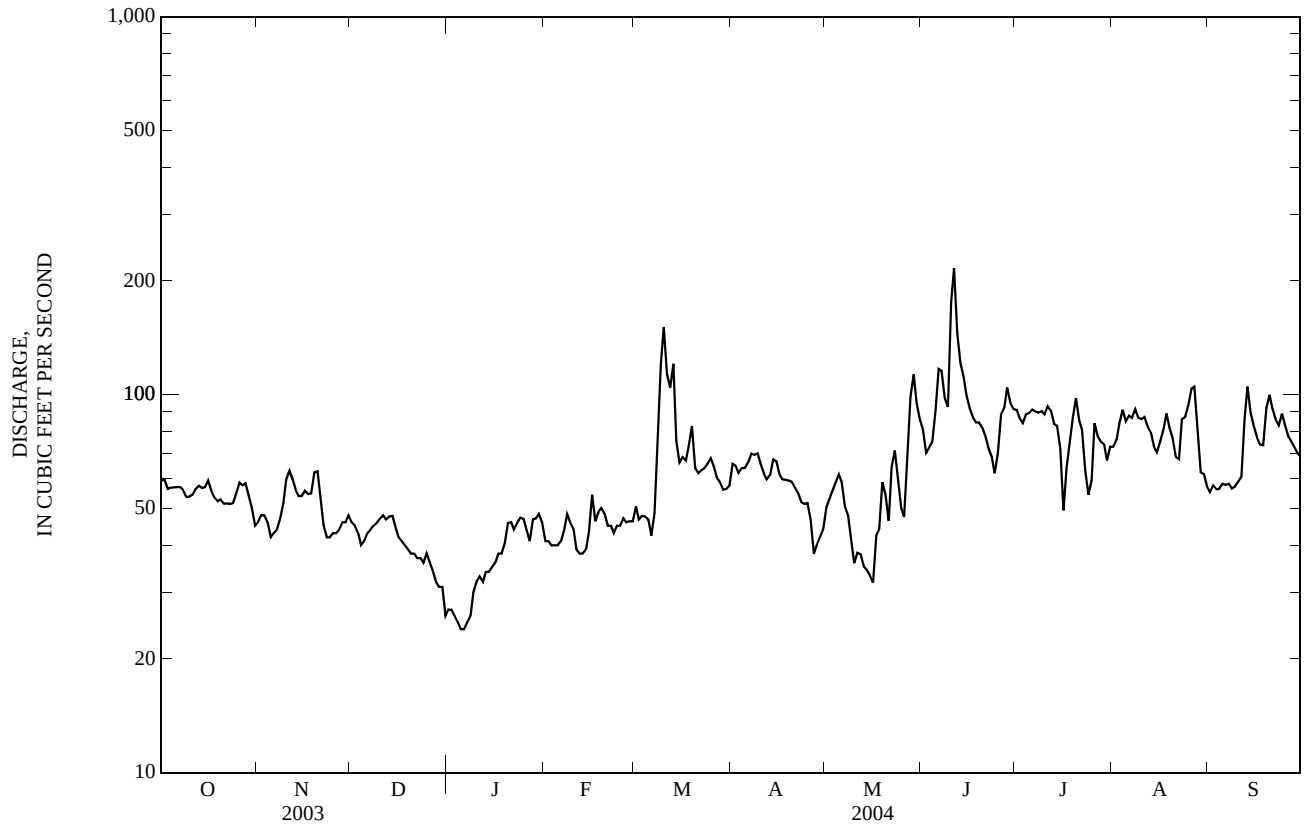
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2004, BY WATER YEAR (WY)

MEAN	83.8	71.8	59.9	53.9	61.6	76.0	105	137	186	126	106	91.4
MAX	148	121	120	88.1	141	186	310	353	455	324	217	151
(WY)	(1976)	(1984)	(1976)	(1976)	(1996)	(1943)	(1948)	(1976)	(1948)	(1975)	(1975)	(1993)
MIN	50.2	41.3	27.7	26.6	27.3	33.5	48.6	50.9	70.7	48.1	30.1	33.6
(WY)	(1992)	(1993)	(1993)	(1993)	(1993)	(1955)	(1961)	(2002)	(1987)	(1973)	(1992)	(1992)

12329500 FLINT CREEK AT MAXVILLE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1942 - 2004	
ANNUAL TOTAL	31,646		22,690			
ANNUAL MEAN	86.7		62.0		96.6	
HIGHEST ANNUAL MEAN					165	1976
LOWEST ANNUAL MEAN					53.2	1992
HIGHEST DAILY MEAN	349	Mar 14	216	Jun 11	933	Mar 29, 1943
LOWEST DAILY MEAN	26	Dec 31	24	Jan 5	15	Feb 25, 1962
ANNUAL SEVEN-DAY MINIMUM	32	Jan 6	25	Jan 2	19	Dec 31, 1957
MAXIMUM PEAK FLOW			a248	Jun 10	c1,680	Mar 28, 1943
MAXIMUM PEAK STAGE			b4.85	Feb 12	b8.08	Feb 4, 1963
INSTANTANEOUS LOW FLOW					15	Feb 25, 1962
ANNUAL RUNOFF (AC-FT)	62,770		45,010		69,990	
10 PERCENT EXCEEDS	165		91		166	
50 PERCENT EXCEEDS	70		57		79	
90 PERCENT EXCEEDS	37		38		43	

a--Gage height, 3.59 ft.
b--Backwater from ice.
c--Gage height, 6.79 ft.
e--Estimated.



12330000 BOULDER CREEK AT MAXVILLE, MT

LOCATION.--Lat 46°28'20", 1ong 113°13'59" (NAD 27), in SE¼NE¼SW¼ sec.4, T.8 N., R.13 W., Granite County, Hydrologic Unit 17010202, on right bank 0.2 mi upstream from mouth and 0.7 mi north of Maxville.

DRAINAGE AREA.--71.3 mi^2.

PERIOD OF RECORD.--April 1939 to current year. Monthly discharge only for some periods, published in WSP 1316.

GAGE.--Water-stage recorder. Elevation of gage is 4,750 ft (NGVD 29). Apr. 15, 1939, to July 7, 1941, nonrecording gage at site 75 ft upstream at different elevation. July 8-20, 1941, nonrecording gage at site 175 ft upstream at elevation 1.03 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions upstream for irrigation of about 240 acres near the station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	e14	18	e13	e14	15	22	35	77	41	11	15
2	13	e15	e16	e14	16	15	21	43	77	38	11	18
3	13	e15	e15	e14	17	15	21	67	85	35	12	17
4	13	e14	e14	e13	16	15	22	86	102	36	12	15
5	13	e13	e15	e12	16	15	24	109	121	34	11	15
6	13	e13	e16	e11	18	15	27	113	134	32	10	14
7	13	e14	e16	e12	16	15	31	110	101	31	9.9	13
8	13	e16	e15	e13	16	16	32	114	87	29	9.6	13
9	13	e17	e15	e13	e15	17	32	102	83	27	9.3	12
10	13	e19	e15	e14	e14	17	27	84	148	26	9.0	11
11	13	e18	e15	e15	e14	17	22	78	146	26	8.2	10
12	13	e17	e15	e16	e14	17	23	66	109	24	7.6	22
13	14	e16	e16	e17	e14	17	25	58	94	23	7.5	34
14	13	e16	e16	17	e14	16	28	52	89	22	7.1	28
15	14	e17	e16	17	e15	16	26	49	80	20	6.8	24
16	15	19	e16	17	16	16	23	51	72	19	8.0	22
17	15	19	e15	16	16	16	21	57	65	18	14	20
18	15	19	e15	16	17	17	20	56	62	19	18	20
19	14	19	e15	16	16	18	19	71	60	19	13	29
20	13	19	e15	16	16	17	19	67	58	24	9.7	29
21	13	e18	e14	16	16	17	17	75	56	21	8.8	28
22	13	e16	e14	16	e15	18	16	108	51	18	8.7	26
23	13	e15	e14	16	e15	19	16	100	47	17	26	33
24	13	e15	e14	16	16	21	18	78	47	16	25	44
25	14	e16	e13	16	16	21	17	67	52	17	29	40
26	16	e17	e13	16	16	21	20	65	51	16	32	36
27	17	19	e13	16	16	19	28	80	51	15	38	33
28	17	19	e13	16	16	19	50	108	52	14	27	31
29	e16	19	e13	e15	16	18	40	114	51	13	22	30
30	e15	19	e13	e14	---	19	35	89	46	13	19	28
31	e14	---	e13	e14	---	21	---	81	---	12	17	---
TOTAL	430	502	456	463	452	535	742	2,433	2,354	715	457.2	710
MEAN	13.9	16.7	14.7	14.9	15.6	17.3	24.7	78.5	78.5	23.1	14.7	23.7
MAX	17	19	18	17	18	21	50	114	148	41	38	44
MIN	13	13	13	11	14	15	16	35	46	12	6.8	10
AC-FT	853	996	904	918	897	1,060	1,470	4,830	4,670	1,420	907	1,410

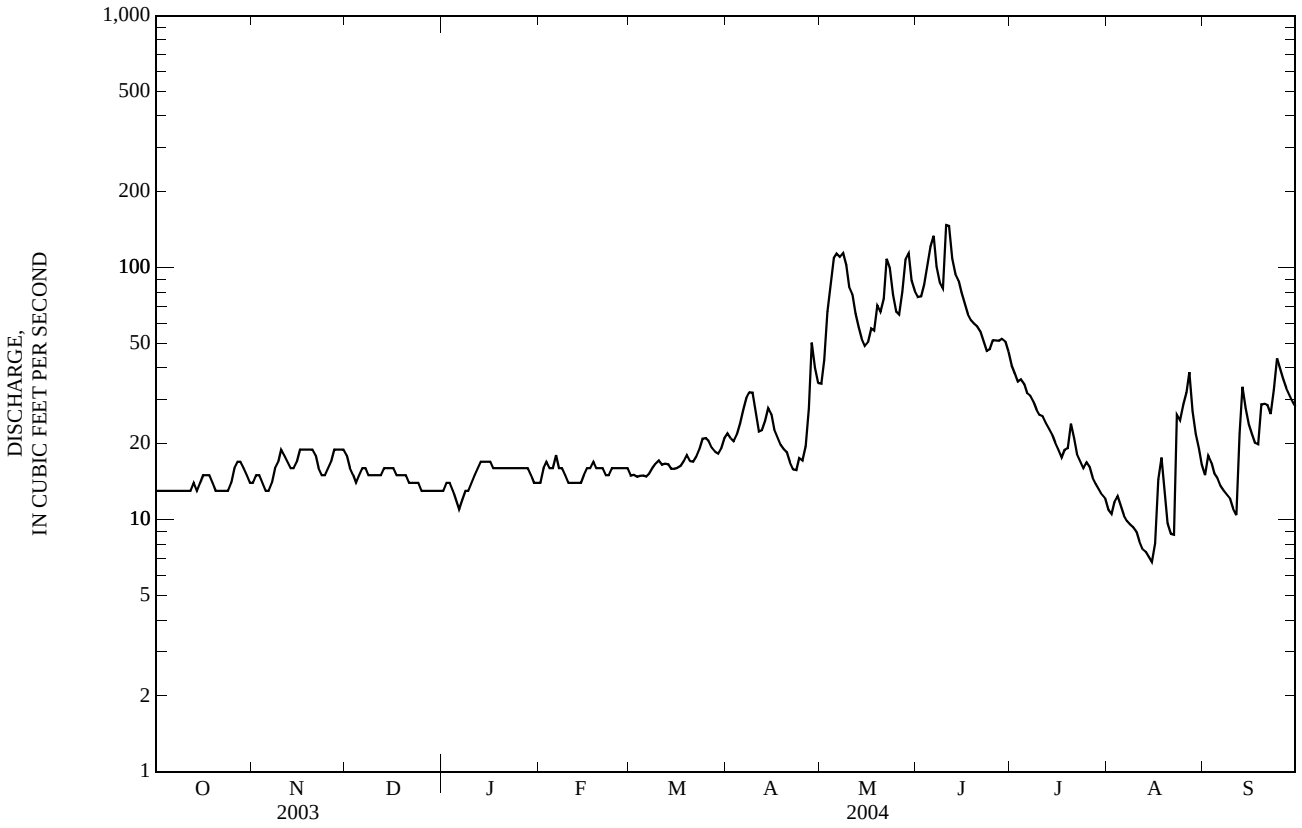
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	22.5	23.2	20.6	18.5	18.3	18.5	28.6	114	174	58.3	20.7	17.8
MAX	51.1	44.8	39.0	32.4	30.5	28.6	56.3	261	376	244	68.4	54.1
(WY)	(1960)	(1976)	(1976)	(1976)	(1951)	(1976)	(1943)	(1976)	(1975)	(1975)	(1975)	(1965)
MIN	3.59	11.8	11.0	8.49	10.0	12.3	10.4	54.7	35.0	12.6	8.14	6.59
(WY)	(1988)	(1988)	(1988)	(1988)	(1941)	(1993)	(1991)	(1977)	(1992)	(1988)	(1988)	(1991)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	14,086.7		10,249.2			
ANNUAL MEAN	38.6		28.0		44.6	
HIGHEST ANNUAL MEAN					82.2	1976
LOWEST ANNUAL MEAN					20.4	1992
HIGHEST DAILY MEAN	457	May 31	148	Jun 10	1,140	Jun 19, 1975
LOWEST DAILY MEAN	8.8	Sep 5	6.8	Aug 15	2.8	Oct 13, 1991
ANNUAL SEVEN-DAY MINIMUM	9.2	Sep 2	7.7	Aug 10	3.4	Oct 8, 1987
MAXIMUM PEAK FLOW			a180	Jun 10	1,460	Jun 19, 1975
MAXIMUM PEAK STAGE			b3.03	Dec 23	4.55	Jun 19, 1975
INSTANTANEOUS LOW FLOW					c2.8	Oct 13, 1991
ANNUAL RUNOFF (AC-FT)	27,940		20,330		32,310	
10 PERCENT EXCEEDS	71		67		108	
50 PERCENT EXCEEDS	17		17		22	
90 PERCENT EXCEEDS	13		13		12	

a--Gage height, 2.58 ft.
b--Backwater from ice.
c--Result of upstream diversion.
e--Estimated.

12330000 BOULDER CREEK AT MAXVILLE, MT—Continued



12331500 FLINT CREEK NEAR DRUMMOND, MT

LOCATION.--Lat 46°37'44", long 113°09'02" (NAD 27), in NE¼NW¼NE¼ sec. 18, T.10 N.,R.12 W., Granite County, Hydrologic Unit 17010202, on left bank 10 ft downstream from county bridge, 2.0 mi upstream from mouth, and 2.7 mi south of Drummond.

DRAINAGE AREA.--490 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1990 to April 2003, August 2003 to September 2004, discontinued.

GAGE.--Water-stage recorder. Elevation of gage is 4,017.27 ft (NGVD 29). June 1948 to September 1949 at same site with different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Daily mean values were not determined from May 1 through July 31 due to temporary suspension of the surface-water program. Some regulation by Georgetown Lake (station number 12325000). Diversions for irrigation of about 25,000 acres of which 1,000 acres are downstream from station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	e90	102	e74	128	76	107	19	46	34	7.3	30
2	49	e96	e100	e74	122	77	107	15	39	36	10	32
3	63	e96	e94	e70	132	74	101	15	33	33	16	33
4	94	e92	e90	e66	129	76	103	4.5	37	43	23	35
5	103	e86	98	e60	105	77	104	7.6	58	52	26	35
6	104	e92	104	e62	103	73	105	13	100	46	31	36
7	105	e96	106	e66	110	88	111	9.6	99	47	30	38
8	102	e105	100	e70	104	253	113	8.0	75	45	27	45
9	100	e110	99	e80	101	227	112	5.2	75	44	20	43
10	101	121	100	e84	98	243	106	3.8	179	44	16	36
11	101	124	102	e86	99	193	98	3.7	276	45	14	32
12	106	119	101	e84	92	149	95	4.2	193	42	7.1	77
13	110	114	104	e90	88	180	97	5.9	154	36	4.7	128
14	109	109	105	e92	98	125	106	5.4	128	31	4.4	105
15	112	109	100	e90	119	108	103	5.1	104	26	4.4	104
16	119	113	99	e92	133	110	96	4.1	93	24	4.3	95
17	114	111	109	e90	128	105	92	6.0	73	28	9.1	93
18	110	112	94	e96	103	112	90	9.6	55	26	16	100
19	108	120	e80	e100	110	122	88	27	63	30	15	161
20	107	121	e76	e100	105	107	88	19	61	42	13	193
21	107	e100	e76	e96	103	104	86	15	61	36	12	169
22	107	e96	e74	e96	96	106	75	29	54	30	17	149
23	106	e96	e76	e96	e76	109	80	44	36	35	50	152
24	106	e96	e80	e94	e74	110	77	26	22	40	51	179
25	109	e100	e80	e92	e76	114	78	15	25	33	40	167
26	113	109	e76	e92	e76	111	60	11	35	37	51	154
27	116	99	e74	e96	92	104	43	13	30	29	60	144
28	123	107	e74	e100	78	100	60	52	36	20	53	145
29	e110	108	e72	e100	76	96	54	104	29	17	38	162
30	e100	107	e72	137	---	96	33	77	32	14	32	155
31	e90	---	e74	127	---	95	---	60	---	10	30	---
TOTAL	3,153	3,154	2,791	2,752	2,954	3,720	2,668	636.7	2,301	1,055	732.3	3,027
MEAN	102	105	90.0	88.8	102	120	88.9	20.5	76.7	34.0	23.6	101
MAX	123	124	109	137	133	253	113	104	276	52	60	193
MIN	49	86	72	60	74	73	33	3.7	22	10	4.3	30
AC-FT	6,250	6,260	5,540	5,460	5,860	7,380	5,290	1,260	4,560	2,090	1,450	6,000

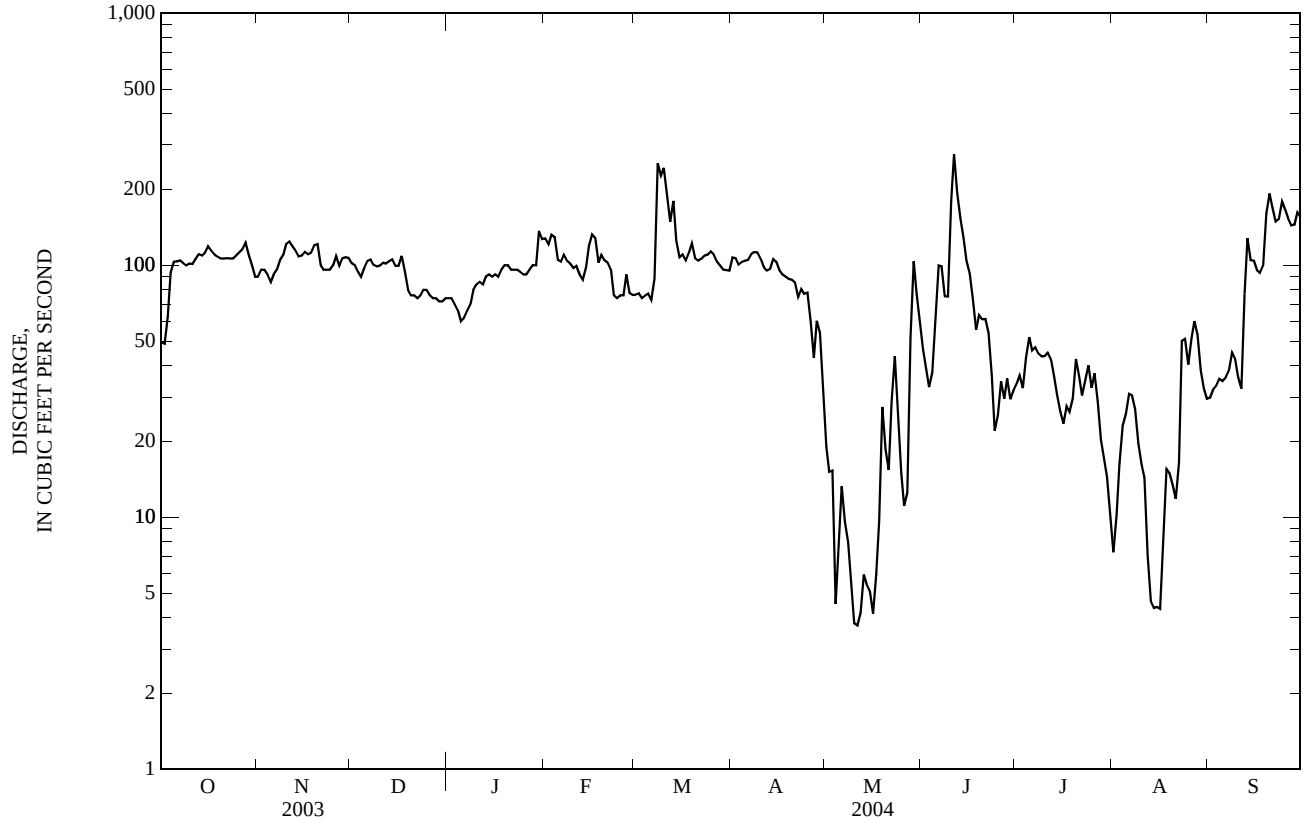
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2004, BY WATER YEAR (WY)*

MEAN	125	122	97.5	96.8	113	135	154	139	212	116	42.0	70.6
MAX	186	165	144	156	232	256	326	459	627	412	167	196
(WY)	(1996)	(1999)	(1999)	(1997)	(1996)	(1997)	(1996)	(1997)	(1997)	(1998)	(1993)	(1993)
MIN	81.2	91.4	63.8	57.1	56.9	79.5	86.8	14.1	14.9	12.8	6.66	18.0
(WY)	(1993)	(1993)	(1993)	(1993)	(1993)	(1991)	(2001)	(1992)	(1992)	(2000)	(1991)	(2001)

12331500 FLINT CREEK NEAR DRUMMOND, MT—Continued

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1991 - 2004*	
ANNUAL TOTAL	28,944.0			
ANNUAL MEAN	79.1		118	
HIGHEST ANNUAL MEAN			234	1997
LOWEST ANNUAL MEAN			60.2	1992
HIGHEST DAILY MEAN	276	Jun 11	998	Jun 27, 1998
LOWEST DAILY MEAN	3.7	May 11	0.59	May 6, 1992
ANNUAL SEVEN-DAY MINIMUM	4.6	May 10	1.8	Aug 9, 1992
MAXIMUM PEAK FLOW	a384	Mar 8	c1,100	Feb 8, 1996
MAXIMUM PEAK STAGE	b4.83	Jan 6	6.99	Feb 9, 1996
ANNUAL RUNOFF (AC-FT)	57,410		85,700	
10 PERCENT EXCEEDS	121		208	
50 PERCENT EXCEEDS	90		100	
90 PERCENT EXCEEDS	16		21	

*--During period of operation (August 1990 to April 2003, August 2003 to September 2004).
a--Gage height, 3.24 ft.
b--Backwater from ice jam.
c--About, estimated based on upstream measurement.
e--Estimated.



12331500 FLINT CREEK NEAR DRUMMOND, MT—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-73, 1985 to August 2002, August 2003 to August 2004, discontinued.

REMARKS.--Flow affected by diversions for irrigation upstream from station.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
18...	0910	111	8.4	345	7.5	2.5	160	44.1	13.2	6.2	7	<.04	E.03
APR													
21...	0735	88	8.4	305	-2.0	3.0	140	38.6	11.4	10.9	10	<.04	.04
MAY													
18...	0810	8.3	8.3	398	12.0	9.0	200	54.9	14.4	9.7	11	<.04	E.02
JUN													
02...	1235	39	8.5	403	22.0	13.5	190	53.1	12.8	9.0	11	<.04	E.02
14...	1125	134	8.4	288	15.5	11.0	140	38.3	10.4	8.1	13	<.04	.05
AUG													
23...	0955	57	8.2	501	12.0	12.5	240	64.6	18.7	12.3	15	<.04	.07

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
18...	.7	1.9	E6	180	E.05	2.56	22.2	64	1.3	8	93	8	2.4
APR													
21...	1.2	4.7	9	250	.09	3.17	33.0	77	1.8	10	88	12	2.9
MAY													
18...	1.1	1.4	15	90	.09	.80	78.6	97	1.6	4	90	4	.09
JUN													
02...	1.3	1.8	14	130	.11	1.60	55.8	85	1.2	5	87	7	.74
14...	1.2	3.0	17	270	.21	5.28	30.0	101	1.7	14	84	15	5.4
AUG													
23...	1.7	2.8	42	480	.12	4.27	75.0	269	1.7	14	89	26	4.0

E--Estimated.

12331800 CLARK FORK NEAR DRUMMOND, MT

LOCATION.--Lat 46°42'44", long 113°19'48" (NAD 27), in NE¼SW¼NW¼ sec. 14, T.11 N., R.14 W., in Granite County, Hydrologic Unit 17010201, on right bank 50 ft upstream from country road bridge, 0.3 mi north of Bearmouth, 4.5 mi east of Bearmouth Chalet, 9.0 mi northwest of Drummond, and at river mile 403.9.

DRAINAGE AREA.--2,501 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 3,790 ft (NGVD 29).

REMARKS.--Water-discharge records good. Some regulation by settling ponds on Silver Bow Creek near Anaconda and Georgetown Lake (station number 12325000) on Flint Creek. Diversions for irrigation of about 88,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1981 recorded a discharge of about 16,000 ft^3/s, from measurements made upstream at Clark Fork at Drummond (12331600) and at downstream site, Clark Fork at Clinton (12331900).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	332	425	524	280	459	473	576	456	666	350	185	273
2	349	467	527	331	432	475	624	435	616	356	176	283
3	354	496	543	312	429	464	603	437	566	330	188	280
4	391	489	532	310	451	457	595	408	545	342	207	283
5	401	456	508	202	460	461	604	390	537	378	210	283
6	403	437	522	145	432	456	598	382	599	371	207	285
7	390	437	538	147	440	450	600	384	643	365	197	293
8	398	437	522	229	455	849	608	379	630	365	196	299
9	395	461	497	324	451	1,370	644	364	658	360	184	297
10	396	520	479	379	448	1,330	650	340	791	365	167	283
11	408	538	505	398	437	984	604	346	1,110	367	163	274
12	420	531	499	408	398	773	571	358	1,120	360	152	334
13	427	504	502	405	353	822	558	342	888	347	147	430
14	432	486	506	412	354	704	568	332	752	325	146	414
15	447	479	501	421	417	629	569	306	639	299	141	413
16	462	502	462	434	444	618	559	281	563	281	134	395
17	461	509	492	442	444	613	538	287	509	266	132	390
18	446	503	457	421	465	676	527	313	465	261	146	410
19	436	520	402	418	513	702	512	358	461	260	162	468
20	433	552	413	436	526	641	502	382	461	295	162	565
21	438	530	494	455	504	586	508	385	453	298	162	586
22	441	462	458	449	474	574	476	472	404	272	168	582
23	444	431	409	443	462	578	461	626	359	262	238	577
24	452	469	424	470	473	589	439	685	312	272	272	595
25	445	482	499	464	524	612	438	616	282	267	261	585
26	458	491	465	451	537	603	432	576	299	255	277	566
27	459	513	440	450	508	588	414	583	314	238	297	545
28	466	482	389	447	488	567	454	645	356	207	304	535
29	525	535	331	472	474	551	516	750	374	198	289	550
30	524	534	292	496	---	539	488	766	368	199	275	533
31	460	---	260	495	---	537	---	723	---	192	267	---
TOTAL	13,293	14,678	14,392	11,946	13,252	20,271	16,236	14,107	16,740	9,303	6,212	12,606
MEAN	429	489	464	385	457	654	541	455	558	300	200	420
MAX	525	552	543	496	537	1,370	650	766	1,120	378	304	595
MIN	332	425	260	145	353	450	414	281	282	192	132	273
AC-FT	26,370	29,110	28,550	23,690	26,290	40,210	32,200	27,980	33,200	18,450	12,320	25,000

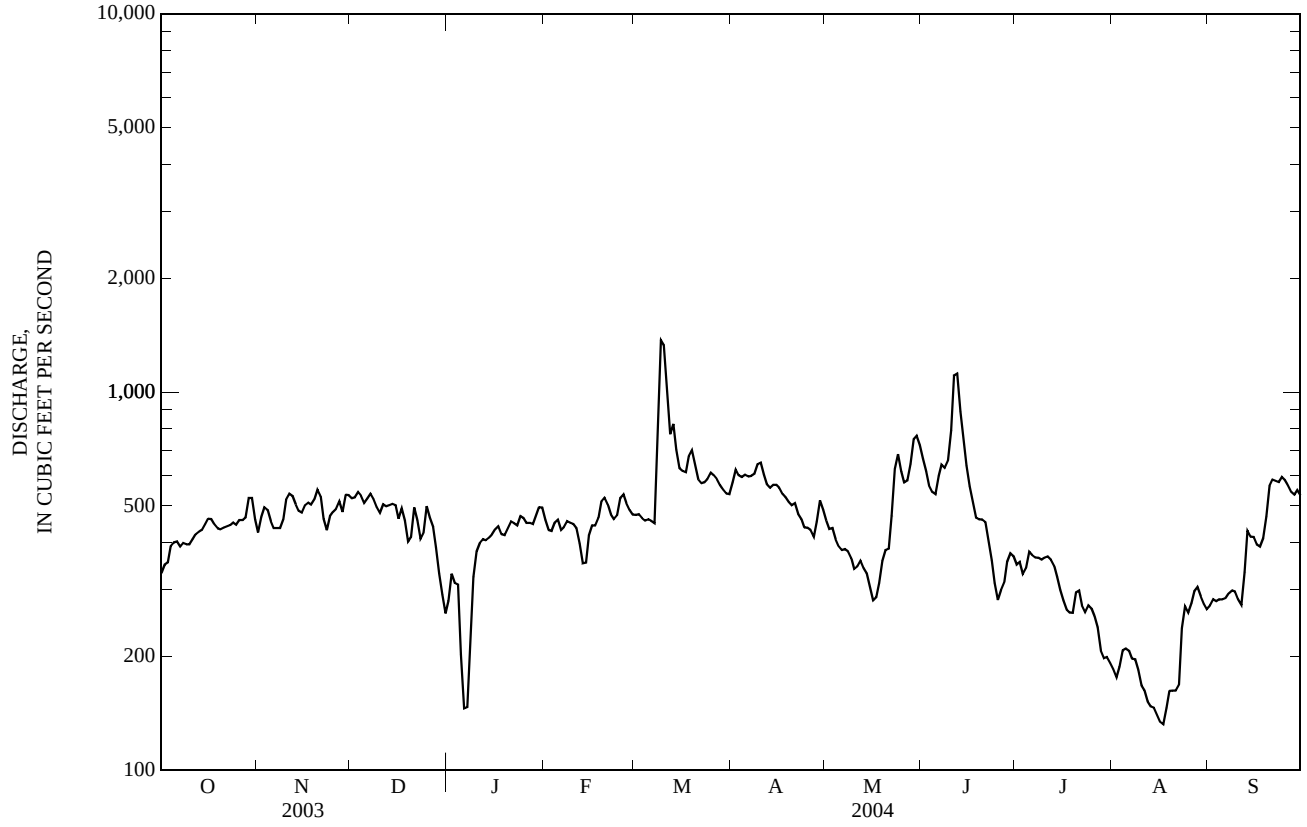
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2004, BY WATER YEAR (WY)

MEAN	580	586	506	505	609	710	791	1,114	1,421	693	363	435
MAX	859	810	640	754	1,377	1,048	1,356	2,557	3,560	1,731	895	1,007
(WY)	(1998)	(1998)	(1998)	(1997)	(1996)	(1997)	(1996)	(1997)	(1997)	(1998)	(1993)	(1993)
MIN	411	448	366	377	375	494	541	298	297	160	112	201
(WY)	(2003)	(2001)	(2001)	(2001)	(2001)	(2002)	(2004)	(2000)	(2000)	(2000)	(2000)	(1994)

12331800 CLARK FORK NEAR DRUMMOND, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1993 - 2004	
ANNUAL TOTAL	243,575		163,036			
ANNUAL MEAN	667		445		684	
HIGHEST ANNUAL MEAN					1,192	1997
LOWEST ANNUAL MEAN					400	2000
HIGHEST DAILY MEAN	3,730	Mar 14	1,370	Mar 9	8,430	Feb 9, 1996
LOWEST DAILY MEAN	168	Aug 1	132	Aug 17	77	Jul 31, 2000
ANNUAL SEVEN-DAY MINIMUM	180	Jul 31	143	Aug 12	83	Jul 29, 2000
MAXIMUM PEAK FLOW			1,850	Mar 9	9,800	Feb 9, 1996
MAXIMUM PEAK STAGE			5.24	Mar 9	10.03	Feb 9, 1996
INSTANTANEOUS LOW FLOW			a130	Aug 17	b75	Jul 30, 2000
ANNUAL RUNOFF (AC-FT)	483,100		323,400		495,500	
10 PERCENT EXCEEDS	1,240		605		1,180	
50 PERCENT EXCEEDS	464		448		544	
90 PERCENT EXCEEDS	248		261		272	

a--Gage height, 2.23 ft.
b--Gage height, 2.03 ft.



12331800 CLARK FORK NEAR DRUMMOND, MT—Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
18...	1015	501	8.4	490	5.5	4.5	230	64.8	16.1	8.4	8	E.03	.10
MAR													
17...	1250	613	8.4	471	12.5	7.5	220	64.2	14.9	9.0	9	E.04	.14
APR													
21...	0840	505	8.3	435	4.5	7.0	200	57.8	13.8	12.0	10	E.03	.12
MAY													
18...	0900	308	8.4	484	10.0	12.5	240	68.8	15.8	9.2	10	E.02	.04
JUN													
02...	1325	608	8.5	436	24.0	15.5	200	58.6	13.3	10.4	12	E.02	.08
13...	1645	855	8.4	370	16.0	16.0	170	49.1	11.3	10.6	14	<.04	.14
JUL													
20...	1250	298	8.4	525	27.5	20.5	250	70.4	17.1	12.8	12	E.02	.06
AUG													
23...	1045	235	8.2	578	13.0	15.5	280	81.1	19.5	12.1	12	E.03	.07

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
18...	2.6	11.1	<6	220	<.08	1.63	12.9	63	4.1	17	86	11	15
MAR													
17...	4.5	19.7	7	460	.09	3.24	20.8	88	4.2	25	82	26	43
APR													
21...	4.1	13.7	E5	310	E.04	2.04	14.2	62	9.1	18	89	14	19
MAY													
18...	4.4	5.8	E6	40	E.05	.29	11.1	16	3.2	5	81	2	1.7
JUN													
02...	4.7	10.4	E6	180	E.06	1.19	15.8	49	2.6	12	90	9	15
13...	4.2	19.0	10	450	.10	3.45	15.6	97	2.9	26	89	23	53
JUL													
20...	3.6	6.7	E4	100	E.05	.80	11.0	41	1.7	7	64	8	6.4
AUG													
23...	3.8	7.7	E3	130	E.04	.98	6.8	45	2.9	11	86	7	4.4

E--Estimated.

12332000 MIDDLE FORK ROCK CREEK NEAR PHILIPSBURG, MT

LOCATION.--Lat 46°11'03", long 113°30'05" (NAD 27), in SW¼NW¼SE¼ sec.17, T.5 N., R.15 W., Granite County, Hydrologic Unit 17010202, on left bank 40 ft downstream from bridge on county highway, 1.2 mi upstream from East Fork, 3.4 mi upstream from West Fork, and 15 mi southwest of Philipsburg.

DRAINAGE AREA.--123 mi^2.

PERIOD OF RECORD.--September 1937 to current year. Monthly discharges only January to March 1938, published in WSP 1316.

GAGE.--Water-stage recorder. Elevation of gage is 5,444.08 ft (NGVD 29). Prior to Oct. 25, 1990, gage located at several sites 0.8 to 1.0 mi downstream. See WSP 1736 or 1933 for history of changes prior to Oct. 1, 1955.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. A few small diversions for irrigation upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	e30	e31	e30	e33	e30	53	124	222	192	60	53
2	34	e31	e30	e29	e32	e29	48	148	228	182	61	56
3	34	e31	e29	e27	e31	e29	46	186	251	173	59	54
4	34	e29	e29	e26	e32	e29	50	229	293	180	58	52
5	34	e27	e29	e25	e31	e30	53	283	355	160	56	50
6	33	e29	e29	e27	e31	e30	59	318	424	149	59	49
7	33	e30	e29	e29	e32	e30	64	314	362	143	55	47
8	33	e30	e29	e30	e32	e30	69	332	318	138	54	46
9	32	e31	e29	e30	e33	e30	72	315	292	127	52	45
10	33	e31	e29	e31	e33	e30	67	290	450	122	51	44
11	34	e31	e29	e31	e33	e31	66	273	431	121	50	43
12	36	e30	e29	e31	e32	e31	69	235	346	110	49	59
13	36	e30	e30	e32	e30	e32	75	206	307	104	48	82
14	36	e30	e30	e32	e29	e32	88	188	285	100	47	67
15	36	e30	e30	e33	e30	e33	92	178	271	97	45	63
16	38	e32	e30	e33	e30	e34	86	185	248	93	46	59
17	37	e34	e29	e33	e31	e35	84	197	228	89	51	55
18	37	e34	e29	e34	e31	e34	84	206	223	90	60	55
19	36	e36	e29	e34	e31	e34	81	235	229	100	57	80
20	34	e34	e30	e34	e30	e33	78	220	218	106	52	76
21	34	e33	e30	e34	e29	e34	73	228	207	92	50	76
22	33	e30	e30	e34	e28	e35	70	246	202	84	49	69
23	33	e30	e29	e34	e29	e34	69	259	207	80	60	74
24	33	e31	e30	e33	e29	e34	73	237	214	76	62	79
25	33	e31	e30	e33	e30	e34	74	216	216	73	77	74
26	33	e31	e30	e33	e30	e36	78	216	211	73	88	72
27	33	e32	e30	e33	e30	e38	97	233	285	67	82	69
28	34	e32	e29	e34	e30	e40	133	260	255	67	69	67
29	e32	e32	e29	e34	e30	e40	123	271	225	65	63	65
30	e32	e32	e29	e33	---	43	119	246	214	63	58	63
31	e30	---	e30	e33	---	48	---	232	---	61	55	---
TOTAL	1,055	934	914	979	892	1,042	2,293	7,306	8,217	3,377	1,783	1,843
MEAN	34.0	31.1	29.5	31.6	30.8	33.6	76.4	236	274	109	57.5	61.4
MAX	38	36	31	34	33	48	133	332	450	192	88	82
MIN	30	27	29	25	28	29	46	124	202	61	45	43
AC-FT	2,090	1,850	1,810	1,940	1,770	2,070	4,550	14,490	16,300	6,700	3,540	3,660
CFSM	0.28	0.25	0.24	0.26	0.25	0.27	0.62	1.92	2.23	0.89	0.47	0.50
IN.	0.32	0.28	0.28	0.30	0.27	0.32	0.69	2.21	2.49	1.02	0.54	0.56

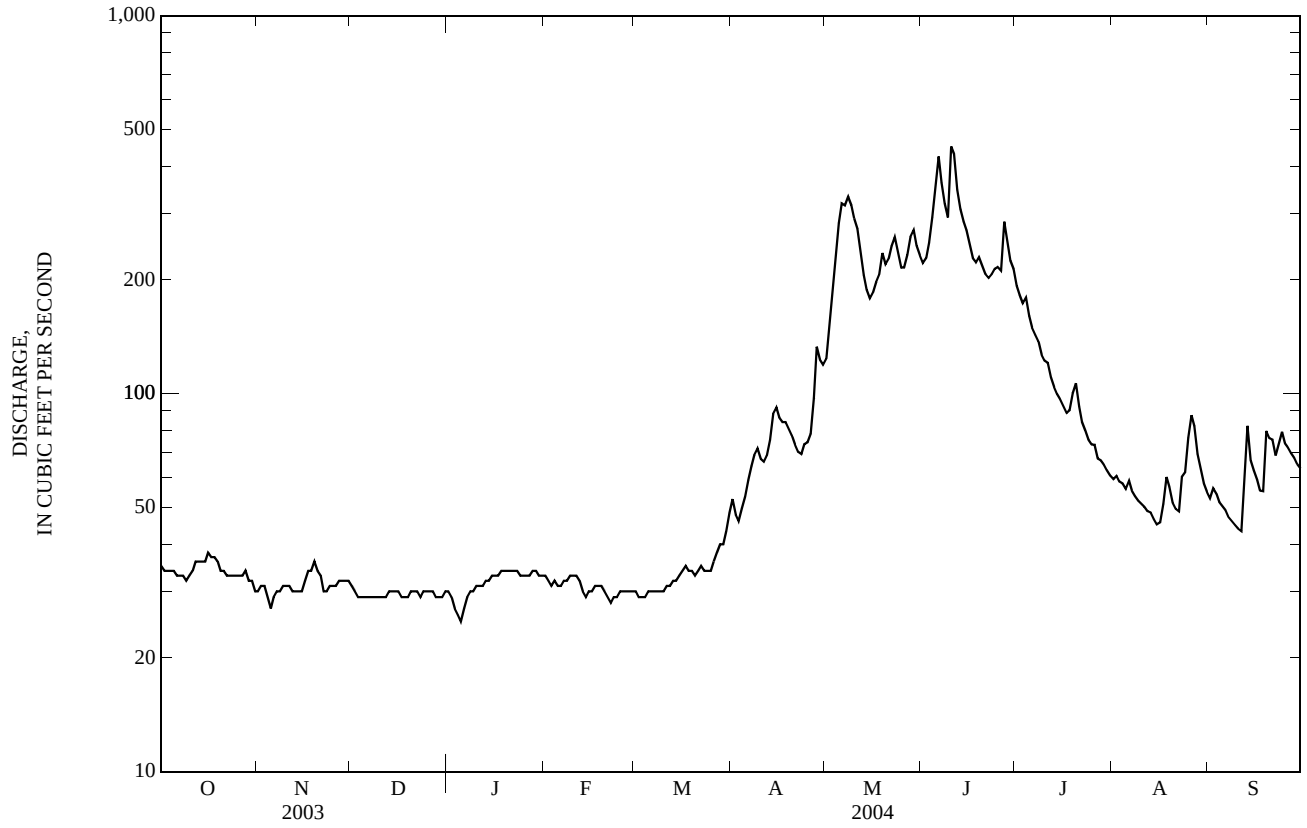
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)

MEAN	49.2	42.7	36.3	32.1	32.9	36.3	74.7	333	478	177	70.0	51.8
MAX	201	104	64.1	60.9	60.3	71.2	190	650	914	496	141	98.5
(WY)	(1947)	(1947)	(1947)	(1976)	(1996)	(1986)	(1943)	(1947)	(1972)	(1975)	(1975)	(1946)
MIN	26.9	25.7	23.6	22.0	16.5	22.7	28.1	137	141	48.7	25.8	30.4
(WY)	(1988)	(1980)	(1946)	(1977)	(1959)	(1955)	(1975)	(1953)	(1992)	(1940)	(1940)	(1987)

12332000 MIDDLE FORK ROCK CREEK NEAR PHILIPSBURG, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004	
ANNUAL TOTAL	37,154		30,635			
ANNUAL MEAN	102		83.7		118	
HIGHEST ANNUAL MEAN					183	1997
LOWEST ANNUAL MEAN					62.3	1940
HIGHEST DAILY MEAN	1,450	May 31	450	Jun 10	1,480	Jun 16, 1974
LOWEST DAILY MEAN	25	Feb 24	25	Jan 5	5.3	Feb 9, 1953
ANNUAL SEVEN-DAY MINIMUM	27	Feb 22	28	Jan 1	10	Feb 22, 1962
MAXIMUM PEAK FLOW			547	Jun 10	1,680	Jun 16, 1974
MAXIMUM PEAK STAGE			a3.01	Jun 10	b5.58	Jun 16, 1974
INSTANTANEOUS LOW FLOW					5.3	Feb 9, 1953
ANNUAL RUNOFF (AC-FT)	73,690		60,760		85,440	
ANNUAL RUNOFF (CFSM)	0.828		0.681		0.959	
ANNUAL RUNOFF (INCHES)	11.24		9.27		13.03	
10 PERCENT EXCEEDS	183		228		322	
50 PERCENT EXCEEDS	36		44		47	
90 PERCENT EXCEEDS	29		30		28	

a--Recorded, may have been higher during period of no gage-height record, Nov. 6 to Mar. 29.
b--Site and datum then in use.
e--Estimated.



12334510 ROCK CREEK NEAR CLINTON, MT

LOCATION.--Lat 46°43'21", long 113°40'56" (NAD 27), in NW¼NE¼SW¼ sec.12, T.11 N., R.17 W., Missoula County, Hydrologic Unit 17010202, on left bank 100 ft downstream from private road bridge, 0.2 mi upstream from mouth, and 3.7 mi southeast of Clinton.

DRAINAGE AREA.--885 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,519.46 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Some regulation by East Fork Rock Creek Reservoir (station number 12332500). During irrigation season water is diverted from East Fork Rock Creek in sec.5, T.4 N., R.14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Diversions for irrigation of about 16,100 acres. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 8.52 ft, from floodmark, discharge, 6,500 ft^3/s; local residents report flood of 1927 reached a stage of about 9.5 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	170	191	e120	156	155	360	588	1,090	643	263	255
2	189	181	191	e130	146	154	368	620	1,030	608	258	271
3	186	208	192	e120	138	152	337	708	1,020	580	261	267
4	186	203	180	e100	142	148	333	823	1,040	569	264	259
5	185	e160	159	e80	150	158	372	936	1,100	558	259	257
6	184	e150	197	e65	148	154	428	1,020	1,180	528	283	253
7	183	e150	201	e70	143	151	496	1,010	1,170	515	278	247
8	184	e160	190	e75	152	171	516	1,040	1,060	497	264	239
9	184	e170	179	e90	158	208	545	1,020	1,010	474	253	234
10	184	226	170	e120	154	252	514	954	1,050	454	247	230
11	189	229	176	e130	149	272	464	926	1,260	455	240	226
12	196	211	177	e130	134	260	447	875	1,120	450	233	260
13	200	188	183	e140	114	293	471	794	1,000	430	218	384
14	203	175	188	e140	119	264	533	739	959	410	210	392
15	208	182	177	e150	143	238	576	692	912	401	206	340
16	214	202	156	e160	153	237	542	689	868	387	202	320
17	210	205	157	e170	152	243	501	789	812	380	211	312
18	205	199	157	e160	165	265	476	781	782	383	245	302
19	203	203	e100	e160	173	321	460	920	812	415	257	349
20	199	212	e110	178	168	291	447	911	815	452	249	453
21	193	196	162	176	157	257	431	884	750	442	236	410
22	190	169	176	164	143	260	408	909	703	394	236	381
23	190	e150	e130	162	138	290	386	988	681	368	286	358
24	189	171	e130	169	148	338	388	973	670	350	309	371
25	189	180	180	170	163	362	411	914	667	330	307	362
26	188	178	172	159	168	354	413	890	653	321	352	337
27	190	178	155	160	162	331	445	963	671	311	358	321
28	195	168	131	162	156	302	608	1,080	775	298	327	311
29	270	200	e120	167	157	283	681	1,210	729	287	297	305
30	301	197	e120	171	---	279	603	1,170	695	277	275	299
31	211	---	e120	166	---	305	---	1,120	---	272	262	---
TOTAL	6,193	5,571	5,027	4,314	4,349	7,748	13,960	27,936	27,084	13,239	8,146	9,305
MEAN	200	186	162	139	150	250	465	901	903	427	263	310
MAX	301	229	201	178	173	362	681	1,210	1,260	643	358	453
MIN	183	150	100	65	114	148	333	588	653	272	202	226
AC-FT	12,280	11,050	9,970	8,560	8,630	15,370	27,690	55,410	53,720	26,260	16,160	18,460
CFSM	0.23	0.21	0.18	0.16	0.17	0.28	0.53	1.02	1.02	0.48	0.30	0.35
IN.	0.26	0.23	0.21	0.18	0.18	0.33	0.59	1.17	1.14	0.56	0.34	0.39

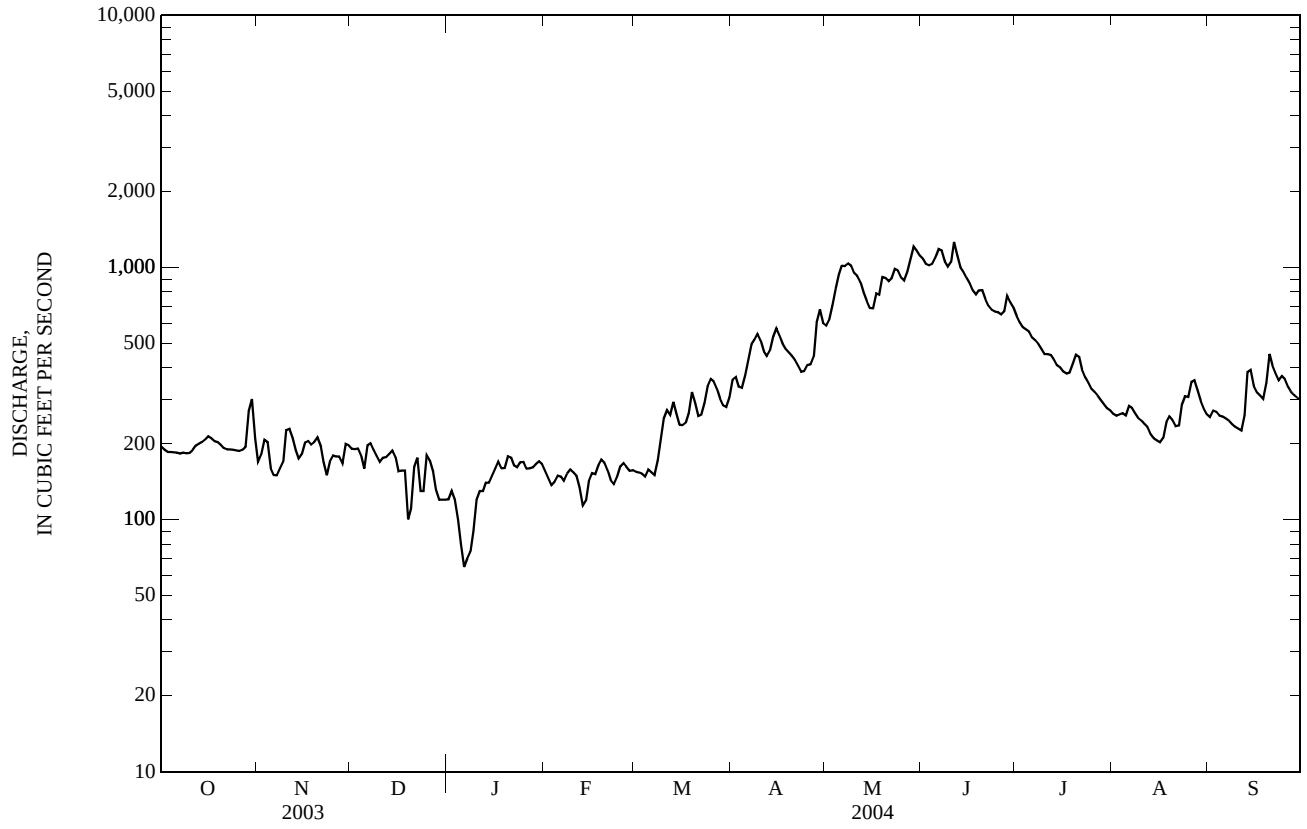
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY)

MEAN	250	224	195	183	191	245	505	1,451	1,690	668	308	262
MAX	474	430	460	329	426	428	1,022	3,676	3,755	1,908	635	389
(WY)	(1976)	(1976)	(1976)	(1976)	(1996)	(1986)	(1996)	(1976)	(1975)	(1975)	(1975)	(1975)
MIN	157	149	119	106	109	158	236	544	407	267	156	148
(WY)	(1988)	(1988)	(1989)	(1988)	(1993)	(2002)	(1975)	(1977)	(1992)	(1985)	(1988)	(1992)

12334510 ROCK CREEK NEAR CLINTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004	
ANNUAL TOTAL	178,057		132,872			
ANNUAL MEAN	488		363		515	
HIGHEST ANNUAL MEAN					966	1976
LOWEST ANNUAL MEAN					258	1992
HIGHEST DAILY MEAN	3,750	May 31	1,260	Jun 11	5,480	May 18, 1997
LOWEST DAILY MEAN	80	Feb 25	65	Jan 6	38	Dec 22, 1998
ANNUAL SEVEN-DAY MINIMUM	132	Jan 6	86	Jan 3	65	Jan 3, 1974
MAXIMUM PEAK FLOW			1,310	Jun 11	a5,530	May 18, 1997
MAXIMUM PEAK STAGE			5.25	Jun 11	8.05	Jun 9, 1997
INSTANTANEOUS LOW FLOW					b37	Dec 23, 1998
ANNUAL RUNOFF (AC-FT)	353,200		263,600		373,200	
ANNUAL RUNOFF (CFSM)	0.551		0.410		0.582	
ANNUAL RUNOFF (INCHES)	7.48		5.59		7.91	
10 PERCENT EXCEEDS	1,150		870		1,210	
50 PERCENT EXCEEDS	211		256		263	
90 PERCENT EXCEEDS	163		150		151	

a--Gage height, 7.81 ft.
b--Gage height, 2.56 ft, may have been less during period of ice effect.
c--Estimated.



12334510 ROCK CREEK NEAR CLINTON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-83, 1985 to August 2004 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: September 1979 to September 1983, April 1995 to September 2002.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum 23.0°C, Aug. 1, 2000; minimum 0.0°C, on many days during winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
18...	1140	197	8.2	144	10.0	2.5	66	17.1	5.76	.6	<2	<.04	<.04
APR													
21...	1005	432	7.8	106	7.0	4.5	47	12.4	3.84	.8	E1	<.04	<.04
MAY													
18...	1035	748	7.9	87	12.0	8.0	37	9.52	3.18	.5	<2	<.04	<.04
JUN													
02...	1515	1,020	8.2	83	26.5	12.5	35	9.37	2.85	.6	<2	E.04	.06
JUL													
20...	1140	455	8.3	133	23.0	16.5	60	16.4	4.71	.7	<2	<.04	<.04
AUG													
23...	1110	279	8.4	139	16.0	14.0	63	16.7	5.07	.8	<2	<.04	<.04

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
18...	E.2	<.6	E6	20	<.08	<.06	.6	1	<.6	<2	82	1	.53
APR													
21...	.5	E.6	17	60	E.05	<.06	1.0	2	E.4	<2	81	2	2.3
MAY													
18...	E.4	E.5	28	100	<.08	.08	1.1	5	E.4	<2	75	4	8.1
JUN													
02...	.7	1.5	23	110	<.08	.14	1.3	5	.6	3	74	6	17
JUL													
20...	E.4	E.5	10	60	<.08	E.05	1.7	5	<.6	<2	57	4	4.9
AUG													
23...	.7	<.6	13	90	<.08	E.05	2.9	9	<.6	<2	80	5	3.8

E--Estimated.

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT

LOCATION.--Lat 46°49'34", long 113°48'48" (NAD 27), in SW¼NW¼SW¼ sec. 1, T.12 N., R.18 W., Missoula County, Hydrologic Unit 17010201, on left bank 0.8 mi southeast of Turah, 4 mi southeast of Bonner, and at river mile 370.2.

DRAINAGE AREA.--3,641 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year. Water-discharge records for the period March 1985 to September 1985 are available in files of the Helena district office.

GAGE.--Water-stage recorder. Elevation of gage is 3,320 ft (NGVD 29), from topographic map. Prior to May 9, 1986, non-recording gage at same site at elevation 2.00 ft higher.

REMARKS.--Water-discharge records fair except those for estimated daily discharges, which are poor. Some regulation by settling ponds on Silver Bow Creek near Anaconda and by Georgetown Lake (station number 12325000) on Flint Creek. Diversions for irrigation of about 100,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	516	e660	760	e450	659	686	997	1,120	2,010	1,040	506	571
2	538	686	755	e500	621	688	1,060	1,100	1,900	996	490	599
3	543	752	769	e460	603	682	1,040	1,180	1,810	949	490	595
4	580	761	766	e440	614	662	1,010	1,300	1,780	923	511	585
5	612	e680	715	e350	639	675	1,070	1,420	1,830	942	511	582
6	618	e650	756	e230	624	671	1,120	1,510	1,950	918	534	576
7	621	e650	779	e240	613	653	1,200	1,520	2,020	905	530	569
8	615	e660	766	e300	629	770	1,230	1,540	1,900	884	513	573
9	619	e700	734	e400	642	1,610	1,300	1,530	1,830	855	491	568
10	626	782	703	e550	633	1,580	1,300	1,440	1,930	830	465	553
11	635	822	718	e580	625	1,460	1,230	1,410	2,430	845	445	543
12	650	811	721	e600	e580	1,190	1,160	1,360	2,450	834	434	592
13	673	767	726	e600	e520	1,190	1,160	1,250	2,120	809	412	770
14	678	732	740	e620	e530	1,130	1,220	1,170	1,930	784	395	831
15	688	724	730	e640	569	987	1,290	1,090	1,750	749	386	793
16	710	742	677	648	619	943	1,250	1,040	1,610	717	374	767
17	730	774	679	e650	635	935	1,190	1,140	1,480	691	374	749
18	706	747	e660	e630	659	992	1,150	1,150	1,390	692	419	753
19	682	755	e560	631	697	1,090	1,110	1,350	1,400	713	451	808
20	669	791	e600	652	731	1,070	1,080	1,400	1,400	762	452	980
21	682	781	e700	656	710	938	1,070	1,380	1,310	776	436	999
22	690	e700	e680	645	671	912	1,030	1,420	1,220	705	438	983
23	697	e630	e600	636	654	936	963	1,670	1,140	669	527	946
24	707	e700	e610	650	662	998	933	1,770	1,090	659	620	971
25	690	710	e720	666	710	1,050	936	1,690	1,030	643	631	969
26	709	709	686	643	763	1,050	932	1,610	1,000	623	668	931
27	711	725	656	636	735	1,010	923	1,690	1,020	605	694	904
28	723	694	e600	639	710	957	1,090	1,850	1,170	565	681	887
29	809	755	e520	652	695	911	1,280	2,130	1,160	540	655	891
30	876	766	e460	685	---	895	1,180	2,180	1,120	529	614	882
31	777	---	e420	695	---	910	---	2,100	---	520	586	---
TOTAL	20,780	21,816	20,966	17,374	18,752	30,231	33,504	45,510	48,180	23,672	15,733	22,720
MEAN	670	727	676	560	647	975	1,117	1,468	1,606	764	508	757
MAX	876	822	779	695	763	1,610	1,300	2,180	2,450	1,040	694	999
MIN	516	630	420	230	520	653	923	1,040	1,000	520	374	543
AC-FT	41,220	43,270	41,590	34,460	37,190	59,960	66,460	90,270	95,570	46,950	31,210	45,070

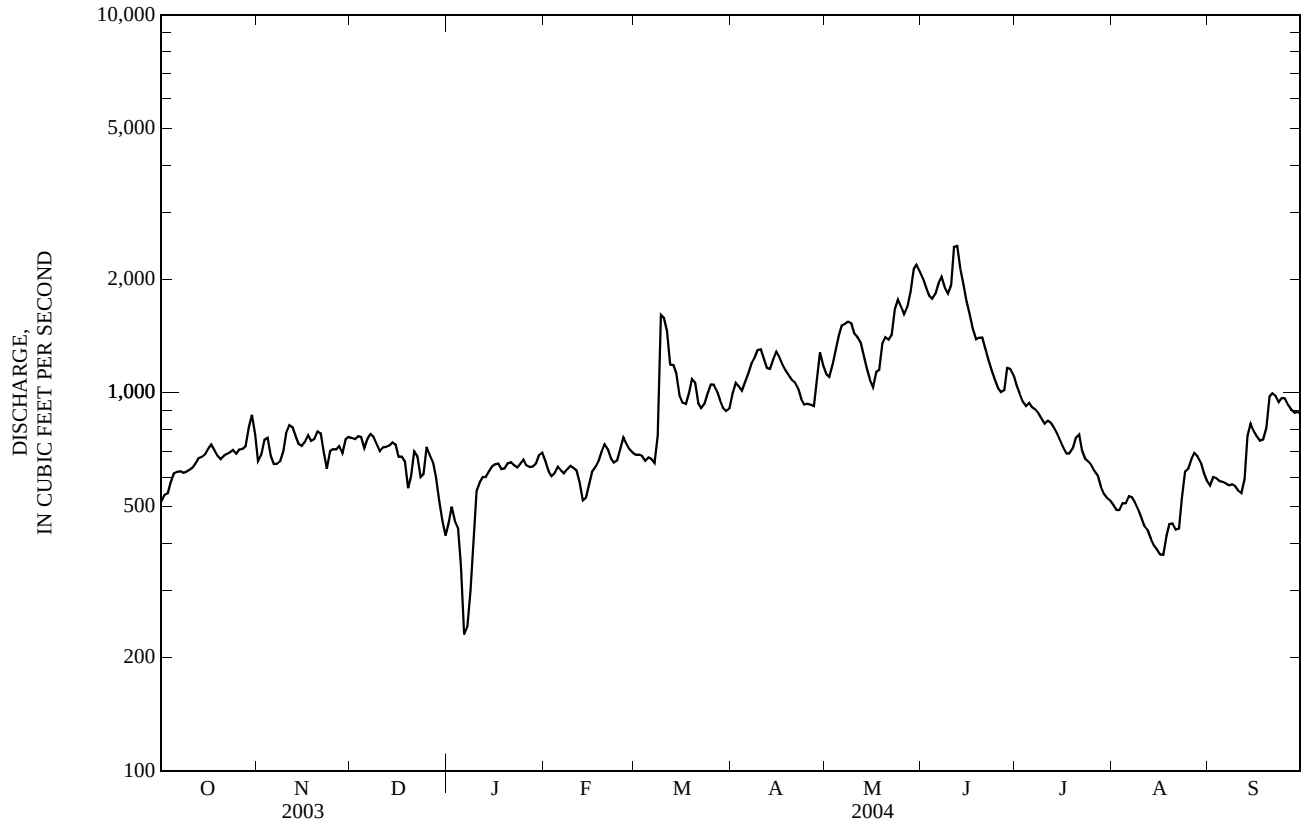
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2004, BY WATER YEAR (WY)

MEAN	836	830	722	706	842	1,046	1,480	2,479	2,787	1,223	625	681
MAX	1,287	1,173	1,233	1,149	2,124	1,664	3,072	6,345	7,090	2,920	1,423	1,423
(WY)	(1998)	(1998)	(1996)	(1997)	(1996)	(1986)	(1996)	(1997)	(1997)	(1998)	(1993)	(1993)
MIN	592	616	492	474	472	712	828	915	639	485	271	357
(WY)	(1993)	(1993)	(1993)	(1993)	(1989)	(1991)	(1991)	(1992)	(1992)	(2000)	(2000)	(1988)

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1986 - 2004	
ANNUAL TOTAL	448,579		319,238			
ANNUAL MEAN	1,229		872		1,188	
HIGHEST ANNUAL MEAN					2,219	1997
LOWEST ANNUAL MEAN					686	1992
HIGHEST DAILY MEAN	6,790	May 31	2,450	Jun 12	9,530	Jun 2, 1997
LOWEST DAILY MEAN	350	Feb 25	230	Jan 6	200	Dec 21, 1998
ANNUAL SEVEN-DAY MINIMUM	451	Aug 15	346	Jan 3	224	Aug 15, 1992
MAXIMUM PEAK FLOW			a2,620	Jun 12	c12,400	Feb 9, 1996
MAXIMUM PEAK STAGE			b6.31	Jan 18	b10.24	Dec 10, 1995
ANNUAL RUNOFF (AC-FT)	889,800		633,200		860,600	
10 PERCENT EXCEEDS	2,590		1,410		2,320	
50 PERCENT EXCEEDS	724		726		835	
90 PERCENT EXCEEDS	482		528		500	

a--Gage height, 5.63 ft.
b--Backwater from ice.
c--Gage height, 9.05 ft.
e--Estimated.



12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1991 to September 1998.
SUSPENDED-SEDIMENT DISCHARGE: March 1985 to March 2003, August 2003 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.0°C, Aug. 17, 1992; minimum, 0.0°C, on many days during winter.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,140 mg/L, Feb. 25, 1986; minimum daily mean, 1 mg/L, Sep. 12, 1987.
SEDIMENT LOAD: Maximum daily, 24,400 tons, Feb. 25, 1986; minimum daily 1.1 tons, Sep. 12, 1987.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 330 mg/L, Mar. 9; minimum daily mean, 3 mg/L, July 9, 10.
SEDIMENT LOAD: Maximum daily, 1,430 tons, Mar. 9; minimum daily, 4.3 tons, Jan. 6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)
NOV													
18...	1310	739	8.5	402	5.0	3.0	190	53.8	13.7	5.8	6	E.02	.06
MAR													
17...	1410	930	8.5	381	11.0	6.0	180	51.3	12.4	6.5	6	E.02	.11
APR													
21...	1125	1,080	8.1	304	9.0	6.5	130	38.5	9.12	4.6	6	<.04	.06
MAY													
18...	1145	1,110	8.4	224	18.5	10.0	99	28.2	6.93	3.1	3	<.04	E.03
JUN													
02...	1705	1,860	8.6	230	25.0	15.0	100	29.0	6.75	4.4	4	<.04	.06
14...	0925	1,950	8.2	239	15.0	12.0	100	30.5	6.83	5.2	6	<.04	.10
JUL													
20...	1020	768	8.4	301	22.0	18.0	140	37.9	10.6	4.9	6	<.04	E.04
AUG													
23...	1335	540	8.3	317	13.5	14.0	150	40.8	11.2	4.6	4	<.04	.04

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV													
18...	2.0	6.5	E3	110	<.08	.87	3.2	30	3.1	12	86	6	12
MAR													
17...	3.4	13.5	7	350	E.06	2.33	8.4	65	5.0	20	86	21	53
APR													
21...	2.7	8.1	8	190	.09	1.16	5.6	31	2.3	12	82	11	32
MAY													
18...	1.7	3.1	15	110	<.08	.32	3.5	11	1.8	4	68	6	18
JUN													
02...	2.5	6.3	11	180	E.05	.81	4.8	24	1.5	9	67	12	60
14...	2.4	10.9	12	300	E.07	1.90	6.7	54	2.7	19	75	18	95
JUL													
20...	2.1	4.1	E6	80	<.08	.47	3.3	21	1.6	5	79	7	15
AUG													
23...	1.8	4.1	<6	120	<.08	.58	4.4	24	3.1	8	77	8	12

E--Estimated.

12334550 CLARK FORK AT TURAH BRIDGE, NEAR BONNER, MT—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6	8.4	9	16	10	21	6	7.3	7	12	17	31
2	6	8.7	9	17	10	20	5	6.8	7	12	16	30
3	7	10	9	18	10	21	5	6.2	7	11	15	28
4	9	14	8	16	8	17	6	7.1	7	12	13	23
5	10	17	8	15	6	12	6	5.7	6	10	10	18
6	11	18	8	14	7	14	7	4.3	6	10	10	18
7	12	20	8	14	7	15	11	7.1	6	9.9	10	18
8	11	18	9	16	7	14	14	11	6	10	24	50
9	9	15	11	21	7	14	14	15	6	10	330	1,430
10	7	12	11	23	6	11	13	19	6	10	198	845
11	6	10	10	22	9	17	11	17	6	10	98	386
12	6	11	9	20	8	16	9	15	6	9.4	53	170
13	7	13	8	17	8	16	9	15	7	9.8	44	141
14	7	13	8	16	7	14	8	13	7	10	38	116
15	8	15	8	16	6	12	8	14	8	12	26	69
16	8	15	7	14	5	9.1	8	14	8	13	25	64
17	8	16	7	15	5	9.2	8	14	8	14	23	58
18	8	15	7	14	6	11	8	14	8	14	26	70
19	8	15	7	14	8	12	15	26	10	19	31	91
20	8	14	8	17	9	15	16	28	16	32	27	78
21	8	15	8	17	9	17	13	23	14	27	20	51
22	9	17	8	15	7	13	10	17	14	25	21	52
23	9	17	8	14	6	9.7	9	15	14	25	23	58
24	9	17	8	15	6	9.9	8	14	15	27	24	65
25	9	17	8	15	7	14	7	13	15	29	24	68
26	8	15	8	15	8	15	6	10	15	31	23	65
27	8	15	8	16	8	14	5	8.6	16	32	19	52
28	8	16	9	17	6	9.7	6	10	16	31	17	44
29	9	20	9	18	6	8.4	7	12	16	30	17	42
30	9	21	10	21	6	7.5	7	13	---	---	16	39
31	9	19	---	---	6	6.8	7	13	---	---	18	44
TOTAL	---	467.1	---	498	---	415.3	---	408.1	---	507.1	---	4,314
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19	51	11	33	16	87	7	20	7	9.6	8	12
2	19	54	11	33	12	62	7	19	7	9.3	8	13
3	21	59	10	32	12	59	6	15	7	9.3	7	11
4	22	60	16	56	14	67	6	15	8	11	7	11
5	25	72	25	96	17	84	5	13	9	12	6	9.4
6	28	85	24	98	25	132	4	9.9	10	14	6	9.3
7	31	100	22	90	21	115	4	9.8	9	13	6	9.2
8	32	106	19	79	15	77	4	9.5	8	11	6	9.3
9	32	112	17	70	13	64	3	6.9	7	9.3	6	9.2
10	31	109	12	47	25	130	3	6.7	6	7.5	6	9.0
11	24	80	8	30	57	374	5	11	6	7.2	6	8.8
12	23	72	8	29	51	337	5	11	5	5.9	7	11
13	21	66	5	17	27	155	4	8.7	5	5.6	12	25
14	25	82	5	16	19	99	4	8.5	6	6.4	12	27
15	23	80	5	15	16	76	5	10	7	7.3	9	19
16	18	61	5	14	14	61	5	9.7	7	7.1	8	17
17	20	64	8	25	12	48	4	7.5	7	7.1	8	16
18	18	56	7	22	10	38	5	9.3	8	9.1	8	16
19	16	48	9	33	11	42	6	12	8	9.7	9	20
20	15	44	10	38	13	49	7	14	8	9.8	17	45
21	12	35	10	37	12	42	8	17	7	8.2	17	46
22	12	33	11	42	11	36	9	17	7	8.3	16	42
23	12	31	18	81	10	31	8	14	10	14	15	38
24	13	33	20	96	9	26	8	14	12	20	14	37
25	12	30	14	64	8	22	9	16	12	20	12	31
26	10	25	11	48	8	22	9	15	11	20	10	25
27	10	25	13	59	8	22	9	15	10	19	10	24
28	15	44	19	95	12	38	8	12	10	18	10	24
29	18	62	31	178	10	31	8	12	9	16	10	24
30	12	38	27	159	8	24	8	11	8	13	10	24
31	---	---	22	125	---	---	6	8.4	8	13	---	---
TOTAL	---	1,817	---	1,857	---	2,450	---	377.9	---	350.7	---	622.2

12334650 BLACKFOOT RIVER BELOW ALICE CREEK, NEAR LINCOLN, MT

LOCATION.--Lat 46°59'21", long 112°30'40" (NAD 27) in SE¼SE¼SW¼ Sec. 5, T.14 NO., R.1 W., Lewis and Clark County, Hydrologic Unit 17010203, at discontinued gage site at road bridge, 0.4 mi upstream from mouth of Hogum Creek, 3.0 mi downstream from Alice Creek, and 8.2 mi northeast of Lincoln.

DRAINAGE AREA.--96.9 mi^2.

PERIOD OF RECORD.--October 1970 to June 1974, September 1995 to May 1997, March 2004 through November 2004.

GAGE.--None. Elevation at sampling site is 4,803 ft (NGVD 29).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Water years 1970-75.

REMARKS.--Unpublished records of instantaneous water temperature and specific conductance are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 23.0°C, July 10, 1973; minimum, 0.0°C, on many days during winter.

WATER-QUALITY DATA, MARCH 2004 TO NOVEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, white light, det ang 90+/-30 corrcted NTRU (63676	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
MAR												
18...	1300	21	--	<2.0	--	--	--	8.6	222	14.0	4.0	120
APR												
13...	0800	77	--	<2.0	--	--	--	8.0	193	6.0	4.5	93
MAY												
25...	0930	129	--	<2.0	640	10.4	96	7.8	174	7.0	4.5	87
JUL												
13...	0930	31	--	<2.0	643	9.4	100	8.2	234	23.0	10.5	120
AUG												
23...	0930	40	--	<2.0	634	9.0	97	8.2	222	7.0	10.5	110
NOV												
09...	0830	18	<2.0		640	11.6	99	8.0	251	2.0	1.5	130

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
MAR											
18...	27.1	11.6	<.010	<.016	<.002	.08	<.006	.009	<1	<2	<.04
APR											
13...	22.1	9.27	<.010	E.012	<.002	.14	<.006	.008	3	E1	.15
MAY											
25...	21.1	8.40	<.010	E.009	<.002	.08	<.006	.011	3	<2	.25
JUL											
13...	29.1	12.3	<.010	<.016	<.002	.05	<.006	.004	E1	<2	.07
AUG											
23...	26.4	11.6	E.005	<.016	<.002	.10	E.003	.016	6	<2	.05
NOV											
09...	31.1	12.6	<.010	<.016	<.002	E.05	<.006	.005	<2	<2	E.03

E--Estimated.

12334650 BLACKFOOT RIVER BELOW ALICE CREEK, NEAR LINCOLN, MT—Continued

WATER-QUALITY DATA, MARCH 2004 TO NOVEMBER 2004--CONTINUED

Date	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Zinc, water, unfltrd recover -able, ug/L (01092)	Sus- pended sedi- ment, percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
MAR								
18...	1.0	130	.06	6	7	54	2	.11
APR								
13...	3.1	180	.27	19	98	84	4	.83
MAY								
25...	3.2	210	.72	29	118	72	5	1.7
JUL								
13...	1.1	50	<.06	4	27	80	1	.08
AUG								
23...	1.9	150	.23	13	18	81	3	.32
NOV								
09...	1.2	20	<.06	2	13	75	1	.05

E--Estimated.

12334680 LANDERS FORK NEAR LINCOLN, MT

LOCATION.--Lat 46°58'40", long 112°33'19" (NAD 27) in SW¼NE¼SW¼ Sec. 12, T.14 NO., R.8 W., Lewis and Clark County, Hydrologic Unit 17010203, at highway bridge crossing, 0.24 mi southeast of Landers ForkRoad and 6.0 mi northeast of Lincoln.

DRAINAGE AREA.--130 mi^2.

PERIOD OF RECORD.--September 1995 to May 1997, March 2004 through November 2004.

GAGE.--None. Elevation at sampling site is 4,750 ft (NGVD 29).

WATER-QUALITY DATA, MARCH 2004 TO NOVEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
MAR												
18...	1200	17	--	<2.0	--	--	--	8.5	252	12.0	5.5	140
APR												
13...	0930	188	--	<2.0	--	--	--	8.3	211	6.0	4.5	110
MAY												
25...	1100	318	--	<2.0	642	11.5	107	8.0	206	9.5	5.0	120
JUL												
13...	1155	190	--	<2.0	664	9.5	99	8.1	222	27.0	11.0	120
AUG												
23...	1100	112	--	190	635	8.8	94	8.5	226	7.0	10.0	120
NOV												
09...	1000	51	<2.0	--	643	11.4	101	8.1	244	4.0	3.0	130

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
MAR											
18...	34.9	12.0	<.010	.021	<.002	.03	<.006	<.004	<1	E1	<.04
APR											
13...	29.7	9.49	<.010	.131	E.001	.19	<.006	.006	3	E1	<.04
MAY											
25...	29.4	10.1	<.010	.051	<.002	.23	<.006	E.004	3	<2	<.04
JUL											
13...	31.4	10.4	<.010	.025	<.002	.04	<.006	.007	5	<2	<.04
AUG											
23...	31.1	10.9	<.010	.075	E.001	.81	.017	.35	31	8	.32
NOV											
09...	33.5	11.2	<.010	.064	E.001	.18	<.006	.004	3	<2	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR								
18...	E.4	<9.0	<.06	<1	<2	75	1	.05
APR								
13...	.9	50	.10	3	<2	77	6	3.0
MAY								
25...	.8	40	.08	2	<2	73	5	4.3
JUL								
13...	.8	70	.28	12	3	84	7	3.6
AUG								
23...	13.6	3,770	18.6	716	30	98	298	90
NOV								
09...	.8	10	.08	2	<2	83	2	.28

E--Estimated.

12334800 BLACKFOOT RIVER AT DALTON MOUNTAIN ROAD BRIDGE, NEAR LINCOLN, MT

LOCATION.--Lat 46°56'42", long 112°44'17" (NAD 27) in NE¼NW¼NE¼ Sec. 28, T.14 NO., R.9 W., Lewis and Clark County, Hydrologic Unit 17010203, at county road bridge to Dalton Mountain and 3.2 mi southwest of Lincoln.

DRAINAGE AREA.--399 mi^2.

PERIOD OF RECORD.--Water years 1973, 1995-97, March 2004 through November 2004.

GAGE.--None. Elevation at sampling site is 4,460 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR MARCH 2004 TO NOVEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
MAR												
18...	1030	85	--	<2.0	--	--	--	8.4	309	10.0	4.0	170
APR												
13...	1045	224	--	3.2	--	--	--	8.2	253	8.5	5.0	140
MAY												
25...	1250	577	--	<2.0	648	10.8	107	8.1	233	12.0	8.0	130
JUL												
13...	1315	312	--	<2.0	649	9.0	104	8.3	263	29.0	14.5	150
AUG												
23...	1200	232	--	8.9	644	8.9	95	8.4	268	9.0	10.5	150
NOV												
09...	1130	105	<2.0	--	650	11.2	102	8.0	305	6.0	4.5	160

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)	Copper, water, unfltrd recoverable, ug/L (01042)
MAR												
18...	46.0	13.2	<.010	.033	<.002	.09	<.006	.009	<2	<2	<.04	.9
APR												
13...	37.9	11.1	<.010	.045	E.001	.11	<.006	.015	<2	<2	<.04	1.6
MAY												
25...	33.6	10.4	<.010	.022	<.002	.07	<.006	.010	2	<2	E.03	2.1
JUL												
13...	39.0	11.7	<.010	<.016	<.002	.04	<.006	.009	5	E1	<.04	1.3
AUG												
23...	38.5	12.1	<.010	.023	E.001	.14	E.004	.038	10	E2	E.03	1.8
NOV												
09...	45.3	12.6	E.005	.022	<.002	.07	<.006	.006	<2	E1	<.04	.7

Date	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR							
18...	70	.08	6	<2	73	3	.69
APR							
13...	210	.34	13	6	84	17	10
MAY							
25...	110	.20	7	10	66	9	14
JUL							
13...	80	.21	11	2	89	6	5.1
AUG							
23...	320	1.42	48	4	94	25	16
NOV							
09...	30	E.04	3	<2	44	4	1.1

E--Estimated.

12335100 BLACKFOOT RIVER ABOVE NEVADA CREEK, NEAR HELMVILLE, MT

LOCATION.--Lat 46°55'09", long 113°00'53" (NAD 27), in SW¼SW¼SE¼ sec. 32, T.14 N., R.11 W., Powell County, Hydrologic Unit 17010203, on right bank 40 ft downstream from county road bridge, 1.9 mi south of Browns Lake, 4.2 mi upstream from Nevada Creek, 4.4 mi northwest of Helmville, and at river mile 72.0.
DRAINAGE AREA.--494 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1999 to current year. Records equivalent to those published as "12335000 Blackfoot River near Helmville," September 1940 to October 1953 at site 13.5 mi upstream.
GAGE.--Water-stage recorder. Elevation of gage is 4,280 ft (NGVD 29).
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Numerous diversions for irrigation upstream from station. Several observations of water temperature and specific conductance were made during the year. U. S. Geological Survey satellite telemeter at station.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1953 reached a discharge of 6,040 ft^3/s at 12335000 Blackfoot River near Helmville.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	e140	155	e140	e140	122	148	491	707	542	201	202
2	147	e150	153	e140	e130	121	151	482	667	511	194	198
3	147	e150	153	e130	e130	121	149	503	652	485	195	199
4	148	e150	154	e120	e130	120	148	537	668	483	196	199
5	148	e140	152	e110	e140	120	148	612	717	484	191	201
6	e150	e140	151	e100	e130	122	148	720	796	469	189	196
7	e145	e130	156	e120	e130	119	149	765	855	449	185	195
8	142	e140	154	e130	125	126	153	792	804	451	190	193
9	142	e150	151	e130	124	159	182	838	769	429	183	189
10	143	162	e145	e130	124	181	226	811	745	410	177	186
11	145	169	148	e130	124	181	235	798	752	401	174	183
12	148	165	147	e130	e120	170	237	750	719	384	170	203
13	154	159	148	e130	e110	174	243	668	682	361	166	217
14	155	156	149	e130	e110	170	272	607	652	341	161	212
15	154	157	147	e130	e120	159	327	560	618	325	156	208
16	156	153	146	e140	e125	155	366	518	595	305	154	202
17	156	154	147	e130	126	162	368	505	569	291	151	199
18	153	153	e140	e130	125	175	366	492	548	280	160	198
19	151	156	e140	e140	126	184	354	520	535	282	166	206
20	149	161	e140	e150	125	176	348	530	514	284	170	219
21	151	156	e150	e150	124	162	344	556	486	271	201	220
22	149	e130	e140	e150	123	158	336	643	464	259	199	214
23	149	e140	e140	e150	123	157	326	702	475	250	228	204
24	148	e150	e150	e140	122	158	330	699	508	246	250	199
25	144	e150	160	e130	123	157	346	676	514	238	243	194
26	144	e150	163	e130	123	154	352	658	544	234	248	189
27	145	e140	157	e140	123	151	363	689	543	223	245	186
28	153	e140	e140	e150	123	147	413	722	527	218	235	185
29	172	e150	e130	e160	122	143	504	759	539	214	229	184
30	173	157	e130	e150	---	141	505	780	560	208	221	182
31	e150	---	e140	e140	---	140	---	756	---	205	213	---
TOTAL	4,655	4,498	4,576	4,180	3,620	4,685	8,537	20,139	18,724	10,533	6,041	5,962
MEAN	150	150	148	135	125	151	285	650	624	340	195	199
MAX	173	169	163	160	140	184	505	838	855	542	250	220
MIN	142	130	130	100	110	119	148	482	464	205	151	182
AC-FT	9,230	8,920	9,080	8,290	7,180	9,290	16,930	39,950	37,140	20,890	11,980	11,830

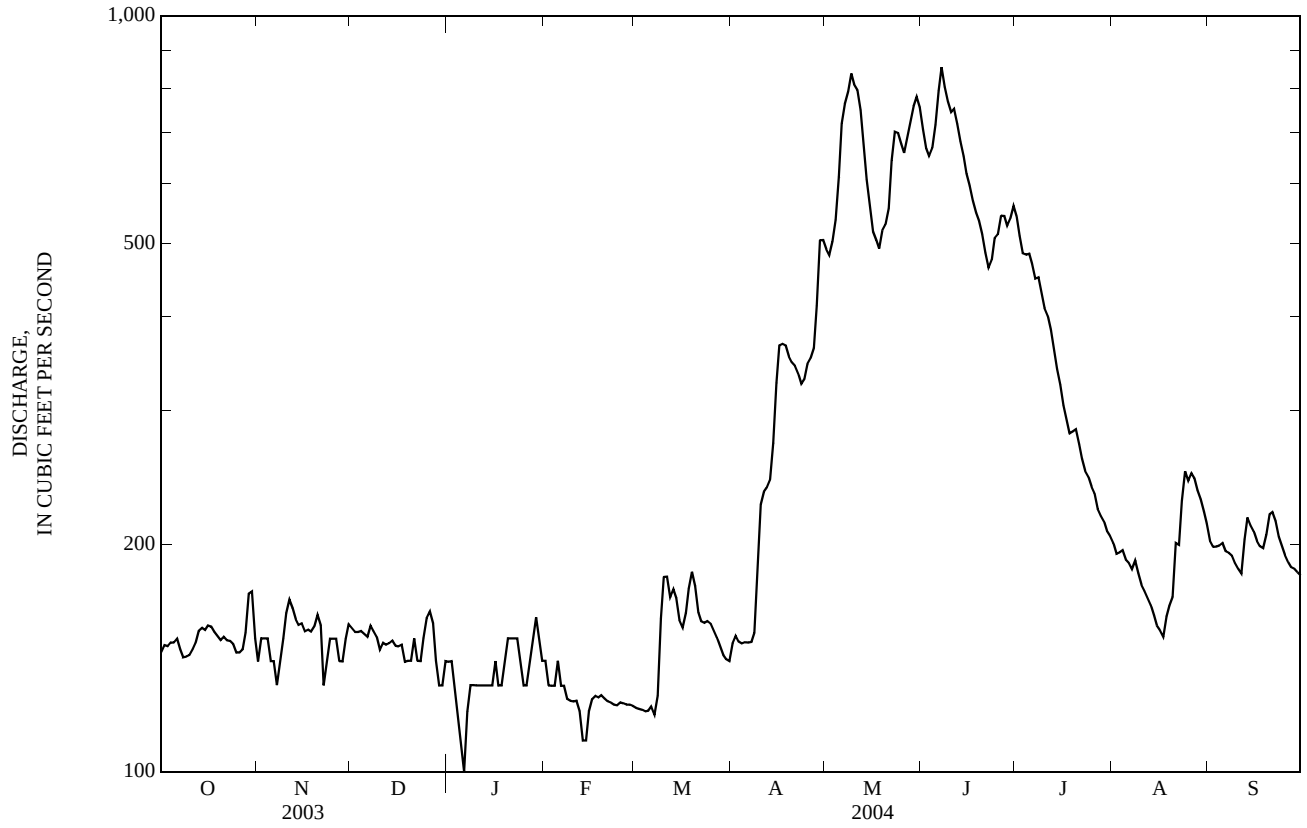
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

MEAN	161	154	144	138	129	146	257	620	834	342	185	164
MAX	175	180	165	152	151	183	398	802	1,457	538	242	199
(WY)	(2000)	(2000)	(2000)	(2000)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2004)
MIN	142	139	128	129	107	121	139	433	578	262	152	135
(WY)	(2002)	(2002)	(2001)	(2001)	(2001)	(2002)	(2001)	(2001)	(2000)	(2000)	(2000)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	110,101		96,150			
ANNUAL MEAN	302		263		273	
HIGHEST ANNUAL MEAN					328	2002
LOWEST ANNUAL MEAN					215	2001
HIGHEST DAILY MEAN	1,820	May 31	855	Jun 7	1,820	Jun 18, 2002
LOWEST DAILY MEAN	90	Feb 24	100	Jan 6	90	Feb 14, 2001
ANNUAL SEVEN-DAY MINIMUM	112	Feb 23	119	Feb 9	95	Feb 26, 2001
MAXIMUM PEAK FLOW			882	Jun 7	1,890	Jun 19, 2002
MAXIMUM PEAK STAGE			5.39	Jun 7	6.91	Jun 19, 2002
ANNUAL RUNOFF (AC-FT)	218,400		190,700		197,700	
10 PERCENT EXCEEDS	681		577		615	
50 PERCENT EXCEEDS	161		162		163	
90 PERCENT EXCEEDS	139		130		130	

e--Estimated.

12335100 BLACKFOOT RIVER ABOVE NEVADA CREEK, NEAR HELMVILLE, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.-November 1995 to August 1998, April 2002 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
02...	1330	154	7.3	--	--	--	8.2	294	5.0	3.0	--
MAR											
11...	1530	182	3.1	--	--	--	8.2	259	10.0	5.5	140
APR											
13...	1215	245	2.9	--	--	--	8.4	271	16.0	9.5	150
MAY											
26...	1645	648	7.7	653	9.5	98	8.4	236	12.5	10.0	130
JUL											
14...	1330	340	<2.0	657	8.1	100	8.5	272	30.0	18.0	150
AUG											
23...	1400	231	5.6	649	8.6	98	8.5	287	12.5	14.0	160

12335100 BLACKFOOT RIVER ABOVE NEVADA CREEK, NEAR HELMVILLE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unf by anal ysis, mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
02...	--	--	--	E.009	E.001	.03	<.006	.008	--	--	--
MAR											
11...	37.8	11.6	.023	E.015	E.001	.27	<.006	.022	<2	2	<.04
APR											
13...	39.1	11.6	<.010	<.016	E.001	.08	<.006	.009	<2	E1	<.04
MAY											
26...	35.5	10.8	<.010	E.009	<.002	.07	<.006	.017	2	<1	<.04
JUL											
14...	39.6	12.1	<.010	<.016	<.002	.04	<.006	.009	5	E1	<.04
AUG											
23...	40.4	13.2	<.010	<.016	<.002	.11	E.005	.027	13	3	E.02

Date	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
DEC								
02...	--	--	--	--	--	53	12	5.0
MAR								
11...	1.3	140	.14	24	E1	91	7	3.4
APR								
13...	1.0	150	.21	21	E1	88	9	6.0
MAY								
26...	1.6	230	.36	14	3	67	25	44
JUL								
14...	1.0	80	.16	11	E2	81	5	4.6
AUG								
23...	1.2	220	.63	31	2	96	12	7.5

E--Estimated.

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR HELMVILLE, MT

LOCATION.--Lat 46°46'42", long 112°46'00" (NAD 27), in SW¼NW¼SW¼ sec.20, T.12 N., R.9 W., Powell County, Hydrologic Unit 17010203, on right bank 0.7 mi upstream from Nevada Lake, 1.1 mi downstream from Gallagher Creek, 11 mi southeast of Helmville, and at river mile 34.5.

DRAINAGE AREA.--116 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year. Prior to October 2001, published as "near Finn."

GAGE.--Water-stage recorder. Elevation of gage is 4,640 ft (NGVD 29). Prior to Apr. 30, 1942, nonrecording gage at site 0.1 mi, downstream at different elevation. Apr. 30, 1942 to July 26, 1953, water-stage recorder at site 0.2 mi downstream at different elevation. July 26, 1953, to Nov. 6, 1978, water-stage recorder at site 0.8 mi upstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,900 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	e10	e10	e8.0	e16	e14	31	20	45	19	11	7.0
2	7.7	e11	e11	e8.0	e15	e13	30	19	40	33	12	8.0
3	8.0	e11	e10	e7.0	e14	e12	27	21	37	28	13	9.4
4	8.1	e10	e9.5	e6.0	e13	e13	26	29	36	37	13	9.7
5	8.1	e9.0	e10	e5.5	e14	e14	26	38	36	27	12	9.3
6	8.3	e8.0	e12	e5.0	e13	e15	27	40	46	22	12	9.1
7	8.1	e9.0	e11	e7.0	e14	e17	28	38	39	21	11	8.8
8	7.1	e10	e10	e9.0	e15	e25	32	38	39	18	11	8.6
9	6.7	e12	e9.0	e10	e15	e90	36	39	41	18	11	8.7
10	7.1	e15	e8.0	e10	e15	e150	31	41	54	18	10	8.9
11	7.4	e15	e9.0	e10	e13	e110	28	43	45	18	9.7	9.0
12	8.9	e13	e9.0	e10	e10	e120	27	37	36	16	9.2	15
13	8.9	e11	e10	e10	e9.0	106	27	32	32	15	8.6	19
14	9.0	e10	e10	e10	e9.0	51	31	29	28	13	7.8	14
15	10	e10	e10	e10	e12	32	34	26	27	13	6.3	11
16	12	e11	e9.5	e11	e14	47	33	25	27	17	6.3	10
17	10	e12	e9.0	e11	e20	163	32	25	26	19	6.5	9.4
18	9.7	e13	e9.0	e10	e16	115	30	23	25	19	9.9	9.7
19	9.1	e16	e8.5	e11	e14	69	29	32	26	20	6.4	12
20	9.4	e10	e9.0	e12	e13	33	28	26	21	18	5.7	13
21	9.7	e9.0	e11	e14	e12	30	26	29	20	17	5.3	12
22	9.6	e8.0	e10	e15	e11	33	22	49	19	16	5.6	10
23	9.6	e9.0	e9.0	e15	e11	37	21	70	17	15	16	9.6
24	9.4	e10	e10	e14	e11	38	21	62	15	14	10	9.2
25	9.5	e11	e10	e12	e13	33	21	55	17	13	8.4	8.9
26	9.9	e10	e9.0	e13	e14	30	20	52	25	13	8.6	8.6
27	10	e9.5	e8.0	e15	e14	26	18	50	22	13	10	8.9
28	12	e9.0	e8.0	e17	e13	25	29	55	28	13	9.1	10
29	19	e9.5	e7.5	e18	e14	23	30	53	19	12	8.4	12
30	13	e10	e7.0	e18	---	23	26	49	18	11	7.9	12
31	e10	---	e7.5	e17	---	24	---	50	---	11	7.4	---
TOTAL	293.6	321.0	290.5	348.5	387.0	1,531	827	1,195	906	557	289.1	310.8
MEAN	9.47	10.7	9.37	11.2	13.3	49.4	27.6	38.5	30.2	18.0	9.33	10.4
MAX	19	16	12	18	20	163	36	70	54	37	16	19
MIN	6.7	8.0	7.0	5.0	9.0	12	18	19	15	11	5.3	7.0
AC-FT	582	637	576	691	768	3,040	1,640	2,370	1,800	1,100	573	616

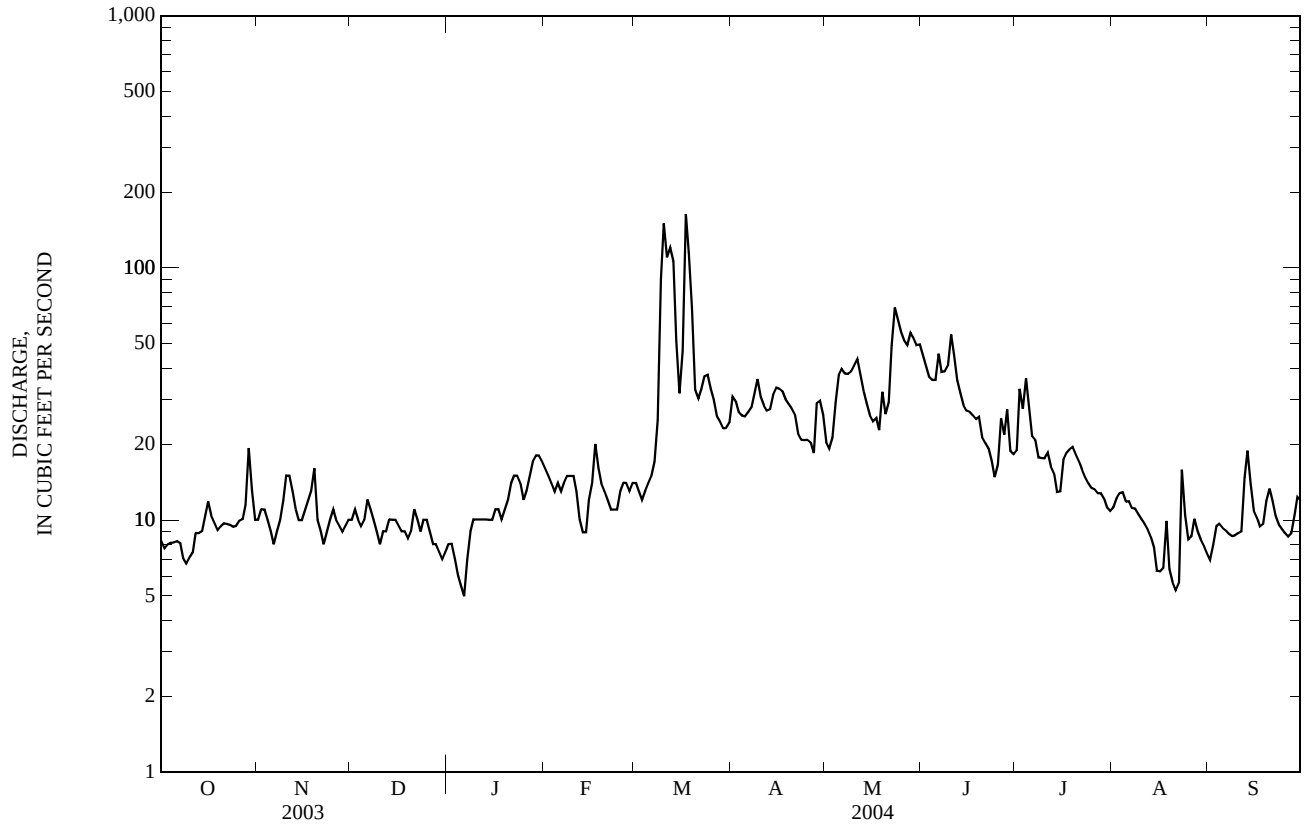
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

MEAN	13.8	14.4	12.3	11.6	15.7	34.4	66.4	111	88.7	27.2	14.2	10.2
MAX	32.2	28.8	47.4	54.5	84.6	114	196	356	429	96.5	40.5	28.2
(WY)	(1960)	(1976)	(1976)	(1984)	(1986)	(1978)	(1952)	(1976)	(1975)	(1955)	(1975)	(1965)
MIN	5.52	5.73	3.74	3.83	4.17	7.61	10.0	16.0	11.5	6.19	3.89	3.68
(WY)	(1940)	(1989)	(1993)	(1988)	(1944)	(1962)	(1941)	(1977)	(1992)	(1985)	(1961)	(1940)

12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR HELMVILLE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	11,416.2		7,256.5			
ANNUAL MEAN	31.3		19.8		35.2	
HIGHEST ANNUAL MEAN					77.2	1975
LOWEST ANNUAL MEAN					11.8	1988
HIGHEST DAILY MEAN	300	Mar 13	163	Mar 17	1,240	May 22, 1981
LOWEST DAILY MEAN	3.6	Sep 3	5.0	Jan 6	2.0	Jan 11, 1944
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 1	6.5	Aug 16	2.0	Feb 9, 1944
MAXIMUM PEAK FLOW			328	Mar 17	b1,800	Jun 2, 1953
MAXIMUM PEAK STAGE			3.28	Mar 17	c7.40	May 29, 1953
INSTANTANEOUS LOW FLOW			a4.7	Aug 21	d2.0	Aug 20, 1944
ANNUAL RUNOFF (AC-FT)	22,640		14,390		25,510	
10 PERCENT EXCEEDS	78		37		86	
50 PERCENT EXCEEDS	12		13		15	
90 PERCENT EXCEEDS	7.8		8.2		6.5	

a--Gage height, 1.30 ft, may have been less during period of ice affect.
b--Gage height, 6.00 ft, site and datum then in use; from rating curve extended above 400 ft^3/s, on the basis of inflow-outflow study of Nevada Lake.
c--Site and datum then in use; backwater from diversion dam.
d--Probably less than 2.0 ft^3/s in several years.
e--Estimated.



12335500 NEVADA CREEK ABOVE RESERVOIR, NEAR HELMVILLE, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1994 to January 2000, May 2003 to August 2004 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
DEC										
02...	0900	11	8.4	--	--	--	7.7	263	-1.0	.5
MAR										
10...	1030	146	15	--	--	--	7.4	115	.5	.0
APR										
13...	1445	28	2.7	--	--	--	8.3	229	19.0	9.5
MAY										
27...	1400	51	2.6	642	9.4	106	8.4	252	16.0	13.0
JUL										
14...	1600	13	<2.0	646	7.6	106	8.5	286	32.0	23.5
AUG										
25...	1330	8.4	2.3	640	9.2	108	8.5	293	14.0	14.5

Date	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)
DEC											
02...	--	--	--	--	.031	E.001	.21	.024	.050	--	--
MAR											
10...	37	10.8	2.55	.251	.101	.005	1.39	.185	.30	8	5
APR											
13...	110	28.7	8.12	<.010	<.016	<.002	.21	.017	.036	E1	4
MAY											
27...	120	34.7	8.64	<.010	<.016	E.001	.38	.024	.056	2	4
JUL											
14...	140	39.5	10.6	E.005	E.011	<.002	.36	.028	.062	E1	5
AUG											
25...	140	39.3	10.7	<.010	<.016	<.002	.23	.033	.059	<2	6

Date	Cadmium water, unfltrd ug/L (01027)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC									
02...	--	--	--	--	--	--	97	9	.27
MAR									
10...	E.02	2.8	770	.69	131	5	68	44	17
APR									
13...	<.04	1.1	310	.12	45	<2	92	7	.53
MAY									
27...	<.04	1.9	270	.18	37	<2	80	8	1.1
JUL									
14...	<.04	1.1	290	.13	64	E1	89	7	.25
AUG									
25...	<.04	1.0	260	.07	42	<2	90	4	.09

E--Estimated.

12336600 NEVADA CREEK BELOW RESERVOIR, NEAR HELMVILLE, MT

LOCATION.--Lat 46°48'10", long 112°49'00" (NAD 27) in SW¼SW¼SE¼ Sec. 11, T.12 N., R.10 W., Powell County, Hydrologic Unit 17010203, 0.6 mi downstream of Nevada Lake, 8.3 mi southeast of Helmville and at river mile 31.1.

DRAINAGE AREA.--143 mi^2.

PERIOD OF RECORD.--December 2003 to August 2004.

GAGE.--Seasonal gage operated by Montana Department of Natural Resources and Conservation. Elevation at sampling site is 4,540 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
02...	1030	4.9	27	--	--	--	7.9	257	2.0	4.5	--
MAR											
10...	1130	4.9	9.8	--	--	--	7.7	253	2.5	6.0	120
APR											
14...	1900	6.5	16	643	--	--	8.0	238	11.0	7.5	110
MAY											
27...	1140	62	18	644	9.0	95	7.9	228	13.0	10.0	110
JUL											
14...	1445	22	15	650	13.6	164	8.8	245	32.0	16.5	110
AUG											
25...	1145	39	18	641	7.2	88	8.4	236	13.0	16.5	100

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
02...	--	--	--	.058	.005	.67	E.003	.102	--	--	--
MAR											
10...	33.0	9.18	.105	.120	.004	.49	.029	.109	<1	5	<.04
APR											
14...	29.7	7.74	.029	.017	E.001	.69	.023	.117	<1	5	<.04
MAY											
27...	30.1	7.38	<.010	<.016	E.001	.24	.011	.095	E1	3	<.04
JUL											
14...	32.0	8.02	.129	.029	.007	.76	.054	.162	<1	8	<.04
AUG											
25...	27.8	7.93	.295	.122	.017	1.07	.072	.154	E1	11	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC								
02...	--	--	--	--	--	99	28	.37
MAR								
10...	1.8	700	.20	466	E1	95	11	.15
APR								
14...	1.6	690	.45	507	E2	95	24	.42
MAY								
27...	2.0	620	.47	166	E2	97	22	3.7
JUL								
14...	1.2	580	.32	356	E1	96	18	1.1
AUG								
25...	1.7	710	.69	92	2	99	26	2.7

E--Estimated.

12337800 NEVADA CREEK AT MOUTH, NEAR HELMVILLE, MT

LOCATION.--Lat 46°53'27", long 113°02'216" (NAD 27), in SW¼SW¼SW¼ sec.7, T.13N., R.11W., Powell County, Hydrologic Unit 17010203, on left bank 0.5 mi upstream from private road bridge, 3.8 mi southwest of Browns Lake, 4.0 mi northwest of Helmville, and at river mile 0.7.

DRAINAGE AREA.--308 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,240 ft (NGVD 29). Oct. 1, 2001 to Oct. 2, 2002, water-stage recorder 0.5 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Partial regulation by Nevada lake (station number 12336500). Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	e25	e25	e22	e16	21	37	16	46	23	18	18
2	21	23	e26	e22	e15	21	41	15	44	18	19	18
3	20	e23	e24	e18	e15	21	40	15	42	19	19	20
4	21	e22	e22	e15	e14	21	39	14	39	28	23	17
5	22	e20	e24	e10	e15	21	39	16	35	35	18	16
6	21	e18	26	e6.0	e14	20	38	15	34	36	17	16
7	20	e19	26	e7.0	e15	20	38	14	37	34	16	18
8	19	e19	e25	e9.0	e16	42	38	16	34	32	17	23
9	19	e20	e25	e10	e17	205	40	20	37	31	17	26
10	20	22	e24	e12	e17	272	39	20	45	28	16	24
11	21	26	25	e13	e15	154	38	26	49	29	16	23
12	22	27	25	e14	e12	87	36	24	45	33	12	30
13	22	e25	24	e15	e14	73	31	21	41	30	15	39
14	22	e22	24	e15	e16	55	31	22	39	27	15	35
15	22	e22	24	e15	19	47	32	24	40	26	13	31
16	23	23	e22	e16	20	50	31	21	35	25	12	29
17	23	24	e22	e15	20	48	29	22	33	24	12	28
18	23	24	e21	e14	19	48	28	25	31	23	14	28
19	23	27	e20	e15	20	50	28	33	31	20	13	31
20	22	e23	e21	e17	20	41	28	34	33	21	12	39
21	22	e22	e23	e18	20	40	26	36	33	21	15	42
22	22	e20	e22	e18	20	39	23	38	33	22	15	35
23	22	e22	e20	e18	21	39	23	42	29	20	19	30
24	21	e23	e22	e17	21	40	20	43	29	17	26	27
25	21	e25	e24	e14	21	39	19	41	29	18	24	25
26	22	e24	e23	e15	21	38	18	40	33	17	23	24
27	23	e23	e22	e16	21	37	15	43	31	19	25	22
28	24	e22	e22	e18	21	36	15	47	32	17	25	20
29	30	e24	e22	e20	21	36	16	52	32	17	24	20
30	29	e25	e21	e19	---	36	16	49	27	17	21	20
31	e28	---	e22	e16	---	35	---	45	---	19	20	---
TOTAL	690	684	718	469.0	516	1,732	892	889	1,078	746	551	774
MEAN	22.3	22.8	23.2	15.1	17.8	55.9	29.7	28.7	35.9	24.1	17.8	25.8
MAX	30	27	26	22	21	272	41	52	49	36	26	42
MIN	19	18	20	6.0	12	20	15	14	27	17	12	16
AC-FT	1,370	1,360	1,420	930	1,020	3,440	1,770	1,760	2,140	1,480	1,090	1,540

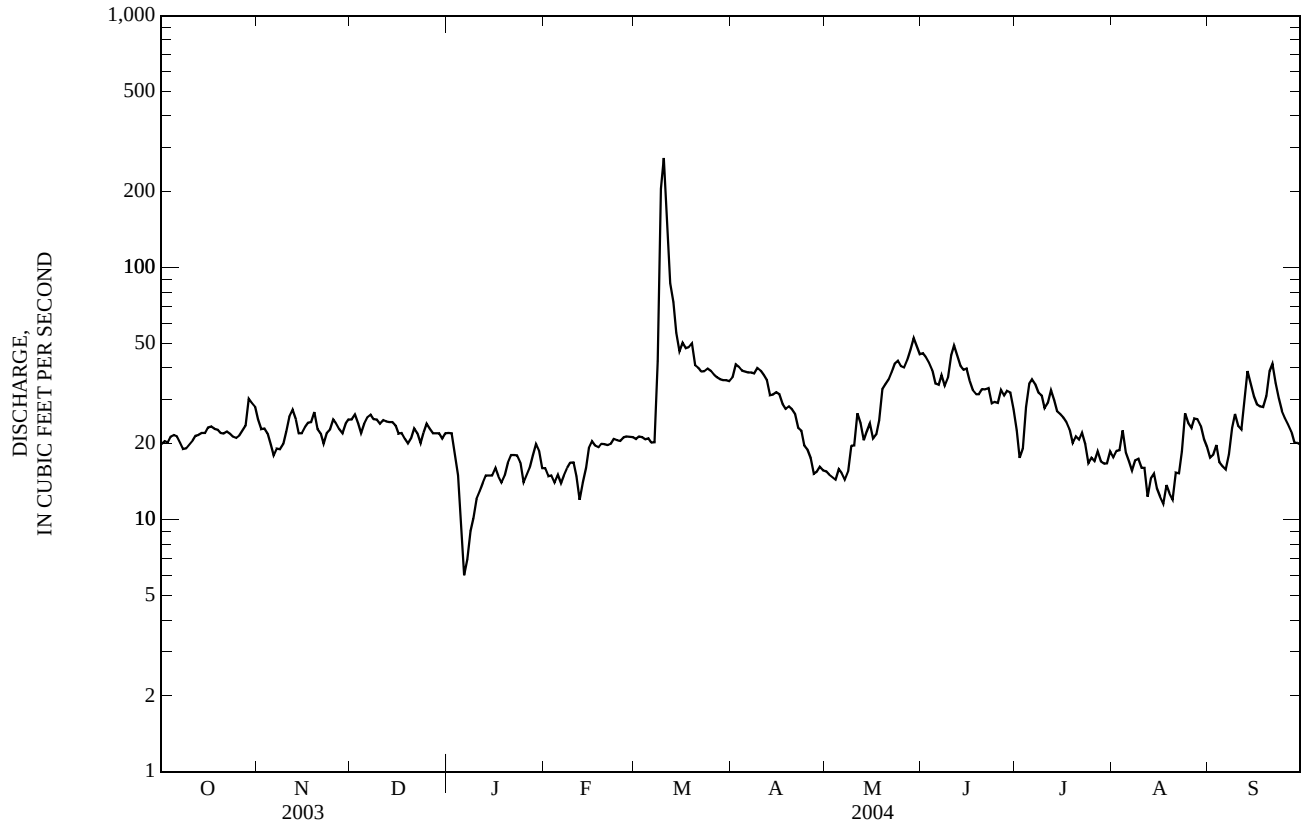
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

MEAN	22.1	23.9	23.2	21.6	28.8	61.4	70.3	66.1	70.1	31.4	23.3	27.5
MAX	24.5	24.6	24.5	26.8	47.8	102	112	135	97.0	40.2	27.7	31.2
(WY)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)
MIN	19.7	22.8	21.9	15.1	17.8	26.5	29.7	28.7	35.9	24.1	17.8	25.5
(WY)	(2003)	(2004)	(2002)	(2004)	(2004)	(2002)	(2004)	(2004)	(2004)	(2004)	(2004)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2001 - 2004	
ANNUAL TOTAL	20,315		9,739.0			
ANNUAL MEAN	55.7		26.6		39.1	
HIGHEST ANNUAL MEAN					55.7	2003
LOWEST ANNUAL MEAN					26.6	2004
HIGHEST DAILY MEAN	500	Mar 14	272	Mar 10	500	Mar 14, 2003
LOWEST DAILY MEAN	17	Aug 4	6.0	Jan 6	6.0	Jan 6, 2004
ANNUAL SEVEN-DAY MINIMUM	19	Aug 2	9.6	Jan 5	9.6	Jan 5, 2004
MAXIMUM PEAK FLOW			351	Mar 10	a500	Mar 14, 2003
MAXIMUM PEAK STAGE			4.22	Mar 10	b5.86	Feb 2, 2003
ANNUAL RUNOFF (AC-FT)	40,290		19,320		28,350	
10 PERCENT EXCEEDS	119		39		71	
50 PERCENT EXCEEDS	28		22		25	
90 PERCENT EXCEEDS	20		15		19	

a--Estimated daily discharge during period of ice effect.
b--Backwater from ice.
e--Estimated.

12337800 NEVADA CREEK AT MOUTH, NEAR HELMVILLE, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2001 to current year.

INSTRUMENTATION.--Temperature probe installed Oct. 25, 2001.

REMARKS--Water temperature record good. Missing temperature data for May 22-27 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, July 13, 2002; minimum, 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, July, 16, 17; minimum, 0.0°C, many days October through March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
02...	1200	26	20	--	--	--	8.0	379	4.5	0.0	--
MAR											
10...	1330	312	99	--	--	--	7.3	246	8.0	1.0	76
APR											
14...	1700	31	24	--	--	--	8.4	374	13.0	12.5	170
MAY											
26...	1530	39	14	648	11.4	132	8.6	461	15.0	14.5	220
JUL											
14...	1140	27	5.5	658	9.5	122	8.8	401	28.0	20.0	180
AUG											
24...	0930	29	3.5	652	8.5	91	8.4	402	9.0	11.5	190

12337800 NEVADA CREEK AT MOUTH, NEAR HELMVILLE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unf by anal ysis, mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
02...	--	--	--	.151	.003	.49	.063	.106	--	--	--
MAR											
10...	20.7	5.90	.868	.147	.013	3.64	.449	.972	3	5	.06
APR											
14...	49.2	12.5	.016	.018	.002	.55	.089	.175	<1	5	<.04
MAY											
26...	58.6	17.0	<.010	<.016	<.002	.69	.112	.191	E1	6	<.04
JUL											
14...	47.6	14.7	<.010	<.016	<.002	.44	.052	.087	E1	5	<.04
AUG											
24...	51.1	14.5	E.008	<.016	E.001	.49	.039	.084	E1	7	<.04

Date	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
DEC								
02...	--	--	--	--	--	99	21	1.5
MAR								
10...	7.8	3,540	3.20	299	14	91	292	246
APR								
14...	2.1	750	.71	133	2	99	43	3.6
MAY								
26...	2.9	520	.46	112	E2	98	30	3.2
JUL								
14...	1.3	170	.18	22	<2	99	6	.44
AUG								
24...	2.2	140	.15	17	E1	96	6	.47

E--Estimated.

12337800 NEVADA CREEK AT MOUTH, NEAR HELMVILLE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.0	8.5	10.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
2	12.5	9.0	11.0	0.5	0.0	---	0.0	0.0	0.0	0.0	0.0	0.0
3	12.0	8.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	12.0	8.5	10.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	12.5	9.0	11.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	13.0	9.5	11.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	12.0	10.0	11.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	12.0	9.0	10.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	11.0	9.0	10.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	9.0	6.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	9.0	5.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	9.0	7.0	8.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	7.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	6.5	4.5	5.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	7.0	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	9.5	6.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	9.5	7.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	9.5	6.5	8.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	10.5	8.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	13.0	9.5	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	12.0	9.5	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.5	7.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	7.0	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	5.0	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	6.0	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	8.0	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	7.5	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	7.5	2.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	2.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	---	0.0	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	13.0	0.0	8.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	3.5	1.0	2.5	8.5	4.5	6.0	17.0	9.5	13.5
2	0.0	0.0	0.0	3.0	0.5	2.0	6.5	3.5	5.0	16.5	12.0	14.5
3	0.0	0.0	0.0	2.5	0.0	1.0	11.0	3.5	7.0	17.5	12.5	15.0
4	0.0	0.0	0.0	3.5	0.5	2.0	11.5	7.0	9.0	17.0	12.0	15.0
5	0.0	0.0	0.0	3.5	0.5	2.0	12.5	6.0	9.5	18.0	13.0	16.0
6	0.0	0.0	0.0	2.0	0.0	1.0	13.5	8.0	10.5	17.0	12.5	15.0
7	0.0	0.0	0.0	4.0	0.0	1.0	13.0	6.5	10.0	18.0	13.5	16.0
8	0.5	0.0	0.0	4.0	0.0	3.0	12.0	8.5	10.0	17.0	13.0	15.5
9	1.0	0.0	0.5	1.0	0.0	0.5	10.0	7.0	8.5	16.5	8.5	12.5
10	1.0	0.0	0.5	1.5	0.0	0.5	12.0	4.5	8.0	11.5	7.0	9.0
11	1.0	0.0	0.5	2.0	0.0	0.5	13.0	6.5	10.0	9.0	4.5	7.0
12	0.0	0.0	0.0	3.0	0.0	1.0	14.5	7.5	11.0	9.0	5.0	7.0
13	0.0	0.0	0.0	3.5	0.5	1.5	13.5	9.0	11.5	10.5	5.5	8.0
14	0.0	0.0	0.0	3.0	0.0	1.5	12.0	9.5	11.0	13.0	7.0	10.0
15	0.0	0.0	0.0	5.5	0.5	2.5	10.5	7.0	8.5	15.5	9.0	12.0
16	0.5	0.0	0.0	4.5	1.5	3.0	10.5	5.5	8.0	14.5	11.0	12.0
17	0.5	0.0	0.5	6.5	1.5	4.0	10.0	7.0	8.5	18.0	10.0	13.0
18	2.5	0.5	1.5	8.0	2.5	5.0	10.5	6.0	8.5	12.5	8.5	10.0
19	2.5	1.0	2.0	6.0	2.5	4.0	10.5	6.5	8.5	16.0	8.0	11.5
20	2.5	1.0	2.0	6.0	0.5	3.0	10.5	6.5	8.5	18.0	9.0	13.0
21	3.0	0.5	2.0	7.0	2.5	4.5	11.0	5.0	8.0	15.5	11.0	13.0
22	3.0	0.0	1.0	9.0	4.0	6.5	13.5	6.5	10.0	12.0	10.0	11.0
23	2.0	0.0	1.0	9.0	5.5	7.5	14.5	8.0	11.5	11.0	8.0	9.5
24	3.0	0.0	1.0	8.5	5.5	7.0	13.0	8.5	11.0	13.5	8.0	10.5
25	4.0	1.5	2.5	8.5	5.0	7.0	14.0	7.0	10.5	14.5	8.5	11.5
26	4.0	1.5	3.0	8.0	5.0	6.5	15.5	9.0	12.5	15.5	11.0	13.0
27	4.0	0.5	2.5	5.0	2.5	4.0	15.0	10.5	13.0	17.0	10.5	13.5
28	3.5	0.0	1.0	8.5	2.5	5.0	13.0	8.5	10.0	16.5	12.5	14.0
29	4.0	1.0	2.0	10.0	3.0	6.5	13.0	5.0	9.0	13.0	9.5	11.0
30	---	---	---	11.5	5.0	8.5	16.5	7.5	12.0	14.0	8.0	10.5
31	---	---	---	10.5	7.0	9.0	---	---	---	15.5	9.0	12.0
MONTH	4.0	0.0	1.0	11.5	0.0	3.5	16.5	3.5	9.5	18.0	4.5	12.0

12337800 NEVADA CREEK AT MOUTH, NEAR HELMVILLE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	9.0	14.0	24.0	18.0	21.0	21.5	15.0	18.5	19.5	16.0	17.5
2	20.5	11.0	15.5	24.5	18.0	21.5	20.0	16.0	18.5	17.5	14.5	15.5
3	21.0	13.0	17.5	22.5	18.0	20.5	21.0	16.0	18.0	14.5	11.5	12.5
4	23.5	15.0	19.5	21.0	17.0	19.0	21.0	15.0	18.0	14.0	11.5	12.5
5	21.5	17.0	19.5	21.0	16.5	18.5	21.0	16.0	18.5	14.0	11.5	13.0
6	19.5	14.0	17.0	21.5	17.0	19.0	20.5	15.0	18.0	15.0	10.5	13.0
7	18.5	11.0	14.5	19.0	15.0	17.0	18.0	15.0	16.5	16.0	12.5	14.5
8	15.5	11.0	12.0	18.0	12.0	14.5	18.5	11.5	15.0	15.5	12.0	14.5
9	14.5	9.5	12.0	20.5	11.0	16.0	20.0	14.5	17.0	15.0	12.5	14.0
10	14.0	12.5	13.5	20.0	16.0	18.5	20.0	14.0	17.0	15.0	11.0	13.0
11	13.0	11.0	12.0	21.0	15.5	18.0	20.0	13.5	17.0	15.0	11.0	13.0
12	16.5	11.0	13.5	22.0	15.0	18.5	20.5	14.0	17.0	14.0	12.0	13.0
13	17.5	13.5	15.0	23.0	17.0	19.5	20.0	14.0	17.0	14.0	11.5	12.5
14	17.5	12.5	15.0	24.5	15.5	20.0	22.0	16.5	19.0	13.5	11.5	12.5
15	15.0	11.5	13.5	25.0	17.0	21.0	21.0	18.0	19.5	12.5	11.0	11.5
16	19.0	9.5	14.0	26.0	17.0	21.5	21.0	18.0	19.5	12.5	10.5	11.5
17	18.0	13.5	15.5	26.0	17.0	21.5	23.0	18.5	20.5	11.5	10.0	11.0
18	15.5	12.0	14.0	23.0	19.0	21.0	21.0	19.0	20.0	11.0	10.5	10.5
19	15.5	12.0	13.5	24.0	19.5	22.0	21.0	17.0	18.5	10.5	8.0	9.5
20	17.5	12.0	15.0	23.0	19.5	21.5	21.5	17.5	19.0	9.5	7.5	8.5
21	20.5	14.0	17.0	23.0	17.5	20.0	21.0	18.0	19.5	9.0	7.5	8.0
22	23.0	12.0	17.0	22.0	15.0	18.5	19.5	17.5	18.5	9.0	7.5	8.0
23	23.5	14.0	18.5	22.5	15.5	19.0	17.5	13.5	15.5	11.5	9.0	10.0
24	23.5	15.5	19.0	24.0	17.0	20.5	13.5	11.5	12.5	13.0	9.5	11.5
25	23.0	16.0	19.0	23.0	15.0	19.0	14.5	12.5	13.0	14.0	10.5	12.0
26	22.0	16.0	18.5	22.0	15.5	19.0	14.5	12.0	13.5	14.0	11.0	12.5
27	20.0	16.0	18.0	21.0	15.5	18.0	15.5	12.5	14.0	14.5	11.0	13.0
28	23.0	14.5	18.5	22.0	14.5	18.0	15.0	12.5	13.5	14.0	11.0	13.0
29	24.0	16.0	19.5	20.5	15.5	18.5	16.0	12.0	14.0	13.5	10.5	12.5
30	24.5	17.5	20.5	21.5	15.0	18.5	18.0	13.0	15.5	13.0	10.5	12.0
31	---	---	---	20.5	15.5	18.5	19.0	14.5	17.0	---	---	---
MONTH	24.5	9.0	16.0	26.0	11.0	19.5	23.0	11.5	17.0	19.5	7.5	12.0

12337820 BLACKFOOT RIVER AT RAYMOND BRIDGE, NEAR OVANDO, MT

LOCATION.--Lat 46°56'00", long 113°06'50" (NAD 27) in SW¼SE¼SE¼ Sec. 28, T.14 N., R.12 W., Powell County, Hydrologic Unit 17010203, 0.2 mi downstream from Wales Creek, 0.8 mi upstream from Frazier Creek and 6.0 mi south of Ovando.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.-- December 2003 to August 2004.

GAGE.--None. Elevation at sampling site is 4,540 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
03...	0915	179	4.7	--	--	--	8.3	293	3.0	0.0	--
MAR											
11...	1400	404	26	--	--	--	8.4	268	9.0	4.0	120
APR											
13...	1315	298	6.0	--	--	--	8.5	280	13.5	10.0	150
MAY											
26...	1340	731	8.6	649	10.6	112	8.5	254	13.0	10.5	140
JUL											
14...	1000	374	<2.0	659	9.2	112	8.5	280	24.0	17.5	140
AUG											
23...	1600	299	4.7	651	10.9	130	8.6	289	13.5	16.0	160

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
03...	--	--	--	.027	E.001	.17	.008	.023	--	--	--
MAR											
11...	32.5	10.3	1.14	.080	.006	2.82	.648	.86	<1	5	E.04
APR											
13...	39.9	11.4	<.010	<.016	<.002	.17	.011	.031	<1	4	<.04
MAY											
26...	37.6	11.4	<.010	<.016	<.002	.11	.006	.029	E1	E2	<.04
JUL											
14...	37.3	11.7	<.010	<.016	<.002	.09	E.004	.013	4	E1	<.04
AUG											
23...	42.6	13.4	<.010	<.016	<.002	.15	E.003	.023	13	3	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC								
03...	--	--	--	--	--	95	11	5.3
MAR								
11...	5.0	890	.83	110	5	94	52	57
APR								
13...	1.3	250	.26	37	E1	93	14	11
MAY								
26...	2.3	280	.50	21	3	91	21	41
JUL								
14...	.7	70	.14	9	<2	94	4	4.0
AUG								
23...	1.2	160	.41	20	E1	89	10	8.1

E--Estimated.

12338300 NORTH FORK BLACKFOOT RIVER ABOVE DRY GULCH, NEAR OVANDO, MT

LOCATION.--Lat 46°58'48", 1ong 113°05'25" (NAD 27), in NW¼SW¼SW¼ sec.11, T.14 N., R.12 W., Powell County, Hydrologic Unit 17010203, on right bank 400 ft upstream from county road bridge, 0.9 mi upstream from Dry Gulch, 3.2 mi southeast of Ovando, and at river mile 2.5.

DRAINAGE AREA.--314 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,060 ft (NGVD 29).

REMARKS.--Water-discharge records good. Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964 reached a discharge of 11,800 ft^3/s, from slope-area measurement of peak flow, as determined at North Fork Blackfoot River near Ovando (station 12338000), 9 mi upstream. Flood of about May 22, 1948 reached a discharge of 4,380 ft^3/s, from slope-area measurement of peak flow at same site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	149	135	118	97	86	79	176	834	920	697	258	202
2	148	135	116	97	86	80	172	932	903	656	252	211
3	147	135	116	94	86	79	168	1,130	969	615	251	207
4	147	131	114	93	85	79	178	1,360	1,100	577	248	203
5	146	130	113	e92	85	80	206	1,670	1,310	581	243	199
6	144	127	116	e92	84	80	256	1,720	1,540	533	242	195
7	144	125	115	91	85	80	373	1,690	1,320	513	240	192
8	143	124	113	90	84	83	504	1,780	1,100	504	237	189
9	141	126	111	90	84	86	506	1,670	960	469	228	187
10	141	126	110	88	84	86	457	1,440	1,020	446	217	184
11	143	129	110	88	84	89	435	1,230	1,040	441	217	183
12	142	126	111	88	83	92	477	1,040	968	410	210	192
13	141	124	111	87	83	99	600	904	903	388	210	198
14	141	123	112	86	83	95	745	815	863	369	208	195
15	141	122	110	86	83	94	781	750	819	357	203	194
16	141	123	108	86	82	97	707	731	770	346	201	195
17	140	123	107	86	82	113	644	705	725	339	199	192
18	138	123	105	86	83	115	589	736	692	331	217	194
19	138	124	103	86	82	123	561	800	672	328	221	207
20	137	125	102	86	81	118	550	835	642	320	220	210
21	135	122	101	86	82	115	522	945	627	311	210	202
22	134	117	100	86	81	115	503	1,110	637	303	209	200
23	134	115	100	86	81	117	517	1,120	675	298	241	200
24	135	115	100	86	81	125	598	993	710	287	248	199
25	135	115	100	86	81	130	615	905	738	275	232	197
26	134	117	100	86	81	130	661	886	798	271	234	195
27	132	116	100	86	81	129	832	962	732	271	229	196
28	137	114	99	86	81	128	1,090	1,110	840	267	222	198
29	149	118	99	86	80	126	970	1,190	788	263	217	196
30	151	118	98	87	---	131	878	1,080	747	259	211	194
31	138	---	98	86	---	148	---	985	---	260	204	---
TOTAL	4,366	3,703	3,316	2,736	2,404	3,241	16,271	34,058	26,528	12,285	6,979	5,906
MEAN	141	123	107	88.3	82.9	105	542	1,099	884	396	225	197
MAX	151	135	118	97	86	148	1,090	1,780	1,540	697	258	211
MIN	132	114	98	86	80	79	168	705	627	259	199	183
AC-FT	8,660	7,340	6,580	5,430	4,770	6,430	32,270	67,550	52,620	24,370	13,840	11,710

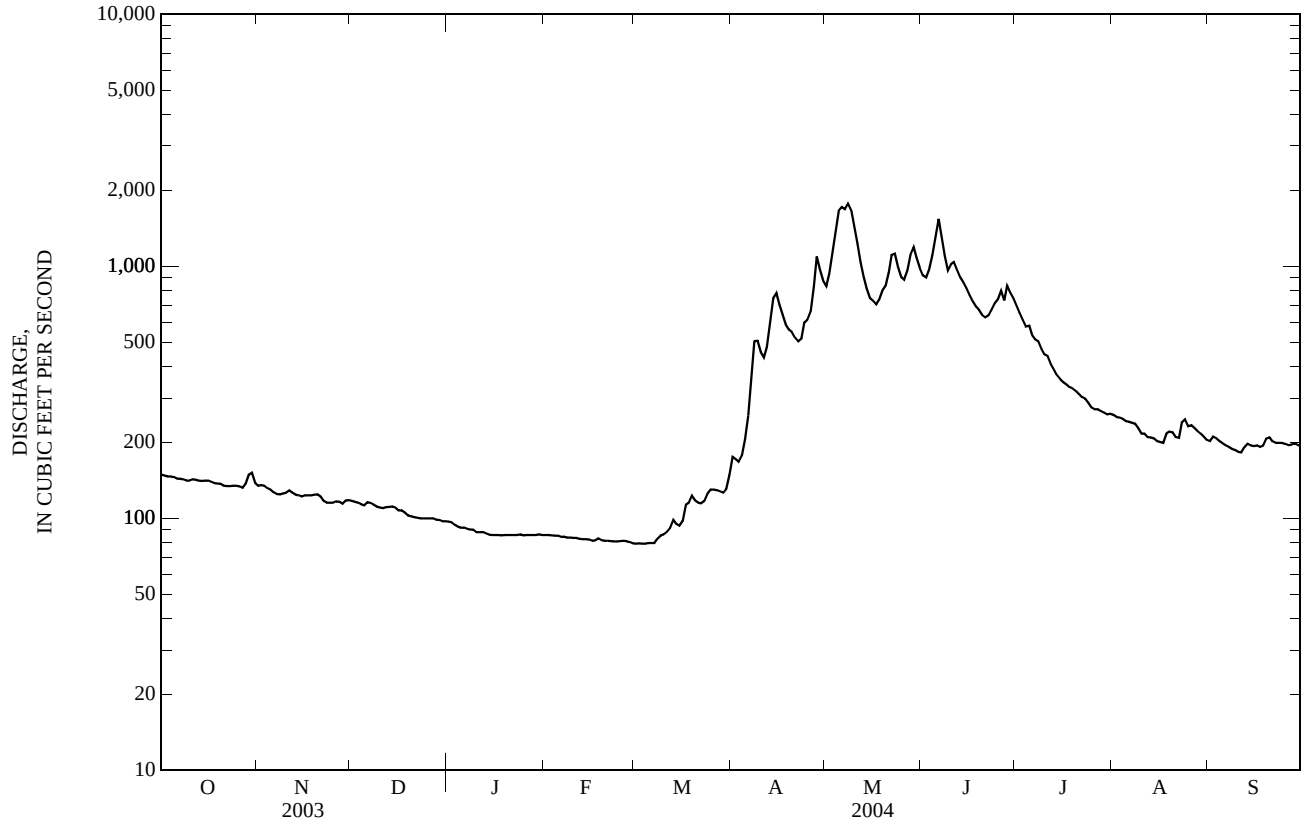
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	154	138	118	100	93.8	100	362	1,188	1,230	429	222	175
MAX	183	160	137	117	113	122	542	1,372	1,940	626	280	197
(WY)	(1998)	(1998)	(2000)	(2000)	(2000)	(2000)	(2004)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	119	114	99.5	88.3	82.3	77.5	121	801	766	265	167	128
(WY)	(2002)	(2002)	(2002)	(2004)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)

12338300 NORTH FORK BLACKFOOT RIVER ABOVE DRY GULCH, NEAR OVANDO, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	129,821		121,793			
ANNUAL MEAN	356		333		360	
HIGHEST ANNUAL MEAN					456	1999
LOWEST ANNUAL MEAN					242	2001
HIGHEST DAILY MEAN	3,370	May 30	1,780	May 8	3,870	May 26, 1999
LOWEST DAILY MEAN	86	Mar 8	79	Mar 1	72	Mar 18, 2001
ANNUAL SEVEN-DAY MINIMUM	87	Mar 5	80	Feb 29	73	Mar 5, 2001
MAXIMUM PEAK FLOW			1,860	May 8	b4,280	May 26, 1999
MAXIMUM PEAK STAGE			4.74	May 8	5.92	May 20, 2003
INSTANTANEOUS LOW FLOW			a75	Feb 18	c69	Mar 18, 2001
ANNUAL RUNOFF (AC-FT)	257,500		241,600		260,700	
10 PERCENT EXCEEDS	920		903		964	
50 PERCENT EXCEEDS	146		160		160	
90 PERCENT EXCEEDS	97		86		89	

a--Gage height, 2.36 ft.
b--Gage height, 5.75 ft.
c--Gage height, 2.35 ft.
e--Estimated.



12338300 NORTH FORK BLACKFOOT RIVER ABOVE DRY GULCH, NEAR OVANDO, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1995 to May 1997, April 2001 to September 2002, March 2003 to August 2004.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 2001 to September 2002.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum 17.5°C, Aug. 6 and 7, 2001; minimum, 0.0°C, several days in February and March 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
MAR											
11...	1230	86	<2.0	--	--	--	8.1	254	--	7.5	140
APR											
14...	1530	768	8.1	--	--	--	8.2	189	12.5	7.0	99
MAY											
26...	1220	888	<2.0	652	10.9	104	8.3	177	10.0	6.5	94
JUL											
14...	0830	374	<2.0	662	9.6	98	8.2	230	23.0	10.0	120
AUG											
23...	1700	248	<2.0	654	9.7	102	8.5	250	13.0	10.5	140

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
MAR											
11...	32.1	15.2	E.009	.132	<.002	.17	<.006	<.004	<2	E1	<.04
APR											
14...	25.3	8.67	<.010	.037	<.002	.14	<.006	.011	5	<2	<.04
MAY											
26...	24.8	7.78	<.010	.027	<.002	.16	<.006	E.003	7	<2	<.04
JUL											
14...	27.8	11.5	<.010	.059	<.002	.08	<.006	.004	2	<2	<.04
AUG											
23...	32.9	14.2	<.010	.079	E.001	.10	<.006	<.004	E1	E1	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR								
11...	.9	10	<.06	2	E2	70	1	.23
APR								
14...	.9	110	.17	6	<2	77	9	19
MAY								
26...	.8	30	E.04	1	<2	79	4	9.6
JUL								
14...	E.4	20	E.03	1	<2	78	1	1.0
AUG								
23...	E.5	30	.09	2	<2	95	1	.67

E--Estimated.

12338690 MONTURE CREEK NEAR OVANDO, MT

LOCATION.--Lat 47°02'44", long 113°11'23" (NAD 27) in NW¼SE¼NW¼ Sec. 24, T.15 N., R.13 W., Powell County, Hydrologic Unit 17010203, at bridge on State Highway 200, 3.3 mi northwest of Ovando and at river mile 3.6.

DRAINAGE AREA.--140 mi^2.

PERIOD OF RECORD.-- December 2003 to August 2004 .

GAGE.--None. Elevation at sampling site is 3,987 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
03...	1115	50	5.0	--	--	--	8.0	188	4.0	1.5	--
MAR											
18...	0900	90	3.7	--	--	--	8.3	220	7.0	2.0	110
APR											
14...	1400	613	5.0	658	--	--	7.8	85	13.5	6.0	41
MAY											
26...	1100	460	2.0	655	11.1	105	7.9	96	11.0	6.5	49
JUL											
13...	1530	136	<2.0	660	9.5	114	8.5	151	31.0	17.0	72
AUG											
24...	1540	74	<2.0	657	10.4	111	8.5	190	18.0	11.5	100

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
03...	--	--	--	.056	E.001	.10	<.006	E.004	--	--	--
MAR											
18...	27.0	10.8	.029	.181	.003	.55	.006	.037	2	<2	<.04
APR											
14...	10.1	3.90	<.010	.099	<.002	.28	E.003	.026	17	2	<.04
MAY											
26...	12.4	4.44	<.010	.026	E.001	.10	<.006	.010	11	<2	<.04
JUL											
13...	17.5	6.75	<.010	E.014	<.002	.09	<.006	.008	5	<2	<.04
AUG											
24...	24.8	10.3	<.010	.018	E.001	.12	<.006	.006	2	2	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC								
03...	--	--	--	--	--	82	1	.14
MAR								
18...	1.4	270	.09	48	<2	86	7	1.7
APR								
14...	1.2	290	.23	20	E1	73	31	51
MAY								
26...	.8	80	E.05	7	<2	67	7	8.7
JUL								
13...	E.4	50	<.06	8	<2	82	2	.73
AUG								
24...	E.5	40	<.06	5	<2	78	1	.20

E--Estimated.

12338700 BLACKFOOT RIVER AT SCOTTY BROWN BRIDGE, NEAR OVANDO, MT

LOCATION.--Lat 47°01'5544", long 113°141'22" (NAD 27) in SE¼NE¼NE¼ Sec. 33, T.15 N., R.13 W., Powell County, Hydrologic Unit 17010203, at county road bridge called Scotty Brown Bridge, 0.9 mi south of Highway 200, 5.0 mi west of Ovando.

DRAINAGE AREA.--1,428 mi^2.

PERIOD OF RECORD.-- September 1995 to May 1997, December 2003 to August 2004.

GAGE.--None. Elevation at sampling site is 3,910 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
03...	1400	380	13	--	--	--	8.8	273	4.0	1.0	--
MAR											
11...	1100	557	20	--	--	--	8.0	246	7.0	2.0	110
APR											
14...	1200	1,720	12	658	--	--	8.3	152	9.0	4.0	78
MAY											
25...	1715	2,090	2.9	659	10.8	111	8.5	170	17.0	10.0	93
JUL											
13...	1650	950	<2.0	661	9.5	119	8.6	221	34.0	19.0	120
AUG											
24...	1350	621	<2.0	659	10.2	110	8.4	261	14.5	12.0	150

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
03...	--	--	--	.023	E.001	.07	<.006	E.004	--	--	--
MAR											
11...	29.0	10.1	.895	.109	.006	2.43	.513	.70	<1	3	E.03
APR											
14...	19.9	6.78	<.010	.062	E.001	.26	<.006	.031	9	<2	<.04
MAY											
25...	24.6	7.55	<.010	E.010	E.001	.08	<.006	.012	7	<2	<.04
JUL											
13...	30.1	11.2	<.010	<.016	<.002	.08	<.006	.008	4	E1	<.04
AUG											
24...	36.9	13.6	<.010	E.014	E.001	.12	<.006	.008	3	2	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC								
03...	--	--	--	--	--	83	2	2.1
MAR								
11...	3.2	860	.80	87	5	95	53	80
APR								
14...	2.1	290	.45	29	E1	80	29	135
MAY								
25...	4.3	130	1.46	10	E1	79	9	51
JUL								
13...	.7	40	.08	6	<2	78	4	10
AUG								
24...	.8	70	.15	8	<2	82	4	6.7

E--Estimated.

12339500 CLEARWATER RIVER AT CLEARWATER, MT

LOCATION.--Lat 46°58'00", long 113°22'40" (NAD 27) in NE¼SW¼ Sec. 16, T.14 N., R.14 W., Missoula County, Hydrologic Unit 17010203, on left bank 400 ft upstream from mouth and 2.5 mi south of Clearwater Post Office.

DRAINAGE AREA.--391 mi^2.

PERIOD OF RECORD.-- December 2003 to August 2004.

GAGE.--None. Elevation at sampling site is 3,760 ft (NGVD 29).

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
DEC											
03...	1230	103	3.2	--	--	--	8.5	155	4.0	1.0	--
MAR											
11...	0900	81	<2.0	--	--	--	7.6	155	4.5	2.5	83
APR											
14...	0930	835	<2.0	660	--	--	7.7	121	7.0	6.0	60
MAY											
25...	1500	637	<2.0	663	9.5	104	8.1	113	16.0	13.0	58
JUL											
13...	1830	132	<2.0	664	8.3	111	8.6	145	36.0	22.5	67
AUG											
24...	1200	74	<2.0	663	9.7	112	8.3	175	13.5	15.5	90

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)
DEC											
03...	--	--	--	.017	<.002	.15	<.006	.007	--	--	--
MAR											
11...	21.9	6.86	E.005	.039	E.001	.16	<.006	.007	<2	<2	<.04
APR											
14...	16.0	4.85	E.005	E.012	E.001	.19	<.006	.010	5	<2	<.04
MAY											
25...	16.1	4.39	<.010	E.008	E.001	.12	<.006	.011	3	<2	<.04
JUL											
13...	18.4	5.18	<.010	E.010	<.002	.16	E.003	.011	2	<2	<.04
AUG											
24...	24.7	6.96	<.010	<.016	E.001	.14	<.006	.010	E1	E1	<.04

Date	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
DEC								
03...	--	--	--	--	--	60	1	.28
MAR								
11...	E.4	100	<.06	6	<2	72	1	.22
APR								
14...	1.5	50	.14	11	<2	80	2	4.5
MAY								
25...	.9	50	<.06	7	<2	79	2	3.4
JUL								
13...	.8	30	E.04	11	<2	56	2	.71
AUG								
24...	E.5	20	.06	8	<2	77	1	.20

E--Estimated.

12340000 BLACKFOOT RIVER NEAR BONNER, MT

LOCATION.--Lat 46°53'59", long 113°45'20" (NAD 27), in SE¼SE¼NW¼ sec.9, T.13 N., R.17 W., Missoula County, Hydrologic Unit 17010203, on right bank 5.0 mi downstream from Union Creek, 5.6 mi northeast of Bonner, and at river mile 7.9.

DRAINAGE AREA.--2,290 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to November 1898, March 1899 to September 1901, May 1903 to January 1905, March to October 1905, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "at Bonner" 1898-99 and as Big Blackfoot near Bonner 1903-05.

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,344.76 ft (NGVD 29). July 7, 1898 to June 30, 1901, and May 15, 1903, to Oct. 31, 1905, nonrecording gage at site 7 mi downstream at different elevation. Oct. 4, 1939, to Sept. 30, 1955, nonrecording gage at site 1.3 mi downstream at elevation 21.82 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow slightly regulated by Nevada Creek Reservoir (station number 12336500). Diversions for irrigation of about 20,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	461	e450	518	e420	e470	441	1,660	2,930	3,400	2,050	676	646
2	462	e500	533	e450	e450	440	1,710	2,980	3,250	1,930	661	645
3	461	510	529	e420	e430	438	1,680	3,240	3,200	1,810	651	638
4	460	495	511	e370	e450	438	1,680	3,640	3,310	1,720	654	639
5	461	e470	506	e330	e440	435	1,790	4,060	3,620	1,710	649	628
6	460	e450	520	e300	e420	435	2,010	4,350	4,040	1,640	648	624
7	456	e470	524	e350	e440	424	2,340	4,400	4,090	1,540	636	616
8	450	e500	515	e420	e460	463	2,620	4,480	3,700	1,520	636	604
9	446	e530	494	e470	e450	603	2,790	4,500	3,400	1,470	636	597
10	445	590	481	e480	444	862	2,720	4,280	3,350	1,390	604	593
11	450	612	508	e480	428	997	2,640	4,050	3,470	1,370	575	586
12	472	580	499	e470	376	873	2,590	3,680	3,360	1,310	570	613
13	468	549	497	e470	356	903	2,690	3,290	3,160	1,230	555	658
14	471	538	504	e460	365	867	2,930	2,990	3,000	1,150	561	677
15	473	522	494	e460	422	817	3,160	2,750	2,840	1,100	546	678
16	486	519	473	e480	459	829	3,120	2,580	2,690	1,050	531	668
17	482	535	487	e470	438	868	2,970	2,470	2,540	1,010	529	650
18	476	525	446	e470	447	958	2,780	2,410	2,400	976	568	663
19	469	527	e400	e480	460	1,130	2,600	2,560	2,350	969	591	682
20	463	550	e430	e500	458	1,100	2,460	2,650	2,290	957	578	732
21	459	548	e480	e490	454	1,050	2,350	2,770	2,160	930	576	763
22	456	488	e450	e480	437	1,070	2,230	3,200	2,070	894	601	762
23	454	453	e430	e500	431	1,130	2,150	3,610	2,060	860	670	741
24	448	509	e450	e500	440	1,280	2,200	3,560	2,100	827	744	730
25	449	528	e470	e480	451	1,370	2,250	3,340	2,140	797	753	725
26	448	527	e450	e480	457	1,450	2,300	3,180	2,230	787	741	725
27	446	514	e430	e500	460	1,470	2,490	3,200	2,260	759	740	714
28	465	544	e400	e520	456	1,450	2,980	3,410	2,300	746	729	707
29	544	530	e380	e520	444	1,410	3,180	3,650	2,210	721	709	699
30	536	534	e380	e500	---	1,410	3,060	3,690	2,140	702	689	691
31	495	---	e400	e480	---	1,490	---	3,570	---	684	663	---
TOTAL	14,472	15,597	14,589	14,200	12,693	28,901	74,130	105,470	85,130	36,609	19,670	20,094
MEAN	467	520	471	458	438	932	2,471	3,402	2,838	1,181	635	670
MAX	544	612	533	520	470	1,490	3,180	4,500	4,090	2,050	753	763
MIN	445	450	380	300	356	424	1,660	2,410	2,060	684	529	586
AC-FT	28,710	30,940	28,940	28,170	25,180	57,330	147,000	209,200	168,900	72,610	39,020	39,860
CFSM	0.20	0.23	0.21	0.20	0.19	0.41	1.08	1.49	1.24	0.52	0.28	0.29
IN.	0.24	0.25	0.24	0.23	0.21	0.47	1.20	1.71	1.38	0.59	0.32	0.33

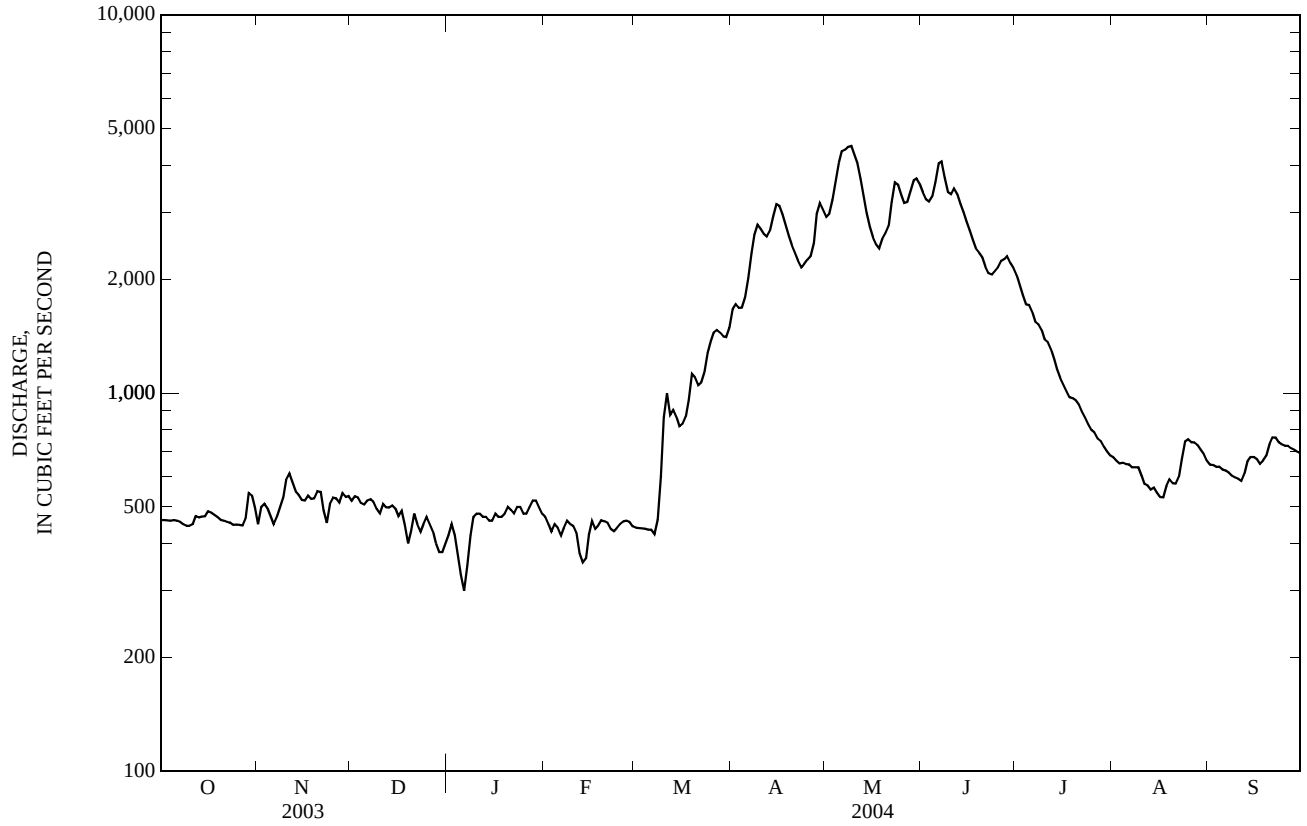
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)

MEAN	654	650	606	553	598	782	2,058	4,883	4,901	1,854	835	672
MAX	1,547	1,480	1,555	1,069	1,668	2,351	4,727	9,802	13,610	6,557	1,921	1,250
(WY)	(1960)	(1960)	(1996)	(1976)	(1971)	(1986)	(1943)	(1997)	(1899)	(1899)	(1899)	(1899)
MIN	370	369	332	348	359	435	463	1,096	1,158	533	365	363
(WY)	(1988)	(1988)	(1988)	(1988)	(1993)	(1988)	(1905)	(1941)	(1987)	(1977)	(1988)	(1988)

12340000 BLACKFOOT RIVER NEAR BONNER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004	
ANNUAL TOTAL	483,518		441,555			
ANNUAL MEAN	1,325		1,206		1,572	
HIGHEST ANNUAL MEAN					2,480	1976
LOWEST ANNUAL MEAN					558	1941
HIGHEST DAILY MEAN	7,830	May 30	4,500	May 9	18,000	Jun 10, 1964
LOWEST DAILY MEAN	300	Jan 10	300	Jan 6	200	Jan 4, 1950
ANNUAL SEVEN-DAY MINIMUM	360	Jan 7	377	Jan 1	239	Dec 21, 1983
MAXIMUM PEAK FLOW			4,590	May 8	b19,200	Jun 10, 1964
MAXIMUM PEAK STAGE			5.56	May 8	c16.00	Feb 9, 1996
INSTANTANEOUS LOW FLOW			a280	Feb 13	d156	Feb 2, 1989
ANNUAL RUNOFF (AC-FT)	959,100		875,800		1,139,000	
ANNUAL RUNOFF (CFSM)	0.58		0.53		0.69	
ANNUAL RUNOFF (INCHES)	7.85		7.17		9.33	
10 PERCENT EXCEEDS	3,550		3,130		4,090	
50 PERCENT EXCEEDS	544		636		731	
90 PERCENT EXCEEDS	442		444		450	

*--During periods of operation (1900-01, 1904, 1940 to current year).
a--Gage height, 1.55 ft, but may have been lower during period of ice effect.
b--Gage height, 10.89 ft.
c--Backwater from ice.
d--Gage height, 1.20 ft, but may have been lower during water year 1989 period of ice effect.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-59, 1985 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1955 to September 1959, October 1999 to September 2003.
SUSPENDED-SEDIMENT DISCHARGE: July 1986 to April 1987, June 1988 to September 1995.

REMARKS.--Daily water temperature record good. Missing water temperature data from May 9-12 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.5°C, July 19, 2003; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 335 mg/L, May 19, 1991; minimum daily mean, 1 mg/L on many days.
SEDIMENT LOAD: Maximum daily, 8,100 tons, May 19, 1991; minimum daily, 0.54 ton, Feb. 8, 1995.

12340000 BLACKFOOT RIVER NEAR BONNER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
NOV													
18...	1445	523	<2.0	--	--	--	8.5	260	3.0	3.0	130	34.0	12.1
APR													
21...	1340	2,350	6.0	--	--	--	8.2	175	12.5	7.0	86	22.9	7.04
MAY													
18...	1320	2,400	2.7	672	10.1	103	8.5	183	18.5	11.0	92	24.4	7.54
JUN													
03...	0720	3,150	3.7	680	9.0	93	8.2	174	8.5	12.0	88	23.6	7.14
JUL													
20...	0720	957	2.4	677	7.2	86	8.4	239	16.0	17.5	120	30.5	10.8
AUG													
23...	1445	694	<2.0	671	8.9	100	8.7	246	13.0	14.5	130	31.1	11.7

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)
NOV													
18...	--	E.012	<.002	.10	<.006	.004	--	1.0	<2	<.04	<.04	.6	.8
APR													
21...	<.010	E.008	E.001	.15	<.006	.014	5	1.1	<2	<.04	<.04	.7	1.0
MAY													
18...	<.010	<.016	E.001	.13	<.006	.010	--	.8	<2	<.04	<.04	.6	.7
JUN													
03...	<.010	<.016	E.001	.08	<.006	.019	4	.8	<2	<.04	<.04	.6	1.1
JUL													
20...	<.010	<.016	<.002	.11	<.006	.009	--	1.2	E2	<.04	E.02	.7	1.0
AUG													
23...	<.010	E.008	<.002	.13	<.006	.008	<1	1.3	E1	<.04	<.04	.4	E.3

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV											
18...	<6	30	<.08	.07	.8	2	1.5	E2	95	2	2.8
APR											
21...	10	90	E.05	.08	2.4	8	E.6	<2	85	6	38
MAY											
18...	7	70	<.08	.10	1.7	7	E.3	<2	81	5	32
JUN											
03...	8	140	<.08	.18	1.4	12	.8	E1	86	10	85
JUL											
20...	E4	70	<.08	.13	1.4	8	E.3	E1	75	4	10
AUG											
23...	<6	40	<.08	E.05	1.4	5	.7	<2	72	2	3.7

E--Estimated.

12340000 BLACKFOOT RIVER NEAR BONNER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.5	9.0	10.5	1.0	0.5	0.5	2.5	1.5	2.0	0.5	0.0	0.5
2	11.5	9.0	10.5	0.5	0.5	0.5	3.0	2.0	2.5	0.5	0.0	0.5
3	11.5	9.0	10.5	1.0	0.5	0.5	3.5	2.5	3.0	1.0	0.5	0.5
4	11.0	8.5	10.0	1.0	0.5	0.5	2.5	0.5	1.0	1.0	1.0	1.0
5	11.5	8.5	10.0	0.5	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5
6	12.0	9.5	11.0	1.0	0.0	0.5	1.5	1.0	1.5	1.0	0.0	0.5
7	11.5	10.0	10.5	1.0	0.5	0.5	2.0	1.5	2.0	0.0	0.0	0.0
8	11.5	10.0	10.5	1.0	0.5	0.5	1.5	1.0	1.5	0.5	0.0	0.0
9	11.5	10.0	10.5	0.5	0.0	0.5	1.5	0.0	0.5	0.0	0.0	0.0
10	10.0	8.0	8.5	0.5	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0
11	8.5	6.5	7.5	0.5	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0
12	8.5	7.0	8.0	1.0	0.0	0.5	1.0	0.5	0.5	0.0	0.0	0.0
13	8.5	7.5	8.0	1.0	0.5	0.5	1.0	0.5	0.5	0.0	0.0	0.0
14	8.0	6.5	7.5	1.5	0.5	1.0	1.0	0.5	1.0	0.5	0.0	0.0
15	7.5	6.5	7.0	1.5	1.0	1.5	1.0	0.5	1.0	0.5	0.0	0.0
16	7.5	6.5	7.0	2.0	1.0	1.5	1.0	0.0	0.5	0.5	0.0	0.0
17	9.5	7.5	8.0	2.5	1.5	2.0	1.0	0.0	0.5	0.5	0.0	0.0
18	9.0	7.0	8.0	3.0	2.5	2.5	0.5	0.0	0.5	0.0	0.0	0.0
19	9.0	7.0	8.0	4.0	2.5	3.0	0.5	0.5	0.5	0.0	0.0	0.0
20	9.5	8.0	8.5	3.0	2.0	2.5	0.5	0.0	0.5	0.0	0.0	0.0
21	11.5	9.0	10.0	2.0	0.5	1.5	0.5	0.0	0.5	0.0	0.0	0.0
22	10.5	9.0	10.0	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.0
23	10.0	8.5	9.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	0.0	0.0
24	8.5	6.5	7.5	0.5	0.5	0.5	0.5	0.0	0.5	0.0	0.0	0.0
25	6.5	4.5	5.5	0.5	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0
26	6.5	4.5	5.5	0.5	0.0	0.5	0.5	0.0	0.5	0.0	0.0	0.0
27	7.5	6.5	7.0	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0
28	8.5	7.5	8.0	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0
29	8.5	5.0	6.5	1.5	0.5	1.0	0.5	0.0	0.5	0.5	0.0	0.0
30	5.0	2.0	3.5	2.0	1.0	1.5	0.5	0.0	0.5	0.5	0.0	0.0
31	2.0	0.5	1.0	---	---	---	0.5	0.0	0.5	0.5	0.0	0.0
MONTH	12.0	0.5	8.0	4.0	0.0	1.0	3.5	0.0	1.0	1.0	0.0	0.0
	FEBRUARY			MARCH			APRIL			MAY		
1	0.5	0.0	0.0	3.5	2.0	2.5	7.0	5.5	6.5	11.0	9.0	10.0
2	0.5	0.0	0.0	3.5	2.0	2.5	7.0	5.0	6.0	12.0	10.0	11.0
3	0.5	0.0	0.0	3.0	2.0	2.5	8.0	5.5	6.5	12.0	10.5	11.5
4	0.5	0.0	0.0	3.0	2.0	2.5	9.5	7.0	8.0	11.0	10.0	10.5
5	0.5	0.0	0.0	3.0	2.0	2.5	8.5	6.5	7.5	12.0	10.5	11.0
6	0.5	0.0	0.0	3.0	1.5	2.0	9.5	7.5	8.5	11.0	10.0	10.5
7	0.5	0.0	0.0	3.5	1.5	2.5	9.5	7.0	8.0	11.5	10.0	11.0
8	0.5	0.0	0.5	6.0	3.5	4.5	8.5	7.5	8.0	11.5	10.0	11.0
9	1.0	0.5	0.5	5.0	3.5	4.5	8.0	6.5	7.0	11.0	9.5	10.0
10	1.0	0.5	1.0	5.0	3.0	4.0	8.0	6.0	7.0	10.0	8.0	9.0
11	1.5	0.5	1.0	4.5	2.5	3.5	9.0	6.0	7.5	8.0	7.5	7.5
12	1.0	0.0	0.5	5.0	2.5	4.0	10.0	7.0	8.5	7.5	6.5	7.0
13	0.5	0.0	0.5	5.0	3.5	4.5	9.5	8.0	9.0	8.0	6.5	7.0
14	0.5	0.0	0.5	4.5	3.0	4.0	9.0	8.0	9.0	9.5	7.5	8.5
15	0.5	0.0	0.5	6.0	3.0	4.5	8.0	7.0	7.5	10.5	8.5	9.5
16	0.5	0.0	0.5	5.5	4.5	5.0	8.0	6.0	7.0	10.0	9.5	10.0
17	1.0	0.0	0.5	5.5	4.5	5.0	8.0	7.0	7.5	11.0	9.0	10.0
18	2.0	0.5	1.0	7.0	4.5	6.0	8.5	6.5	7.5	11.0	9.0	10.5
19	2.0	1.0	1.5	6.5	5.0	5.5	9.0	7.0	8.0	10.5	9.0	9.5
20	1.5	1.0	1.5	5.5	3.0	4.5	8.5	7.5	8.0	12.0	9.5	10.5
21	2.0	1.0	1.5	7.0	4.0	5.5	8.5	6.5	7.5	12.0	11.0	11.5
22	1.5	0.0	0.5	7.5	5.0	6.5	10.0	7.0	8.0	11.0	9.5	10.5
23	1.5	0.0	0.5	8.5	5.5	7.0	10.5	7.5	9.0	9.5	8.0	9.0
24	1.5	0.0	1.0	7.5	6.0	6.5	10.5	9.0	9.5	9.5	7.5	8.5
25	2.5	1.0	1.5	7.0	5.5	6.0	10.0	7.5	8.5	10.5	8.0	9.5
26	2.5	1.5	2.0	6.5	6.0	6.0	11.5	8.0	9.5	10.5	9.5	10.0
27	3.0	1.0	2.0	6.0	4.5	5.0	11.5	9.5	10.5	12.0	9.5	10.5
28	2.0	0.5	1.5	7.0	4.0	5.5	10.5	7.0	9.0	11.5	10.5	11.0
29	3.0	1.5	2.0	7.5	4.5	6.0	8.5	6.0	7.0	10.5	9.5	10.0
30	---	---	---	8.5	5.5	7.0	10.5	8.0	9.0	10.5	8.5	9.5
31	---	---	---	8.0	6.5	7.5	---	---	---	11.0	9.0	10.0
MONTH	3.0	0.0	1.0	8.5	1.5	4.5	11.5	5.0	8.0	12.0	6.5	10.0

12340000 BLACKFOOT RIVER NEAR BONNER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

12340500 CLARK FORK ABOVE MISSOULA, MT

LOCATION.--Lat 46°52'38", long 113°55'53" (NAD 27), in NW¼NW¼NW¼ sec.19, T.13 N., R.18 W., Missoula County, Hydrologic Unit 17010204, on right bank 0.2 mi downstream from county road bridge, 2.8 mi east of Missoula, 2.8 mi downstream from Milltown Dam, 3.0 mi downstream from Blackfoot River, and at river mile 361.6.

DRAINAGE AREA.--5,999 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1929 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1042: 1936. WSP 1152: 1942. WSP 1246: 1929-30, 1935, drainage area. WSP 1316: 1932-33.

GAGE.--Water-stage recorder. Elevation of gage is 3,198.30 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to May 27, 1929, nonrecording gage.

REMARKS.--Water-discharge records good. Diurnal fluctuation caused by powerplant at Milltown. Diversions for irrigation of about 120,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1908 reached a discharge of 48,000 ft^3/s, provided by The Montana Power Company.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	994	1,070	1,270	e850	1,140	1,150	2,560	3,940	5,350	3,010	1,180	1,190
2	1,010	1,140	1,270	e950	1,080	1,130	2,690	3,940	5,080	2,860	1,150	1,190
3	1,020	1,250	1,290	e1,000	1,040	1,140	2,650	4,240	4,900	2,660	1,130	1,220
4	1,030	1,190	1,290	e850	1,050	1,120	2,610	4,780	4,950	2,570	1,140	1,170
5	1,060	1,160	1,250	e700	1,090	1,080	2,770	5,260	5,290	2,580	1,150	1,190
6	1,060	1,060	1,250	e600	1,050	1,140	3,020	5,710	5,820	2,510	1,150	1,160
7	1,070	1,100	1,280	e500	1,070	1,100	3,360	5,780	6,050	2,400	1,160	1,140
8	1,050	1,150	1,270	e700	1,070	1,180	3,720	5,850	5,580	2,360	1,130	1,130
9	1,040	1,280	1,260	e800	1,090	2,100	4,000	5,910	5,160	2,200	1,110	1,130
10	1,040	1,390	1,170	e900	1,070	2,360	3,920	5,630	5,130	2,160	1,070	1,140
11	1,060	1,430	1,180	e1,000	1,060	2,520	3,740	5,400	5,730	2,140	1,010	1,080
12	1,100	1,370	1,240	e1,100	1,010	2,000	3,660	4,940	5,710	2,100	993	1,130
13	1,130	1,330	1,230	e1,050	938	2,020	3,710	4,480	5,280	1,990	958	1,310
14	1,120	1,260	1,220	e1,050	818	2,070	4,060	4,070	4,880	1,880	917	1,530
15	1,150	1,220	1,240	e1,050	1,000	1,810	4,310	3,780	4,550	1,830	867	1,470
16	1,190	1,220	1,170	e1,100	1,110	1,780	4,270	3,530	4,270	1,790	826	1,430
17	1,180	1,270	1,120	e1,100	1,080	1,780	4,080	3,520	3,960	1,790	832	1,370
18	1,170	1,310	1,140	e1,100	1,110	1,890	3,830	3,450	3,750	1,720	830	1,360
19	1,130	1,260	e1,000	e1,100	1,160	2,160	3,650	3,740	3,710	1,690	864	1,420
20	1,130	1,280	e950	e1,100	1,200	2,190	3,440	3,950	3,680	1,690	1,020	1,660
21	1,120	1,330	e1,000	e1,150	1,170	2,000	3,360	4,010	3,410	1,700	987	1,790
22	1,100	1,270	e1,200	e1,150	1,130	1,900	3,230	4,450	3,270	1,600	960	1,700
23	1,110	1,110	e1,100	e1,150	1,100	2,030	2,990	5,110	3,180	1,530	1,130	1,660
24	1,110	1,160	e1,000	e1,150	1,100	2,250	3,020	5,240	3,040	1,470	1,270	e1,660
25	1,110	1,240	e1,100	1,140	1,150	2,420	3,110	4,930	3,100	1,430	1,350	e1,650
26	1,110	1,230	1,220	1,090	1,220	2,460	3,130	4,700	3,130	1,390	1,350	e1,600
27	1,130	1,230	1,130	1,060	1,230	2,460	3,310	4,750	3,170	1,360	1,380	e1,570
28	1,150	1,190	1,020	1,070	1,200	2,400	3,890	5,080	3,370	1,310	1,370	e1,550
29	1,320	1,220	e950	1,140	1,160	2,330	4,360	5,600	3,270	1,260	1,330	1,550
30	1,390	1,350	e900	1,200	---	2,260	4,210	5,750	3,200	1,210	1,280	1,540
31	1,270	---	e800	1,190	---	2,280	---	5,560	---	1,190	1,220	---
TOTAL	34,654	37,070	35,510	31,090	31,696	58,510	104,660	147,080	130,970	59,380	34,114	41,690
MEAN	1,118	1,236	1,145	1,003	1,093	1,887	3,489	4,745	4,366	1,915	1,100	1,390
MAX	1,390	1,430	1,290	1,200	1,230	2,520	4,360	5,910	6,050	3,010	1,380	1,790
MIN	994	1,060	800	500	818	1,080	2,560	3,450	3,040	1,190	826	1,080
AC-FT	68,740	73,530	70,430	61,670	62,870	116,100	207,600	291,700	259,800	117,800	67,670	82,690

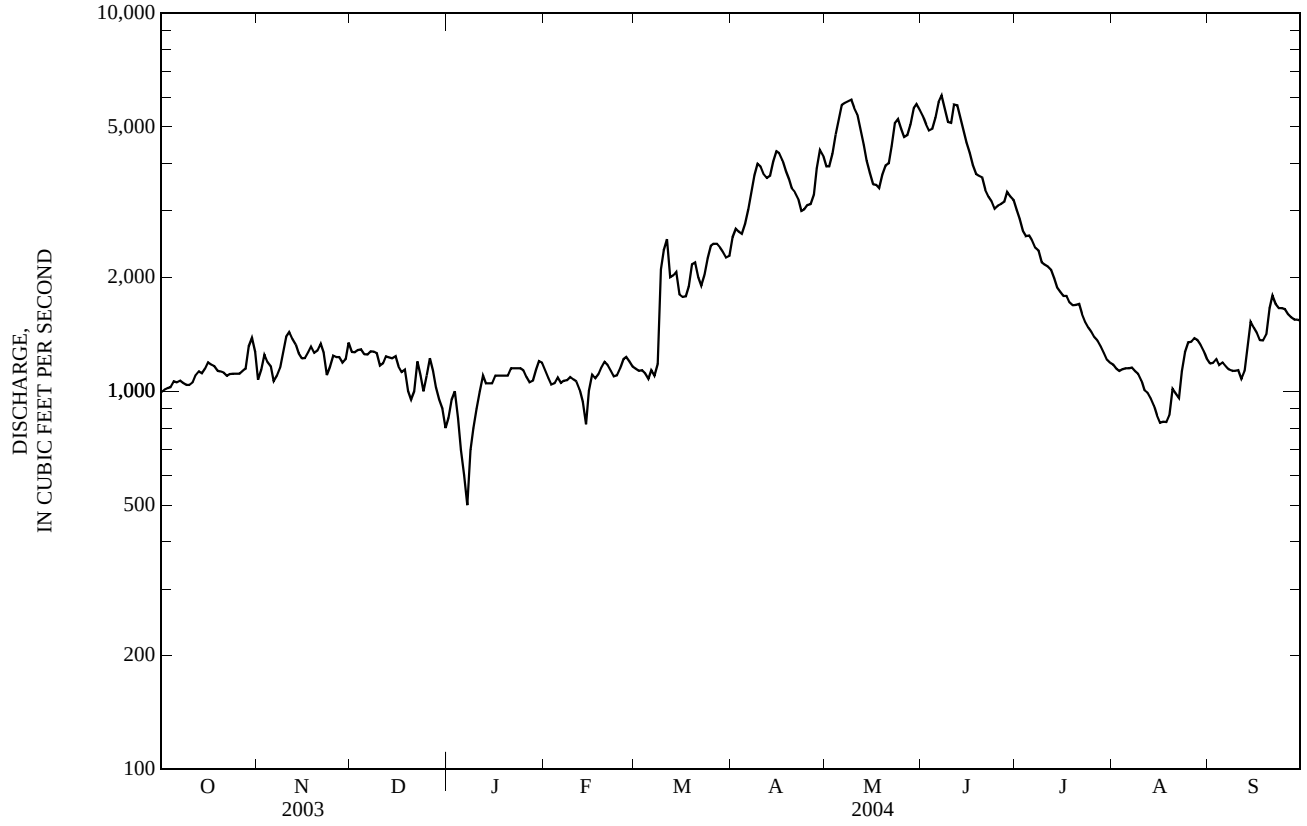
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)

MEAN	1,553	1,551	1,412	1,323	1,469	1,866	3,719	7,846	8,215	3,143	1,482	1,399
MAX	2,987	2,852	3,323	2,546	3,431	4,124	10,080	17,240	19,270	8,759	3,448	2,874
(WY)	(1960)	(1960)	(1976)	(1976)	(1996)	(1986)	(1934)	(1976)	(1975)	(1975)	(1975)	(1965)
MIN	854	882	874	606	674	1,037	1,191	2,005	2,122	868	627	653
(WY)	(1936)	(1938)	(1945)	(1937)	(1933)	(1937)	(1941)	(1941)	(1992)	(1931)	(1988)	(1937)

12340500 CLARK FORK ABOVE MISSOULA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004	
ANNUAL TOTAL	935,747		746,424			
ANNUAL MEAN	2,564		2,039		2,922	
HIGHEST ANNUAL MEAN					5,071	1976
LOWEST ANNUAL MEAN					1,344	1941
HIGHEST DAILY MEAN	15,100	May 31	6,050	Jun 7	30,800	Jun 21, 1975
LOWEST DAILY MEAN	677	Feb 25	500	Jan 7	340	Sep 27, 1937
ANNUAL SEVEN-DAY MINIMUM	851	Jan 18	721	Jan 4	446	Jan 7, 1937
MAXIMUM PEAK FLOW			a7,290	Jun 13	32,300	Jun 21, 1975
MAXIMUM PEAK STAGE			6.18	Jun 13	13.75	Jun 21, 1975
INSTANTANEOUS LOW FLOW			b453	Mar 5	c115	Oct 25, 1943
ANNUAL RUNOFF (AC-FT)	1,856,000		1,481,000		2,117,000	
10 PERCENT EXCEEDS	6,050		4,320		6,850	
50 PERCENT EXCEEDS	1,240		1,270		1,650	
90 PERCENT EXCEEDS	982		1,020		1,000	

a--Result of regulation.
b--Gage height, 1.77 ft, result of regulation.
c--Gage height, 0.64 ft.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-71, 1977-83, 1986 to current year. Water years 1969-71 samples collected 3.4 miles downstream from gaging station.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1977 to September 1983, February 2002 to September 2002.

SUSPENDED-SEDIMENT DISCHARGE: July 1986 to April 1987, June 1988 to January 1996, March 1996 to March 2003, August 2003 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.5°C, Aug. 7, 8, 1983, July 13-15, 2002; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 592 mg/L, May 18, 1997; minimum daily mean, 1 mg/L, on many days from 1990 to 1994, and 1999 to 2001.
SEDIMENT LOAD: Maximum daily, 42,200 tons, May 18, 1997; minimum daily, 1.6 tons, Dec. 27, 1992.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 49 mg/L, Mar. 10; minimum daily mean, 3 mg/L, on several days in November, February, and September.
SEDIMENT LOAD: Maximum daily, 437 tons, May 7; minimum daily, 8.1 tons, Feb. 15.

12340500 CLARK FORK ABOVE MISSOULA, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd lab, Hach 2100AN NTU (99872)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
NOV										
18...	1600	1,360	--	8.6	338	11.0	2.5	160	44.6	12.8
MAR										
17...	1525	1,800	--	8.4	317	12.5	5.5	150	41.9	11.4
APR										
21...	1535	3,340	--	8.4	219	15.0	7.5	100	28.2	7.75
MAY										
18...	1505	3,360	--	8.3	196	12.0	10.5	94	25.7	7.31
JUN										
03...	0850	4,920	5.0	8.2	195	16.0	12.5	110	29.2	7.91
14...	0715	4,980	3.4	8.2	205	11.0	12.5	96	26.8	7.13
JUL										
20...	0850	1,660	8.0	8.3	263	20.0	19.5	130	32.9	10.5
AUG										
23...	1635	1,220	<2.0	8.4	282	14.5	16.0	140	36.2	11.8

Date	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)
NOV										
18...	3.7	4	<.04	.04	2.8	5.8	E4	100	<.08	.53
MAR										
17...	3.8	4	<.04	.07	4.2	9.8	19	230	.09	1.16
APR										
21...	3.2	3	<.04	E.04	2.1	5.7	11	130	E.05	.55
MAY										
18...	1.6	E2	<.04	E.02	1.2	2.6	12	90	E.05	.32
JUN										
03...	2.2	2	<.04	.05	1.7	5.8	16	200	E.04	.82
14...	2.7	3	<.04	.06	1.5	6.6	12	230	E.05	1.11
JUL										
20...	3.5	5	<.04	.14	1.5	13.9	16	400	.10	2.33
AUG										
23...	3.2	4	<.04	.06	1.4	4.5	E3	140	<.08	.64

Date	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV							
18...	9.7	17	2.3	8	93	4	15
MAR							
17...	31.6	48	7.7	15	93	12	58
APR							
21...	17.1	22	1.0	6	93	7	63
MAY							
18...	10.8	16	1.8	6	89	5	45
JUN							
03...	14.2	27	2.1	9	87	14	186
14...	15.0	36	1.9	11	92	13	175
JUL							
20...	37.7	67	.8	25	91	24	108
AUG							
23...	11.9	25	1.0	9	82	9	30

E--Estimated.

12340500 CLARK FORK ABOVE MISSOULA, MT—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7	19	5	14	5	17	6	14	4	12	5	16
2	7	19	5	15	5	17	6	15	4	12	5	15
3	7	19	4	14	7	24	6	16	4	11	4	12
4	7	19	4	13	7	24	6	14	4	11	5	15
5	7	20	4	13	6	20	6	11	4	12	10	29
6	7	20	4	11	5	17	7	11	4	11	4	12
7	6	17	4	12	6	21	7	9.4	4	12	6	18
8	6	17	5	16	7	24	7	13	4	12	9	29
9	6	17	6	21	7	24	7	15	4	12	46	261
10	6	17	6	23	6	19	6	15	4	12	49	312
11	6	17	7	27	7	22	6	16	4	11	38	259
12	6	18	7	26	8	27	6	18	4	11	31	167
13	6	18	7	25	8	27	6	17	4	10	23	125
14	7	21	6	20	10	33	5	14	4	8.8	16	89
15	7	22	4	13	10	33	5	14	3	8.1	12	59
16	7	22	4	13	11	35	5	15	4	12	12	58
17	7	22	4	14	10	30	5	15	5	15	12	58
18	7	22	4	14	8	25	5	15	5	15	13	66
19	7	21	4	14	5	14	5	15	6	19	14	82
20	7	21	6	21	4	10	4	12	6	19	15	89
21	6	18	8	29	4	11	5	16	6	19	11	59
22	6	18	5	17	4	13	5	16	6	18	10	51
23	6	18	4	12	4	12	5	16	7	21	11	60
24	6	18	3	9.4	4	11	5	16	7	21	12	73
25	5	15	3	10	4	12	5	15	7	22	12	78
26	5	15	3	10	4	13	5	15	8	26	12	80
27	5	15	3	10	4	12	5	14	9	30	11	73
28	5	16	3	9.6	4	11	6	17	9	29	10	65
29	5	18	4	13	5	13	6	18	8	25	11	69
30	5	19	5	18	6	15	5	16	---	---	12	73
31	5	17	---	---	6	13	4	13	---	---	12	74
TOTAL	---	575	---	477.0	---	599	---	456.4	---	456.9	---	2,526
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12	83	12	128	13	188	6	49	28	89	4	13
2	12	87	10	106	12	165	6	46	25	78	3	9.6
3	12	86	10	114	12	159	5	36	22	67	4	13
4	12	85	15	194	11	147	4	28	21	65	3	9.5
5	11	82	20	284	13	186	4	28	20	62	4	13
6	12	98	27	416	19	299	4	27	22	68	3	9.4
7	13	118	28	437	18	294	4	26	20	63	3	9.2
8	14	141	27	426	14	211	4	25	17	52	4	12
9	17	184	26	415	16	223	4	24	16	48	3	9.2
10	15	159	23	350	16	222	4	23	17	49	5	15
11	14	141	18	262	23	356	4	23	17	46	4	12
12	12	119	14	187	21	324	6	34	15	40	4	12
13	11	110	11	133	16	228	6	32	14	36	5	18
14	12	132	9	99	12	158	7	36	12	30	7	29
15	14	163	7	71	10	123	7	35	10	23	6	24
16	16	184	6	57	8	92	7	34	7	16	6	23
17	16	176	6	57	7	75	7	34	5	11	6	22
18	11	114	5	47	6	61	9	42	4	9.0	6	22
19	10	99	6	61	5	50	16	73	4	9.3	7	27
20	11	102	7	75	5	50	24	110	6	17	7	31
21	10	91	7	76	5	46	30	138	6	16	7	34
22	9	78	9	108	5	44	33	143	6	16	7	32
23	10	81	12	166	5	43	36	149	7	21	7	31
24	9	73	12	170	6	49	41	163	7	24	7	31
25	8	67	10	133	8	67	42	162	7	26	6	27
26	8	68	9	114	7	59	41	154	8	29	6	26
27	7	63	10	128	5	43	40	147	6	22	6	25
28	11	116	12	165	10	91	42	149	6	22	5	21
29	13	153	14	212	11	97	43	146	5	18	5	21
30	14	159	18	279	8	69	36	118	4	14	5	21
31	---	---	15	225	---	---	29	93	4	13	---	---
TOTAL	---	3,412	---	5,695	---	4,219	---	2,327	---	1,099.3	---	601.9

12342500 WEST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°43'30", long 114°16'50" (NAD 27), in SE¼NE¼NW¼ sec.26, T.1 S., R.22 W., Ravalli County, Hydrologic Unit 17010205, on right bank 0.6 mi downstream from Painted Rocks Lake, 6.4 mi upstream from Nez Perce Creek, 16.1 mi southwest of Conner, and at river mile 19.2.

DRAINAGE AREA.--317 mi^2.

PERIOD OF RECORD.--April 1941 to current year.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,581.36 ft (NGVD 29) (U.S. Forest Service bench mark).

REMARKS.--Records good. Flow regulated by Painted Rocks Lake (station 12342000). Diversions for irrigation of about 200 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	64	63	63	61	60	132	211	594	237	295	295
2	66	64	63	63	61	60	132	211	584	239	294	292
3	66	64	63	63	61	60	132	212	591	226	291	290
4	66	64	63	63	61	60	134	214	613	215	291	287
5	66	64	63	63	61	60	135	216	651	198	291	283
6	66	64	63	63	61	60	135	218	686	186	290	282
7	67	64	63	63	61	60	137	221	666	176	291	279
8	66	64	63	63	61	60	137	223	619	169	289	276
9	66	64	63	63	61	60	139	287	594	166	287	250
10	66	64	63	63	61	60	140	585	570	161	286	228
11	66	64	63	63	61	60	141	645	550	155	283	227
12	66	64	63	62	60	60	143	592	507	149	315	226
13	67	64	63	62	60	61	143	524	479	144	338	225
14	67	64	63	61	60	61	169	472	455	140	334	225
15	67	63	63	61	60	61	198	439	421	176	333	223
16	67	63	63	61	60	62	200	441	393	187	333	247
17	67	63	63	61	60	63	200	431	369	187	330	272
18	67	63	63	61	60	63	200	452	354	187	328	270
19	67	63	63	61	60	63	201	594	349	187	325	267
20	67	63	63	61	60	64	203	649	342	187	323	266
21	67	63	63	61	60	64	204	676	316	187	320	216
22	66	63	63	61	60	64	204	699	293	215	319	194
23	66	63	63	61	60	65	204	701	274	236	316	191
24	66	63	63	61	60	66	204	665	262	235	316	190
25	66	63	63	61	60	67	204	616	258	232	313	191
26	64	63	63	61	60	67	204	589	251	232	311	190
27	64	63	63	61	60	68	205	594	245	232	307	190
28	64	63	63	61	60	69	207	614	236	232	305	187
29	64	63	63	61	60	69	209	637	220	269	303	110
30	64	63	63	61	---	106	211	619	228	298	299	67
31	64	---	63	61	---	131	---	618	---	295	298	---
TOTAL	2,044	1,904	1,953	1,915	1,751	2,054	5,207	14,865	12,970	6,335	9,554	6,936
MEAN	65.9	63.5	63.0	61.8	60.4	66.3	174	480	432	204	308	231
MAX	67	64	63	63	61	131	211	701	686	298	338	295
MIN	64	63	63	61	60	60	132	211	220	140	283	67
AC-FT	4,050	3,780	3,870	3,800	3,470	4,070	10,330	29,480	25,730	12,570	18,950	13,760

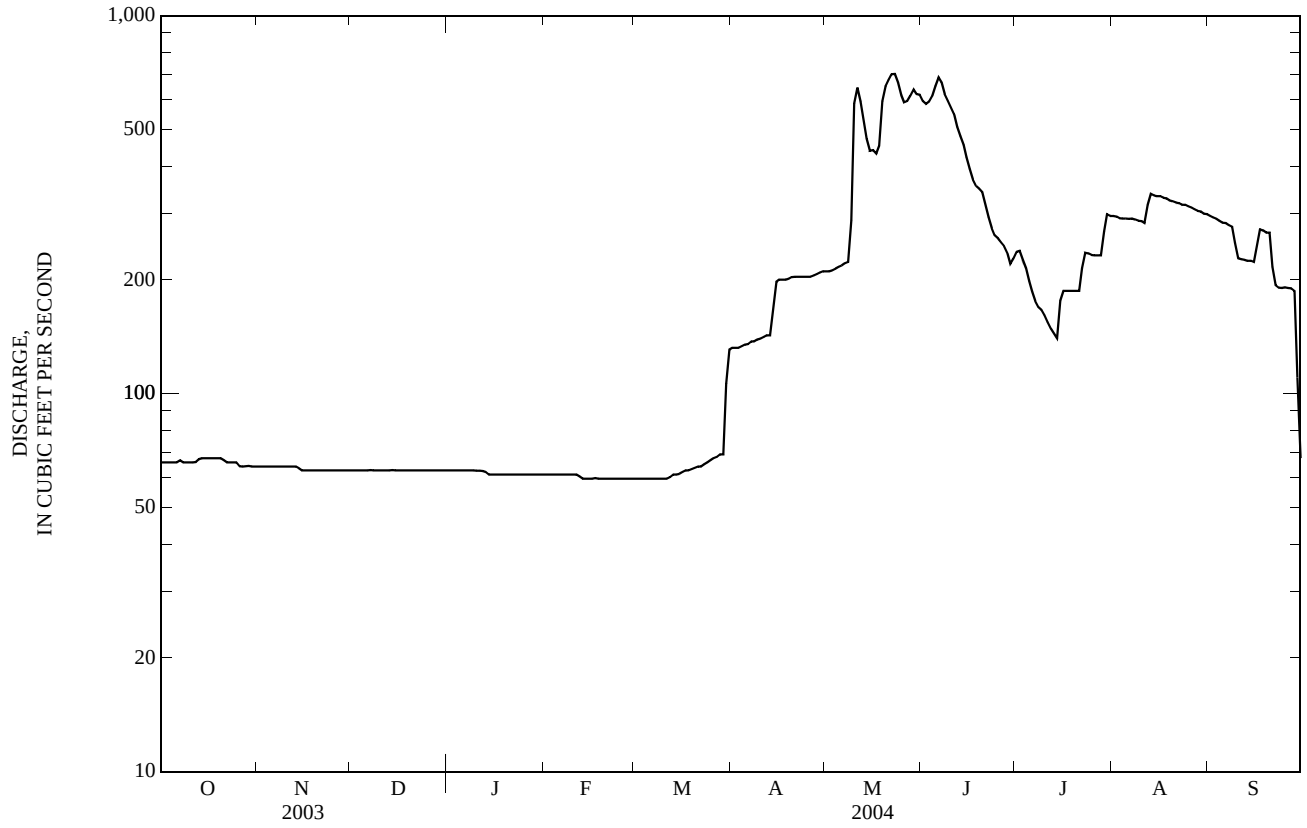
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

MEAN	155	111	90.4	83.3	79.8	93.3	204	806	909	265	204	178
MAX	484	416	270	243	215	277	719	2,011	1,960	633	439	385
(WY)	(1943)	(1945)	(1960)	(1957)	(1957)	(1952)	(1956)	(1947)	(1964)	(1975)	(1995)	(1973)
MIN	52.3	53.3	27.8	21.4	6.80	7.85	8.65	119	118	127	84.5	62.4
(WY)	(1999)	(1988)	(1958)	(1977)	(1944)	(1944)	(1944)	(1977)	(1987)	(1973)	(1945)	(1944)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	100,880		67,488			
ANNUAL MEAN	276		184		267	
HIGHEST ANNUAL MEAN					457	1976
LOWEST ANNUAL MEAN					120	1977
HIGHEST DAILY MEAN	2,810	May 31	701	May 23	3,900	May 9, 1947
LOWEST DAILY MEAN	61	Jan 11	a60	Feb 12	b0.60	May 3, 1954
ANNUAL SEVEN-DAY MINIMUM	61	Jan 11	60	Feb 12	0.66	May 1, 1954
MAXIMUM PEAK FLOW			712	May 22	4,060	May 9, 1947
MAXIMUM PEAK STAGE			2.80	May 22	6.18	May 9, 1947
INSTANTANEOUS LOW FLOW					c0.20	Nov 25, 1952
ANNUAL RUNOFF (AC-FT)	200,100		133,900		193,100	
10 PERCENT EXCEEDS	596		424		630	
50 PERCENT EXCEEDS	73		108		116	
90 PERCENT EXCEEDS	63		61		58	

a--February 12 to March 12.
b--May 3-7, 1954.
c--Dam shut down.

12342500 WEST FORK BITTERROOT RIVER NEAR CONNER, MT—Continued



12343400 EAST FORK BITTERROOT RIVER NEAR CONNER, MT

LOCATION.--Lat 45°53'00", long 114°03'53" (NAD 27), in NE¼SW¼NE¼ sec.34, T.2 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on right bank 10 ft downstream from private bridge, 4.3 mi southwest of Conner, and at river mile 6.1.

DRAINAGE AREA.--381 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to September 1972, October 2000 to September 30, 2004 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 4,191.81 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 2,200 acres above station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	e75	87	e77	e75	67	237	403	601	272	116	107
2	72	e90	90	e80	e63	72	213	456	589	261	117	115
3	72	e87	90	e70	e70	61	198	553	604	252	114	114
4	72	85	72	e57	e75	73	221	661	645	277	112	108
5	72	e70	81	e50	74	68	264	763	715	243	109	104
6	73	e65	96	e53	70	69	305	808	776	226	133	102
7	73	e73	95	e60	71	67	343	766	700	220	116	101
8	74	e77	90	e67	70	76	385	779	637	213	108	97
9	73	e85	76	e75	67	90	385	731	586	204	104	95
10	74	e95	96	e77	71	107	348	669	714	202	101	93
11	75	105	91	e73	65	98	327	691	702	204	98	90
12	82	94	85	e67	60	103	337	598	592	189	95	146
13	83	91	87	e70	e57	114	374	516	550	178	93	215
14	83	e83	91	e70	e65	105	432	472	517	172	89	161
15	85	e85	82	e67	e70	100	428	455	477	168	86	154
16	88	91	70	e73	e67	108	385	470	443	164	80	144
17	88	90	e85	e67	69	110	367	496	424	156	97	136
18	86	86	e67	e67	75	121	347	541	448	156	110	138
19	83	93	e60	e70	78	147	323	698	442	186	106	214
20	79	103	e85	e70	73	136	312	653	404	227	101	217
21	78	88	e95	e67	67	135	290	660	367	185	98	198
22	77	e70	e80	e65	63	154	270	693	343	163	103	177
23	76	e75	e65	e70	72	186	264	774	326	155	121	178
24	75	e90	e85	e75	78	230	283	714	308	147	134	179
25	75	e85	e90	e70	79	230	279	646	299	144	162	166
26	78	e87	e80	e70	74	217	304	627	293	142	191	159
27	74	e85	e70	e73	73	190	362	658	324	134	164	154
28	75	e80	e65	e75	72	174	479	710	312	132	140	150
29	127	91	e75	e77	71	163	419	735	296	126	127	147
30	100	89	e73	e85	---	178	396	670	301	122	117	143
31	e63	---	e70	e80	---	215	---	641	---	119	111	---
TOTAL	2,458	2,563	2,524	2,167	2,034	3,964	9,877	19,707	14,735	5,739	3,553	4,302
MEAN	79.3	85.4	81.4	69.9	70.1	128	329	636	491	185	115	143
MAX	127	105	96	85	79	230	479	808	776	277	191	217
MIN	63	65	60	50	57	61	198	403	293	119	80	90
AC-FT	4,880	5,080	5,010	4,300	4,030	7,860	19,590	39,090	29,230	11,380	7,050	8,530

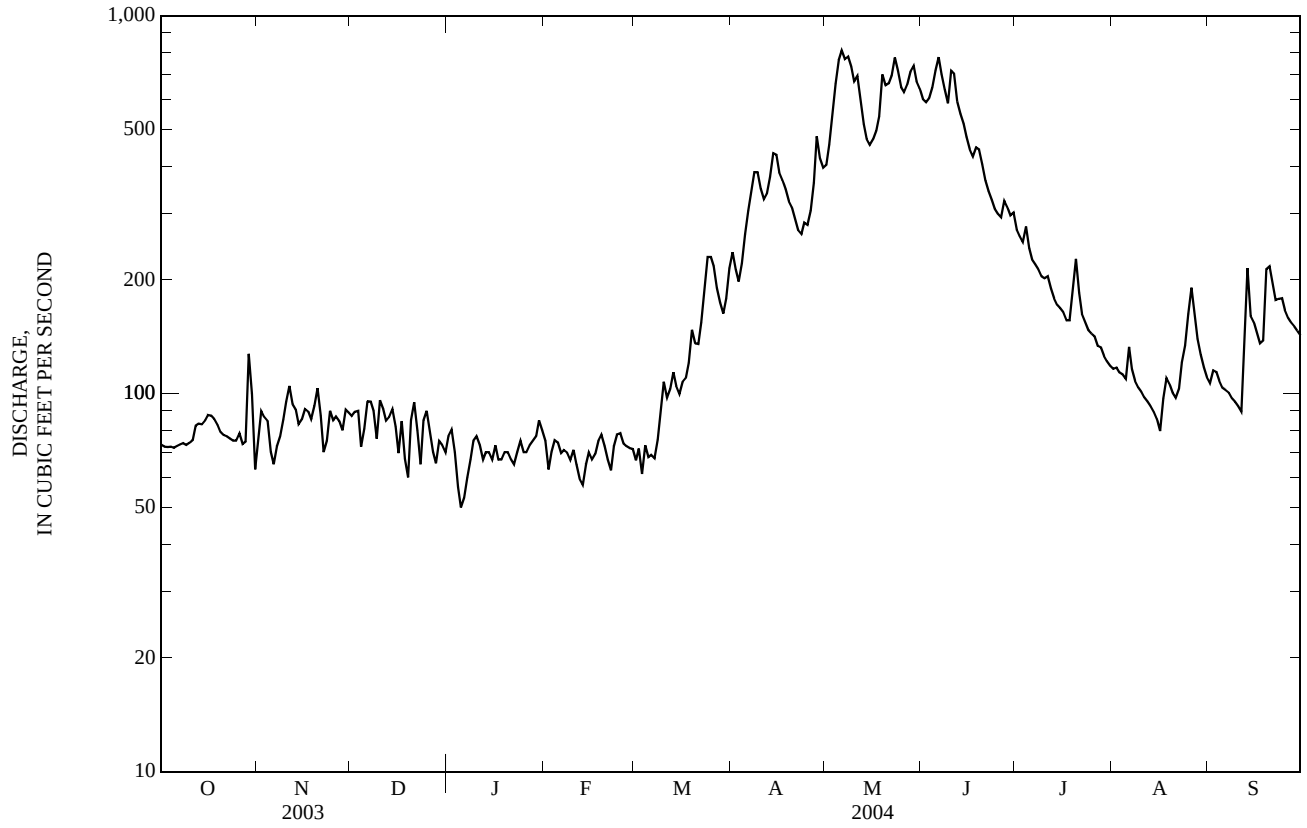
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2004, BY WATER YEAR (WY)*

MEAN	113	102	88.6	83.8	89.1	112	257	940	1,077	293	127	113
MAX	206	137	168	115	170	215	476	1,482	1,962	520	203	187
(WY)	(2001)	(1960)	(1965)	(1969)	(1963)	(1972)	(1969)	(1971)	(1972)	(1964)	(1965)	(1965)
MIN	79.3	78.5	39.4	56.8	51.6	74.4	109	520	355	126	72.6	81.1
(WY)	(2004)	(1967)	(1961)	(1961)	(2001)	(2002)	(1970)	(1966)	(1966)	(1966)	(1961)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1956 - 2004*	
ANNUAL TOTAL	109,231		73,623			
ANNUAL MEAN	299		201		281	
HIGHEST ANNUAL MEAN					400	1965
LOWEST ANNUAL MEAN					170	1966
HIGHEST DAILY MEAN	3,320	May 31	808	May 6	3,640	Jun 2, 1972
LOWEST DAILY MEAN	40	Feb 24	50	Jan 5	25	Dec 8, 1960
ANNUAL SEVEN-DAY MINIMUM	60	Feb 19	62	Jan 3	27	Dec 6, 1960
MAXIMUM PEAK FLOW			887	May 6	4,000	Jun 2, 1972
MAXIMUM PEAK STAGE			4.68	May 6	7.17	Jun 2, 1972
INSTANTANEOUS LOW FLOW			a46	Mar 3	b23	Nov 29, 1960
ANNUAL RUNOFF (AC-FT)	216,700		146,000		203,600	
10 PERCENT EXCEEDS	741		544		766	
50 PERCENT EXCEEDS	96		106		115	
90 PERCENT EXCEEDS	73		70		72	

*--During period of operation (April 1956 to September 1972, and October 2000 to September 2004).
a--Gage height, 2.66 ft.
b--Discharge measurement, result of freezeup.
e--Estimated.

12343400 EAST FORK BITTERROOT RIVER NEAR CONNER, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Total nitrogen, wat unfltrd mg/L (62855)
MAR										
15...	1400	98	8.5	126	10.5	6.5	E.009	E.001	.03	.14
MAY										
25...	1040	653	8.0	70	16.0	5.0	.062	E.001	.05	.20
JUN										
23...	1400	330	8.0	79	30.5	15.0	<.016	<.002	.07	.19
AUG										
16...	1130	80	8.2	113	30.0	16.5	<.016	<.002	<.02	.05

E--Estimated.

12343400 EAST FORK BITTERROOT RIVER NEAR CONNER, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
MAR 15...	.007	.021	.4	2.3	85	3	.79
MAY 25...	.007	.033	.9	3.5	53	8	14
JUN 23...	.007	.024	.9	2.6	62	5	4.5
AUG 16...	.006	.005	.5	2.4	85	2	.43

Date	Time	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
MAR 15...	1400	51	16.3	2.55	1.23	.3	4.64	57	2.26	.2	14.9
JUN 23...	1400	35	11.5	1.52	.92	.2	2.82	39	.76	<.2	11.8

Date	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)
MAR 15...	4.6	81	.11	21.4	.3	<2	<.04	<.04	<.8	<.8
JUN 23...	1.6	54	.07	48.2	.3	<2	<.04	<.04	<.8	<.8

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
MAR 15...	.4	E.4	<.08	E.05	.38	.36	E.4	<2
JUN 23...	.5	E.5	<.08	.10	.17	.26	E.4	<2

E--Estimated.

12344000 BITTERROOT RIVER NEAR DARBY, MT

LOCATION.--Lat 45°58'20", long 114°08'26" (NAD 27), in SW¼SE¼NE¼ sec.36, T.3 N., R.21 W., Ravalli County, Hydrologic Unit 17010205, on left bank 50 ft upstream from bridge on U.S. Highway 93, 0.3 mi downstream from Chaffin Creek, 4.1 mi southeast of Darby, and at river mile 77.2.

DRAINAGE AREA.--1,049 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1937 to current year. Monthly discharge only for April 1937, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,942.14 ft (NGVD 29). Prior to Oct. 1, 1987, at elevation 1.00 ft higher. Prior to Aug. 2, 1939, nonrecording gage at highway bridge 45 ft upstream at same elevation.

REMARKS.--Water-discharge records good, which are fair. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 5,000 acres upstream from station. Ditch bypassing station irrigates about 500 acres downstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	215	235	206	198	196	855	1,260	1,960	1,020	481	493
2	183	253	237	214	166	206	786	1,480	1,990	965	479	499
3	181	252	242	182	184	187	734	1,860	2,130	897	476	492
4	181	239	215	e150	202	205	781	2,180	2,400	891	472	478
5	180	180	219	e130	197	198	990	2,440	2,700	804	469	469
6	180	172	249	e140	173	199	1,170	2,460	2,770	745	481	459
7	181	191	254	e160	195	197	1,240	2,270	2,330	713	468	449
8	181	206	247	e180	192	208	1,330	2,300	2,100	682	453	438
9	181	230	210	e200	186	237	1,290	2,130	2,000	629	445	421
10	182	247	228	207	184	292	1,140	2,140	2,160	611	437	383
11	183	277	235	198	183	306	1,050	2,180	2,130	605	428	374
12	194	255	228	184	155	318	1,070	1,920	1,880	569	432	545
13	199	229	236	190	153	360	1,190	1,660	1,800	530	464	773
14	200	220	257	186	176	356	1,360	1,490	1,730	510	458	627
15	204	225	235	183	191	342	1,350	1,390	1,610	510	453	605
16	214	235	181	195	184	351	1,210	1,390	1,430	e540	447	615
17	210	240	225	184	194	360	1,120	1,430	1,370	e520	476	622
18	218	230	180	183	207	382	1,050	1,530	1,420	e530	498	598
19	216	240	166	193	211	467	988	2,000	1,450	e600	490	711
20	208	261	226	192	199	460	953	2,060	1,440	e700	479	746
21	204	234	257	178	189	447	895	2,160	1,340	e600	467	687
22	202	187	218	176	181	512	836	2,240	1,280	e550	474	598
23	200	202	175	188	188	647	800	2,290	1,310	e520	525	600
24	196	239	229	201	210	859	850	2,110	1,310	e510	552	604
25	195	222	244	190	215	834	851	1,900	1,310	e500	643	568
26	197	229	216	185	210	749	917	1,840	1,240	e510	799	538
27	195	222	190	187	208	654	1,140	2,260	1,250	471	691	514
28	198	216	175	193	207	591	1,570	2,530	1,140	459	608	497
29	549	242	207	202	205	550	1,380	2,400	1,090	454	561	459
30	369	249	194	225	---	593	1,250	2,150	1,080	494	530	362
31	229	---	192	210	---	768	---	2,070	---	488	507	---
TOTAL	6,595	6,839	6,802	5,792	5,543	13,031	32,146	61,520	51,150	19,127	15,643	16,224
MEAN	213	228	219	187	191	420	1,072	1,985	1,705	617	505	541
MAX	549	277	257	225	215	859	1,570	2,530	2,770	1,020	799	773
MIN	180	172	166	130	153	187	734	1,260	1,080	454	428	362
AC-FT	13,080	13,570	13,490	11,490	10,990	25,850	63,760	122,000	101,500	37,940	31,030	32,180

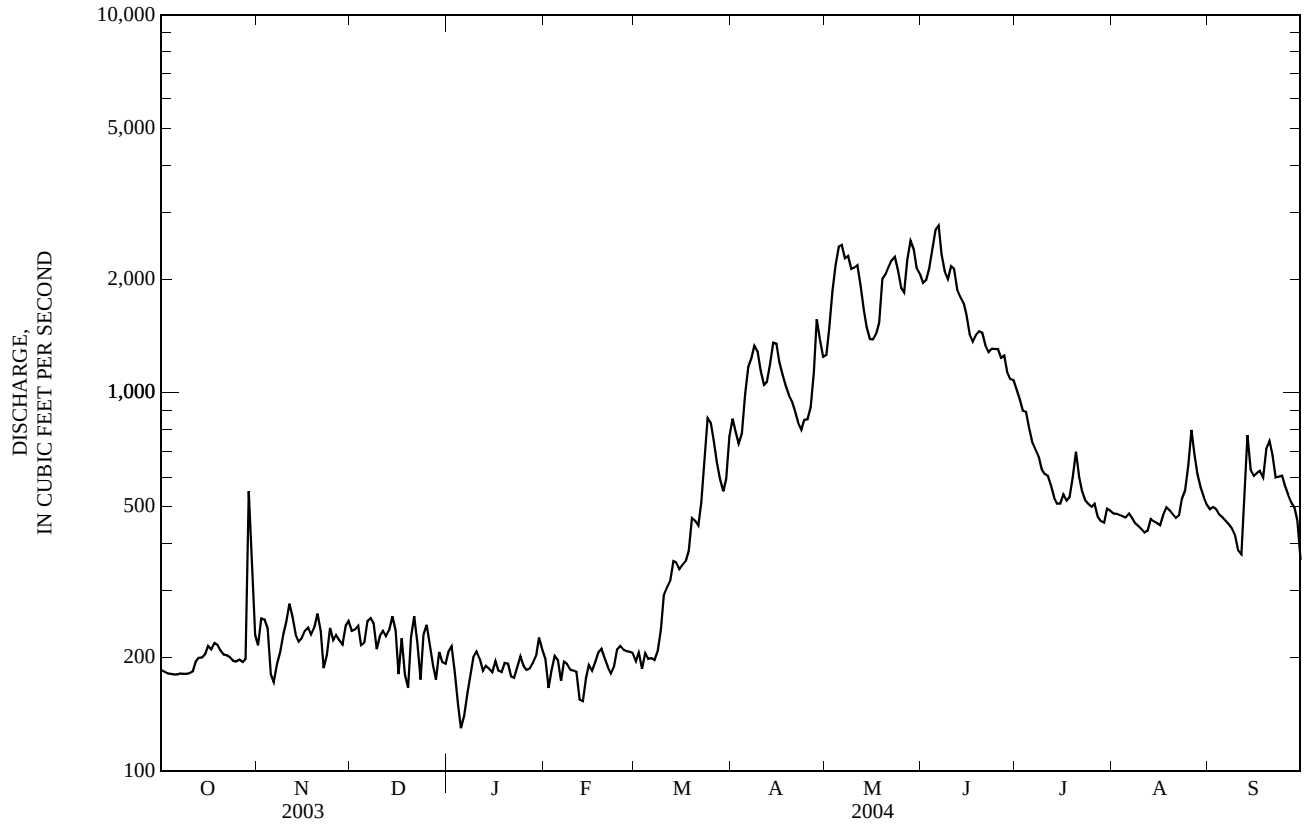
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2004, BY WATER YEAR (WY)

MEAN	354	313	279	250	269	355	974	2,864	3,047	973	410	351
MAX	1,020	788	765	421	791	1,011	2,530	5,995	6,235	2,608	751	634
(WY)	(1947)	(1947)	(1947)	(1947)	(1996)	(1972)	(1943)	(1947)	(1964)	(1975)	(1975)	(1941)
MIN	143	144	138	125	125	139	306	1,110	678	210	141	129
(WY)	(1938)	(1988)	(1988)	(1988)	(1941)	(1944)	(1937)	(1977)	(1987)	(1940)	(1940)	(1937)

12344000 BITTERROOT RIVER NEAR DARBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1937 - 2004	
ANNUAL TOTAL	340,740		240,412			
ANNUAL MEAN	934		657		876	
HIGHEST ANNUAL MEAN					1,423	1976
LOWEST ANNUAL MEAN					454	1987
HIGHEST DAILY MEAN	9,280	May 31	2,770	Jun 6	11,000	May 9, 1947
LOWEST DAILY MEAN	140	Feb 24	130	Jan 5	80	Feb 9, 1939
ANNUAL SEVEN-DAY MINIMUM	181	Oct 3	163	Jan 3	98	Jan 1, 1988
MAXIMUM PEAK FLOW			2,950	Jun 6	a11,500	May 9, 1947
MAXIMUM PEAK STAGE			4.51	Jun 6	8.45	May 31, 2003
INSTANTANEOUS LOW FLOW			110	Feb 13	b71	Feb 9, 1939
ANNUAL RUNOFF (AC-FT)	675,900		476,900		635,000	
10 PERCENT EXCEEDS	2,330		1,750		2,360	
50 PERCENT EXCEEDS	381		454		369	
90 PERCENT EXCEEDS	192		184		195	

a--Gage height, 8.18 ft, datum then in use.
b--Observed.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997-98, October 2000 to to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 2001 to current year(seasonal records from April 2001 to September 2003).

INSTRUMENTATION.--Temperature probe installed Mar. 27, 2001.

REMARKS.--Daily water temperature records rated excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.5°C, Aug. 8, 2001; minimum,0.0°C, many days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 20.0°C, July 16; minimum,0.0°C, many days during winter period..

12344000 BITTERROOT RIVER NEAR DARBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Total nitrogen, wat unf by analysis, mg/L (62855)
MAR										
15...	1200	341	7.9	86	12.5	5.0	.033	E.001	<.02	.12
MAY										
25...	1245	1,930	7.8	50	18.0	7.0	.025	E.001	.03	.12
JUN										
23...	1600	1,230	7.6	45	33.0	15.0	<.016	<.002	.04	.14
AUG										
16...	1230	448	7.8	65	31.0	17.0	<.016	<.002	.03	.06

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAR							
15...	E.004	.014	.3	2.2	83	3	2.8
MAY							
25...	<.006	.012	.5	2.9	54	7	36
JUN							
23...	E.003	.012	.5	2.2	56	4	13
AUG							
16...	<.006	E.002	.6	2.5	29	7	8.5

Date	Time	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
MAR											
15...	1200	34	10.8	1.78	.89	.3	3.50	39	1.45	.2	12.5
JUN											
23...	1600	17	5.62	.834	.56	.2	1.91	22	.43	<.2	8.4

Date	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recoverable, ug/L (01034)
MAR										
15...	3.4	58	.08	53.3	E.2	<2	<.04	<.04	<.8	<.8
JUN										
23...	1.0	32	.04	105	E.1	<2	<.04	<.04	<.8	<.8

E--Estimated.

12344000 BITTERROOT RIVER NEAR DARBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)
MAR								
15...	1.5	1.9	<.08	.11	.27	.34	E.5	<2
JUN								
23...	.7	.9	<.08	.10	.15	.40	E.5	<2

E--Estimated.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.0	9.5	11.5	2.0	0.0	1.0	4.0	2.0	3.0	0.5	0.0	0.0
2	13.5	9.5	11.5	2.0	1.0	1.5	4.0	2.5	3.0	0.5	0.0	0.5
3	13.0	8.5	11.0	2.5	1.0	1.5	4.5	2.0	3.5	0.5	0.0	0.0
4	13.5	8.5	11.0	2.5	0.5	1.0	2.0	0.0	1.0	0.5	0.0	0.0
5	13.5	9.0	11.0	1.0	0.0	0.5	2.5	0.5	1.5	0.5	0.0	0.0
6	14.0	9.5	12.0	1.5	0.0	0.5	3.5	2.5	3.0	0.5	0.0	0.0
7	12.5	10.0	11.5	1.5	0.0	0.5	3.0	1.5	2.5	0.0	0.0	0.0
8	14.0	10.5	12.0	2.0	0.0	0.5	2.0	1.0	1.5	0.5	0.0	0.0
9	12.5	10.0	11.0	2.0	0.5	1.0	1.0	0.0	0.5	0.5	0.0	0.5
10	10.0	8.0	9.0	3.0	1.0	2.0	1.5	0.5	1.0	1.0	0.0	0.5
11	9.0	6.0	7.5	2.5	2.0	2.5	1.5	0.5	0.5	1.0	0.0	0.5
12	11.0	7.5	9.0	3.5	1.5	2.5	1.5	0.5	1.0	1.0	0.0	0.5
13	10.5	8.0	9.0	3.0	0.5	1.5	2.5	1.5	2.0	1.5	0.0	0.5
14	8.5	6.5	7.5	2.5	0.5	1.0	2.5	1.5	2.0	1.0	0.0	0.5
15	8.5	7.0	8.0	2.5	0.5	1.5	2.0	0.0	1.0	1.0	0.0	0.5
16	9.0	6.0	7.5	4.0	2.0	2.5	1.0	0.0	0.5	1.5	0.0	0.5
17	11.5	7.5	9.5	3.0	2.0	2.5	2.0	0.0	1.0	1.0	0.0	0.5
18	11.5	7.5	9.5	4.0	2.5	3.0	1.0	0.0	0.5	0.5	0.0	0.5
19	12.0	7.5	9.5	4.5	3.5	4.0	1.0	0.0	0.5	1.5	0.0	0.5
20	12.0	8.0	10.0	3.5	1.0	2.5	1.0	0.5	0.5	1.0	0.0	0.5
21	12.5	9.0	10.5	2.0	0.5	1.0	1.5	0.5	0.5	1.0	0.0	0.5
22	12.0	8.0	10.0	0.5	0.0	0.0	1.0	0.0	0.5	1.5	0.0	0.5
23	10.5	7.5	9.0	1.0	0.0	0.5	1.0	0.0	0.5	1.5	0.0	0.5
24	7.5	5.0	6.5	1.5	0.0	0.5	1.0	0.5	0.5	1.0	0.0	0.5
25	7.0	3.5	5.5	1.5	0.0	0.5	1.5	0.5	1.0	1.0	0.0	0.5
26	8.0	4.0	6.0	1.5	0.5	1.0	0.5	0.0	0.5	1.5	0.0	0.5
27	8.5	6.0	7.5	1.5	0.0	0.5	0.5	0.0	0.0	1.5	0.5	0.5
28	10.0	8.0	9.0	2.0	0.5	1.0	0.5	0.0	0.0	1.5	0.5	1.0
29	10.0	5.0	7.0	2.5	1.0	2.0	0.0	0.0	0.0	1.5	0.5	1.0
30	5.0	1.0	3.0	3.0	1.5	2.0	0.5	0.0	0.0	1.0	0.0	0.5
31	2.5	0.5	1.0	---	---	---	0.5	0.0	0.0	1.5	0.0	0.5
MONTH	14.0	0.5	9.0	4.5	0.0	1.5	4.5	0.0	1.0	1.5	0.0	0.5

12344000 BITTERROOT RIVER NEAR DARBY, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	0.0	0.5	4.5	0.0	2.0	5.5	3.5	4.5	11.0	5.0	8.0
2	1.0	0.0	0.5	3.5	1.0	2.0	4.5	3.0	4.0	10.5	5.5	8.5
3	1.0	0.0	0.5	3.0	0.0	1.5	8.5	3.0	6.0	10.5	6.0	8.0
4	1.5	0.5	0.5	4.0	1.0	2.5	9.0	5.5	7.0	10.0	5.5	7.5
5	1.5	0.0	0.5	4.0	1.0	2.5	8.5	4.0	6.5	10.0	6.0	8.0
6	1.0	0.0	0.5	4.0	0.5	2.0	7.5	4.5	6.0	9.5	5.5	7.5
7	1.5	0.5	0.5	4.0	0.5	2.5	8.5	4.5	6.5	10.5	6.0	8.0
8	1.5	0.5	0.5	7.0	1.5	4.0	7.5	4.0	6.0	9.5	5.5	7.5
9	2.5	0.0	0.5	6.0	2.0	4.0	6.5	4.5	5.5	10.0	5.5	7.5
10	1.5	0.0	0.5	6.0	2.0	4.0	7.5	3.0	5.0	8.0	5.5	6.5
11	2.5	0.0	1.0	5.5	1.0	3.0	8.5	3.0	5.5	7.0	5.5	6.5
12	1.5	0.0	0.5	6.0	1.5	4.0	9.0	3.5	6.5	7.5	5.0	6.0
13	1.5	0.0	0.5	5.0	2.5	4.0	8.0	4.5	6.5	8.5	4.5	6.5
14	1.5	0.0	0.5	5.0	2.0	3.5	7.0	5.0	6.5	9.5	5.0	7.0
15	1.5	0.0	0.5	6.5	2.0	4.5	7.0	4.0	5.5	10.0	5.5	8.0
16	1.5	0.0	0.5	5.5	3.5	5.0	7.0	3.0	5.0	9.0	7.5	8.0
17	1.0	0.5	0.5	5.5	3.5	4.5	7.0	4.0	5.5	12.0	7.0	9.0
18	2.0	0.5	1.0	7.0	3.0	5.0	7.5	4.5	6.0	10.0	7.5	8.0
19	2.5	0.5	1.5	6.5	4.0	5.0	7.0	4.5	5.5	10.0	6.5	8.0
20	3.5	0.5	1.5	6.0	2.0	4.0	7.0	4.0	5.5	12.0	7.0	9.5
21	3.5	0.0	1.5	7.5	2.5	5.0	8.5	3.5	5.5	10.5	8.0	9.0
22	3.0	0.0	1.0	8.5	4.0	6.0	9.5	3.5	6.5	9.5	7.5	8.5
23	3.5	0.0	1.0	8.0	4.0	6.0	10.5	4.5	7.5	8.5	6.5	7.5
24	3.0	0.0	1.5	6.0	3.0	4.5	10.0	6.0	8.0	9.0	5.5	7.0
25	3.5	1.0	2.0	6.5	3.5	5.0	10.5	4.5	7.5	10.0	5.5	7.5
26	3.5	1.5	2.5	6.0	4.0	5.0	11.5	5.5	8.5	10.0	7.5	8.5
27	4.5	1.0	2.5	5.0	2.5	3.5	10.0	6.0	8.0	10.5	7.5	9.0
28	4.0	1.5	2.5	7.5	3.0	5.0	8.0	4.5	5.5	9.0	7.5	8.0
29	4.0	1.5	2.5	8.0	2.5	5.5	8.0	2.5	5.5	9.0	6.5	7.5
30	---	---	---	9.0	3.5	6.0	9.5	4.0	6.5	9.5	6.0	7.5
31	---	---	---	6.5	4.0	5.5	---	---	---	10.5	7.0	8.5
MONTH	4.5	0.0	1.0	9.0	0.0	4.0	11.5	2.5	6.0	12.0	4.5	8.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	13.0	7.5	10.0	16.5	11.5	13.5	18.0	13.0	15.5	17.0	13.5	15.5
2	13.5	7.5	10.5	16.5	11.5	14.0	16.0	13.0	14.5	15.5	13.0	14.5
3	13.0	8.0	10.5	15.0	11.5	13.5	18.0	13.0	15.5	14.5	10.5	13.0
4	13.5	8.5	11.0	16.0	11.5	14.0	19.0	13.0	16.0	16.0	12.5	14.5
5	12.5	9.0	10.5	16.5	11.0	14.0	17.5	13.0	15.5	16.0	12.5	14.0
6	12.0	9.0	10.0	16.0	11.5	14.5	17.5	13.0	15.5	16.0	10.5	13.5
7	12.0	7.5	9.5	16.0	12.0	14.0	17.5	13.0	15.0	16.5	11.5	14.0
8	10.5	8.0	9.0	16.0	10.0	13.0	17.5	11.5	15.0	16.5	11.5	14.0
9	12.0	8.0	10.0	16.5	11.0	14.0	18.0	12.0	15.5	16.0	12.5	14.5
10	11.0	9.0	10.0	16.5	12.5	14.5	18.0	12.0	15.5	17.5	13.0	15.0
11	12.0	8.5	10.0	18.0	12.5	15.5	18.5	12.5	15.5	17.0	12.5	15.0
12	11.5	7.5	9.5	18.5	12.0	15.5	18.5	12.5	16.0	15.5	12.0	13.5
13	12.0	9.0	10.5	18.5	13.0	16.0	18.5	12.5	15.5	12.5	10.5	12.0
14	13.0	8.5	10.5	18.5	13.5	16.5	18.5	12.5	16.0	12.5	10.5	11.5
15	11.5	8.5	9.5	19.5	14.0	16.5	17.0	13.5	15.5	12.0	10.0	11.0
16	13.5	7.0	10.0	20.0	14.0	17.0	18.0	14.0	16.0	13.0	10.5	11.5
17	13.5	8.0	10.5	19.5	14.5	17.0	17.5	14.5	16.0	13.0	9.5	11.5
18	11.5	9.0	10.5	18.0	15.5	16.5	18.5	14.5	16.5	12.0	10.5	11.0
19	11.5	9.0	10.0	19.0	14.5	16.5	18.5	13.5	16.5	10.5	9.0	9.5
20	13.5	8.0	10.5	19.0	15.0	17.0	19.0	13.5	16.0	11.0	8.5	9.5
21	14.5	9.0	11.5	19.0	14.0	16.5	17.5	14.0	16.0	9.5	8.0	9.0
22	15.0	9.5	12.5	19.0	13.5	16.5	16.5	14.5	15.5	10.5	8.5	9.5
23	16.0	10.5	13.0	19.0	13.5	16.5	16.0	13.0	14.5	11.5	9.0	10.5
24	16.5	11.0	13.5	19.5	13.5	16.5	14.5	12.0	13.5	12.5	9.0	11.0
25	16.0	11.5	14.0	17.0	13.5	15.5	14.5	13.0	13.5	13.0	9.0	11.0
26	16.0	11.5	13.5	19.0	12.5	15.5	14.5	11.5	13.0	13.0	9.0	11.0
27	14.0	11.5	13.0	18.0	13.0	16.0	15.5	11.5	13.5	13.0	9.0	11.0
28	14.5	11.0	13.0	18.5	13.0	15.5	16.0	11.5	14.0	12.5	9.0	11.0
29	14.0	11.0	12.5	18.5	12.5	15.5	17.5	12.0	15.0	12.5	8.5	10.5
30	15.5	11.0	13.0	18.5	12.0	15.5	18.0	12.5	15.5	12.0	8.5	10.5
31	---	---	---	18.5	12.5	16.0	18.5	13.0	16.0	---	---	---
MONTH	16.5	7.0	11.1	20.0	10.0	15.4	19.0	11.5	15.3	17.5	8.0	12.1

12350250 BITTERROOT RIVER AT BELL CROSSING, NEAR VICTOR, MT

LOCATION.--Lat 46°26'36", long 114°07'22" (NAD 27), in NW¼NW¼NE¼ sec. 20, T.8 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on right bank 20 ft downstream from highway bridge at Bell Crossing, 1.5 mi northeast of Victor, 2.0 mi upstream from Big Creek, and at river mile 38.3.

DRAINAGE AREA.--1,963 mi^2.

PERIOD OF RECORD.--April 1987 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft (NGVD 29).

REMARKS.--Seasonal records good. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 80,000 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1							1,900	337	611			
2							1,700	335	635			
3							1,510	333	e670			
4							1,400	341	e650			
5							1,310	332	e620			
6							1,170	331	e580			
7							1,080	339	e560			
8							1,050	329	534			
9							925	323	516			
10							833	318	495			
11							784	313	462			
12							721	312	573			
13							629	316	1,050			
14							577	311	1,110			
15							530	299	1,110			
16							491	301	1,120			
17							451	311	1,130			
18							438	376	1,070			
19							502	398	1,220			
20							572	400	1,370			
21							596	391	1,320			
22							485	409	1,200			
23							440	466	1,180			
24							409	555	1,190			
25							390	618	1,100			
26							403	1,080	1,020			
27							385	1,120	966			
28							371	912	921			
29							349	787	886			
30							327	707	824			
31							338	644	---			
TOTAL							23,066	14,344	26,693			
MEAN							744	463	890			
MAX							1,900	1,120	1,370			
MIN							327	299	462			
AC-FT							45,750	28,450	52,950			

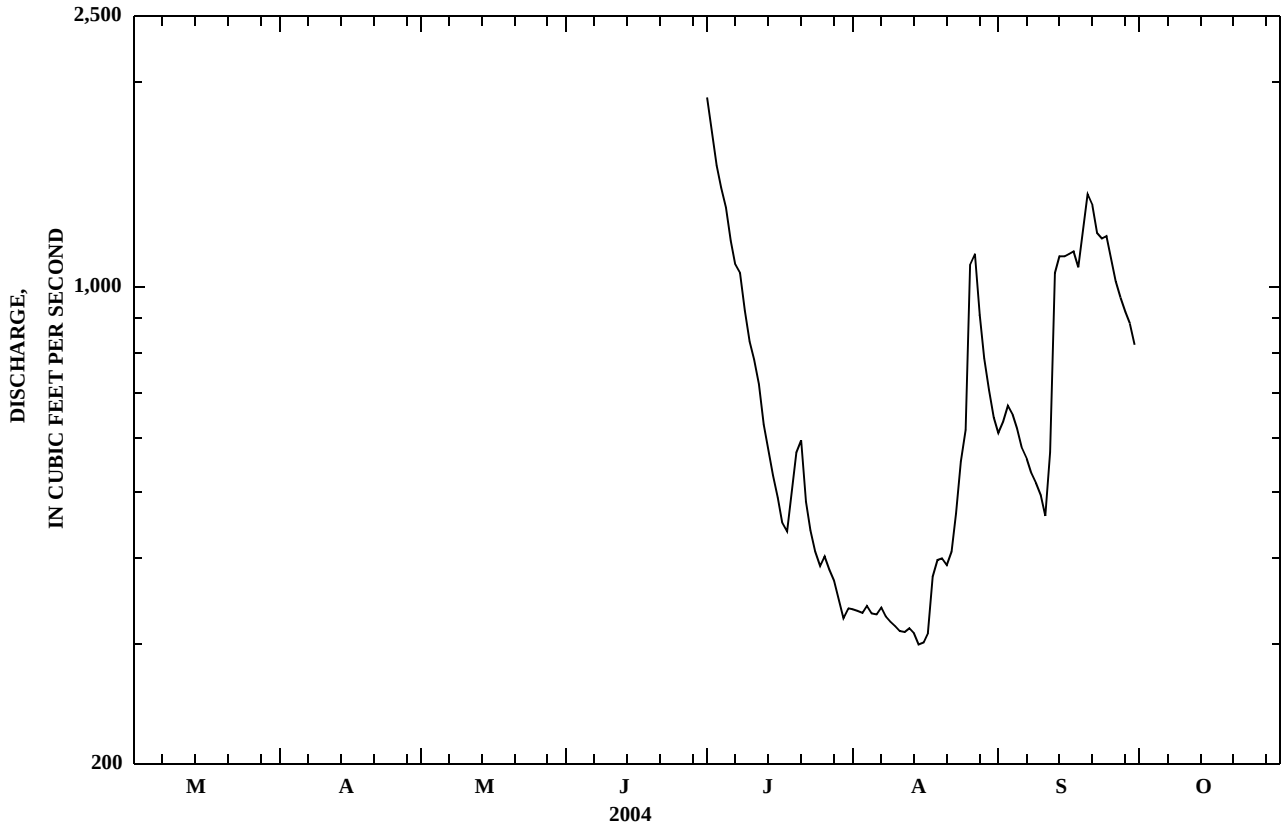
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1987 - 2004

MEAN	1,713	3,769	5,158	1,198	386	404	541	1,798
MAX	3,052	5,177	11,060	2,665	670	890	947	1,798
(WY)	(1990)	(2003)	(1996)	(1996)	(1993)	(2004)	(1996)	(1996)
MIN	747	3,092	1,372	207	95.8	145	397	1,798
(WY)	(1991)	(1987)	(1987)	(1987)	(1988)	(1987)	(1989)	(1996)

SUMMARY STATISTICS	FOR 2004 SEASON		FOR SEASONS 1987 - 2004	
HIGHEST DAILY MEAN	1,900	Jul 1	17,500	Jun 9, 1996
LOWEST DAILY MEAN	299	Aug 15	63	Jul 16, 1987
MAXIMUM PEAK FLOW			a18,700	Jun 9, 1996
MAXIMUM PEAK STAGE			10.82	May 31, 2003
INSTANTANEOUS LOW FLOW			60	Jul 16, 1987

a--Gage height, 10.07 ft.
e--Estimated.

12350250 BITTERROOT RIVER AT BELL CROSSING, NEAR VICTOR, MT—Continued



12351200 BITTERROOT RIVER NEAR FLORENCE, MT

LOCATION.--Lat 46°38'00", long 114°03'00" (NAD 27), in SW¼SE¼SE¼ sec. 12, T.10 N., R.20 W., Ravalli County, Hydrologic Unit 17010205, on right bank 85 ft upstream from bridge on State secondary Highway 203, 1.3 mi east of Florence, 240 ft upstream from Eightmile Creek, and at river mile 22.7.
DRAINAGE AREA.--2,354 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1957 to December 1965, October 2002 to current year.
GAGE.--Water-stage recorder. Elevation of gage is 3,200 ft (NGVD 29). Prior to Jan. 1, 1966, nonrecording gage at different datum.
REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 105,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	470	874	724	553	684	624	2,050	2,590	4,780	2,990	581	1,010
2	500	826	712	600	631	616	2,090	2,950	4,500	2,750	578	1,060
3	500	852	718	610	577	621	1,930	3,850	4,740	2,480	579	1,130
4	500	817	706	e500	603	606	1,880	4,880	5,370	2,270	589	1,120
5	498	748	671	e370	610	615	2,210	5,690	6,570	2,140	567	1,060
6	492	649	705	e330	586	633	2,720	6,290	7,580	1,950	544	1,020
7	492	623	767	e300	569	629	3,240	5,790	6,910	1,800	576	1,010
8	500	632	774	e400	590	629	3,470	5,860	5,550	1,750	592	950
9	494	670	749	e500	581	658	3,460	5,510	5,070	1,540	563	898
10	490	703	711	e600	572	738	3,140	4,780	5,430	1,420	540	860
11	494	771	707	629	565	827	2,820	4,780	5,790	1,330	523	813
12	508	830	706	613	549	870	2,750	4,350	5,360	1,240	513	928
13	519	775	729	584	496	908	2,970	3,640	4,790	1,100	514	1,460
14	525	721	787	585	497	958	3,370	3,150	4,840	1,000	520	1,750
15	542	697	805	577	555	965	3,540	2,820	4,410	952	505	1,740
16	566	696	741	578	562	944	3,170	2,670	3,870	875	504	1,790
17	575	715	685	579	574	947	2,790	2,880	3,530	823	503	1,840
18	577	716	688	561	649	981	2,560	2,950	3,500	798	615	1,800
19	596	714	606	568	724	1,080	2,350	3,770	4,030	877	659	1,940
20	595	742	593	586	701	1,210	2,190	4,230	4,180	1,010	674	2,130
21	589	752	671	574	658	1,180	2,060	4,420	3,920	1,050	684	2,070
22	581	698	700	556	622	1,200	1,900	4,740	3,770	911	722	1,910
23	563	619	629	570	600	1,380	1,760	5,180	3,870	811	828	1,830
24	545	654	569	589	622	1,840	1,800	4,870	3,910	766	956	1,860
25	544	688	688	599	652	2,210	1,850	4,220	3,970	738	1,050	1,740
26	552	677	697	580	652	2,110	1,870	3,870	4,030	735	1,590	1,620
27	550	677	644	572	646	1,950	2,130	5,240	3,790	696	1,930	1,530
28	546	663	572	586	639	1,780	3,080	7,270	3,670	655	1,570	1,460
29	1,340	676	580	637	630	1,630	3,420	6,790	3,290	637	1,350	1,400
30	1,610	717	578	753	---	1,570	2,760	5,610	3,130	589	1,200	1,330
31	1,110	---	526	752	---	1,730	---	5,120	---	582	1,080	---
TOTAL	18,963	21,592	21,138	17,391	17,596	34,639	77,330	140,760	138,150	39,265	24,199	43,059
MEAN	612	720	682	561	607	1,117	2,578	4,541	4,605	1,267	781	1,435
MAX	1,610	874	805	753	724	2,210	3,540	7,270	7,580	2,990	1,930	2,130
MIN	470	619	526	300	496	606	1,760	2,590	3,130	582	503	813
AC-FT	37,610	42,830	41,930	34,500	34,900	68,710	153,400	279,200	274,000	77,880	48,000	85,410

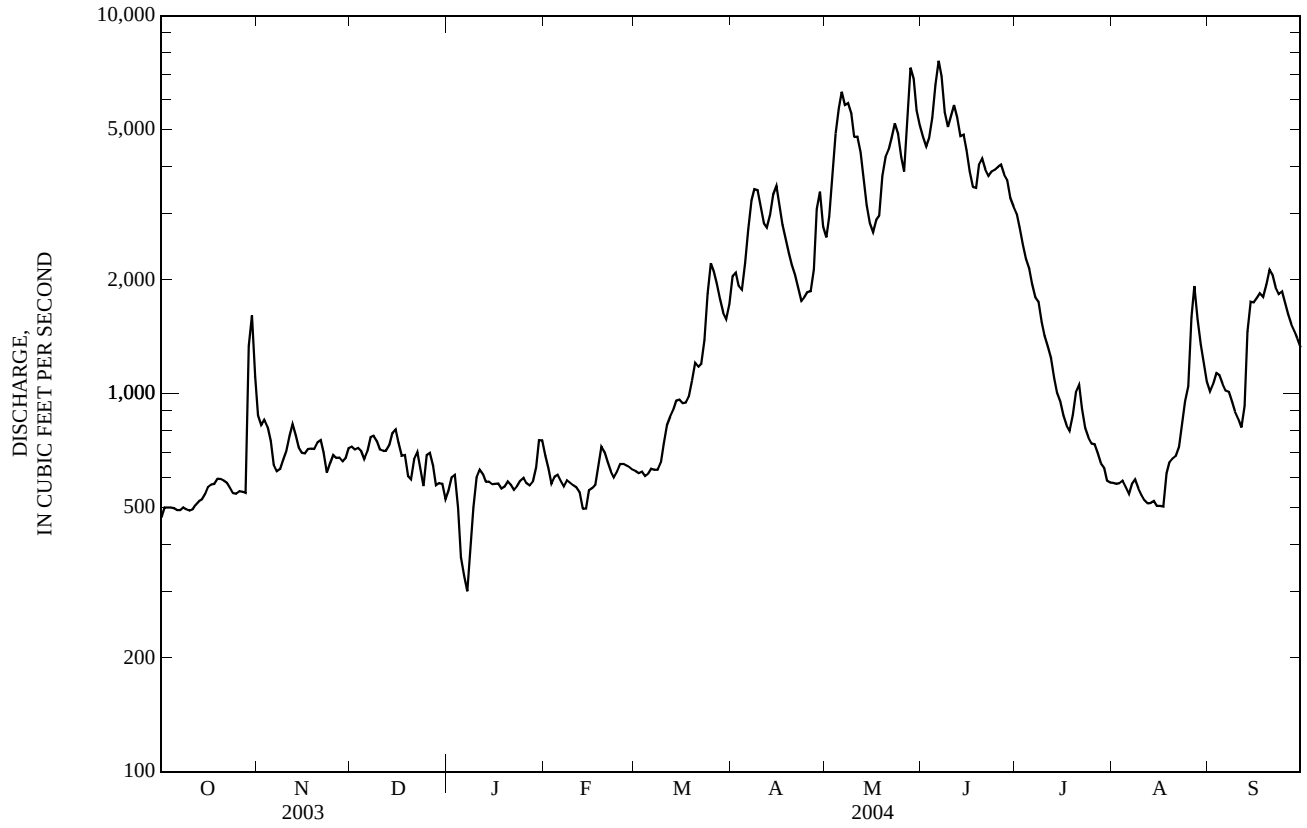
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)*

MEAN	1,181	1,068	961	799	963	1,025	2,371	6,093	8,595	2,126	743	1,024
MAX	3,025	2,019	1,604	1,365	1,795	1,450	3,599	9,886	13,180	4,060	1,288	2,012
(WY)	(1960)	(1960)	(1959)	(1965)	(1963)	(2003)	(1965)	(1958)	(1964)	(1964)	(1965)	(1965)
MIN	566	585	561	561	607	644	1,279	4,321	4,605	935	399	573
(WY)	(1961)	(2003)	(2003)	(2004)	(2004)	(1964)	(1964)	(1960)	(2004)	(1961)	(1961)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004*	
ANNUAL TOTAL	761,030		594,082			
ANNUAL MEAN	2,085		1,623		2,238	
HIGHEST ANNUAL MEAN					3,070	1965
LOWEST ANNUAL MEAN					1,623	2004
HIGHEST DAILY MEAN	18,400	May 31	7,580	Jun 6	19,600	Jun 9, 1964
LOWEST DAILY MEAN	438	Jan 11	300	Jan 7	300	Jan 7, 2004
ANNUAL SEVEN-DAY MINIMUM	481	Sep 26	429	Jan 4	372	Aug 17, 1961
MAXIMUM PEAK FLOW			8,100	Jun 6	a20,300	Jun 9, 1964
MAXIMUM PEAK STAGE			9.91	Jun 6	13.43	Jun 1, 2003
INSTANTANEOUS LOW FLOW					b365	Aug 20, 1961
ANNUAL RUNOFF (AC-FT)	1,510,000		1,178,000		1,621,000	
10 PERCENT EXCEEDS	4,980		4,080		6,030	
50 PERCENT EXCEEDS	750		792		1,020	
90 PERCENT EXCEEDS	546		548		580	

*--During period of record, September 1957 to December 1965, October 2002 to current year.
a--Gage height, 10.82 ft, from graph based on gage readings, datum then in use.
b--Observed.
e--Estimated.

12351200 BITTERROOT RIVER NEAR FLORENCE, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1997 to September 1997, March 2004 through August 2004.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Total nitrogen, wat unf mg/L (62855)
MAR										
15...	1630	962	8.1	107	16.0	6.5	.031	E.001	.05	.91
MAY										
26...	0900	3,850	7.7	69	14.5	10.0	.034	<.002	.08	.16
JUN										
23...	1030	3,910	7.6	57	25.0	13.5	E.011	<.002	.03	.17
AUG										
16...	1500	510	8.1	161	33.0	19.0	.024	<.002	.04	.14

E--Estimated.

12351200 BITTERROOT RIVER NEAR FLORENCE, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Suspnd. sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
MAR 15...	E.003	.019	.6	1.8	75	7	18
MAY 26...	<.006	.017	.8	2.9	44	18	187
JUN 23...	<.006	.017	.5	2.1	64	10	106
AUG 16...	E.003	.006	.6	2.6	86	2	2.8

Date	Time	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)
MAR 15...	1630	42	12.6	2.54	1.14	.3	4.18	49	1.81	<.2
JUN 23...	1030	21	6.45	1.30	.83	.2	2.34	27	.73	<.2

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)
MAR 15...	11.8	3.4	67	.09	174	.3	<2	<.04	<.04	<.8	<.8
JUN 23...	8.2	1.0	37	.05	393	.2	<2	<.04	<.04	<.8	<.8

Date	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
MAR 15...	1.0	1.0	<.08	.08	.30	.35	E.4	<2
JUN 23...	1.1	.9	<.08	.16	.19	.35	.8	E2

E--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT

LOCATION--Lat 46°49'55", long 114°03'11" (NAD 27), in SW¼NW¼NE¼ sec. 1, T.12 N., R.20 W., Missoula County, Hydrologic Unit 17010205, on right bank 40 ft downstream from bridge on U.S. Highway 93, 0.5 mi south of Fort Missoula, and at river mile 5.7.

DRAINAGE AREA.--2,814 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1898 to November 1901, May 1903 to December 1904, July 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,110 ft (NGVD 29). Prior to Jan. 1, 1905, nonrecording gage at site 1.5 mi upstream at different elevation.

REMARKS.--Water-discharge records excellent except those for estimated discharges, which are poor. Some regulation by Painted Rocks Lake (station number 12342000). Diversions for irrigation of about 111,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	521	1,010	825	624	781	714	2,240	3,060	5,720	3,360	678	1,100
2	539	924	813	647	725	708	2,370	3,310	5,310	3,110	668	1,120
3	548	952	815	661	667	703	2,220	4,220	5,390	2,820	668	1,200
4	547	931	799	e530	666	698	2,120	5,460	5,930	2,560	673	1,200
5	547	861	769	e400	685	695	2,390	6,360	7,060	2,410	658	1,150
6	550	765	801	e350	667	712	2,940	7,110	8,140	2,220	633	1,090
7	557	718	875	e320	642	711	3,550	6,720	8,120	2,020	639	1,060
8	567	720	879	e430	666	715	3,880	6,590	6,510	1,970	671	1,020
9	563	749	851	e550	662	736	4,000	6,360	5,870	1,790	649	966
10	557	794	810	e650	654	814	3,700	5,630	6,000	1,620	620	928
11	561	864	799	e700	638	914	3,340	5,470	6,430	1,510	603	889
12	580	925	799	714	623	963	3,180	5,190	6,190	1,420	590	924
13	593	896	807	681	572	996	3,360	4,370	5,490	1,290	585	1,290
14	603	838	857	651	557	1,050	3,800	3,800	5,470	1,170	587	1,700
15	618	801	898	653	595	1,070	4,130	3,410	5,070	1,110	575	1,730
16	643	794	843	662	636	1,060	3,790	3,200	4,530	1,030	571	1,760
17	660	811	788	650	643	1,050	3,340	3,340	4,030	973	568	1,850
18	663	819	769	638	720	1,090	3,060	3,420	3,910	936	647	1,890
19	674	821	700	639	825	1,200	2,820	4,100	4,390	996	703	2,030
20	679	852	648	664	852	1,340	2,620	4,800	4,780	1,120	714	2,170
21	675	863	718	655	790	1,340	2,470	4,980	4,460	1,180	726	2,150
22	664	815	782	620	739	1,320	2,280	5,340	4,240	1,070	748	2,030
23	652	734	730	633	705	1,490	2,120	5,820	4,280	961	851	1,900
24	633	733	650	645	710	1,930	2,100	5,700	4,360	902	970	1,930
25	625	786	722	654	739	2,410	2,190	5,000	4,380	868	1,050	1,840
26	632	780	776	646	749	2,380	2,200	4,510	4,530	848	1,390	1,730
27	638	773	737	636	743	2,220	2,390	5,410	4,270	825	1,980	1,620
28	633	760	659	643	732	2,040	3,320	7,960	4,160	779	1,690	1,560
29	1,040	765	634	680	723	1,880	4,100	7,870	3,740	754	1,460	1,490
30	1,810	808	635	784	---	1,790	3,380	6,740	3,510	713	1,310	1,430
31	1,310	---	582	840	---	1,890	---	6,060	---	684	1,180	---
TOTAL	21,082	24,662	23,770	19,250	20,106	38,629	89,400	161,310	156,270	45,019	26,055	44,747
MEAN	680	822	767	621	693	1,246	2,980	5,204	5,209	1,452	840	1,492
MAX	1,810	1,010	898	840	852	2,410	4,130	7,960	8,140	3,360	1,980	2,170
MIN	521	718	582	320	557	695	2,100	3,060	3,510	684	568	889
AC-FT	41,820	48,920	47,150	38,180	39,880	76,620	177,300	320,000	310,000	89,300	51,680	88,760

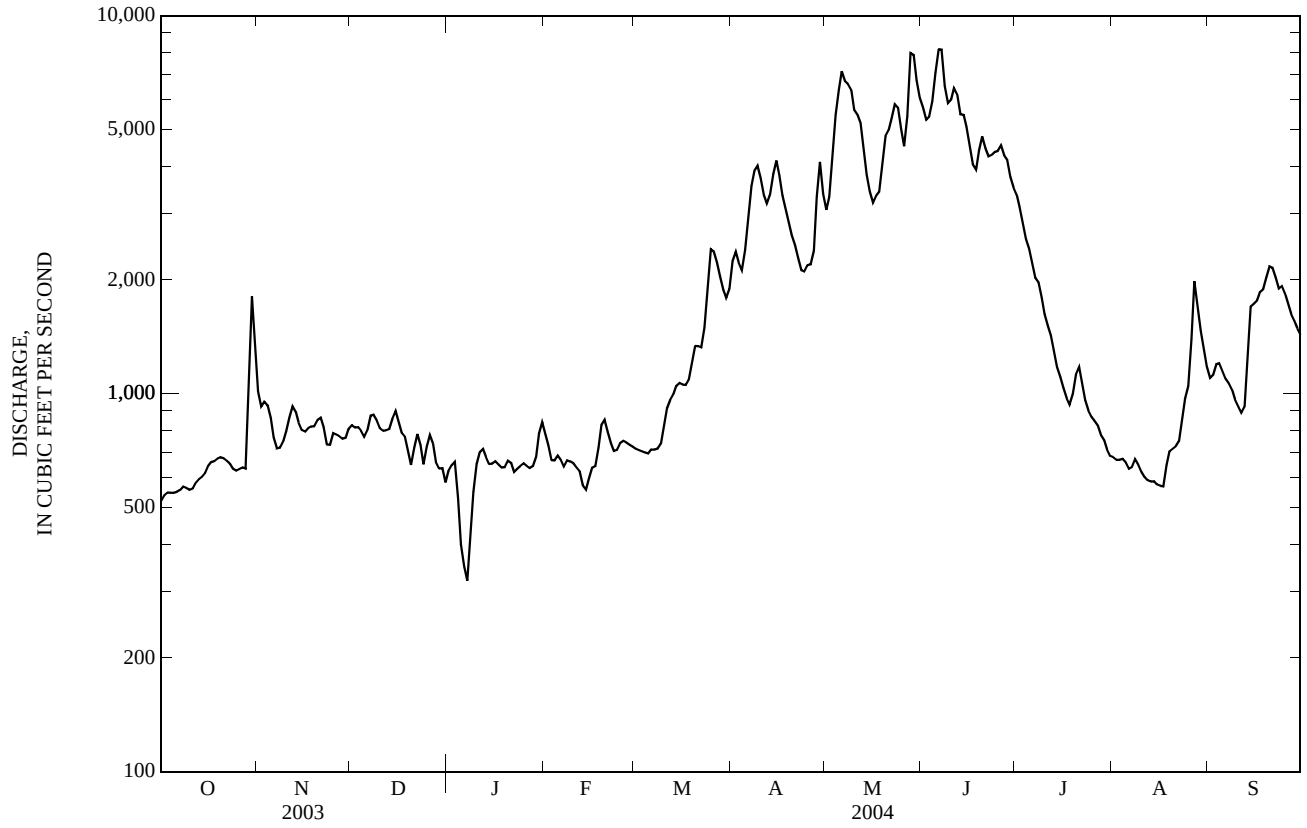
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)*

MEAN	987	1,056	975	880	986	1,274	2,815	6,659	8,367	3,096	1,019	904
MAX	1,570	2,211	3,141	1,791	3,030	2,021	4,944	13,430	21,880	14,510	3,412	1,623
(WY)	(1904)	(1996)	(1996)	(1997)	(1996)	(1997)	(1996)	(1997)	(1899)	(1899)	(1899)	(1899)
MIN	568	614	530	542	477	801	1,336	4,039	2,397	980	503	455
(WY)	(1905)	(1905)	(1905)	(1993)	(1994)	(2002)	(2001)	(1990)	(1992)	(1994)	(2000)	(1904)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004*	
ANNUAL TOTAL	872,309		670,300			
ANNUAL MEAN	2,390		1,831		2,412	
HIGHEST ANNUAL MEAN					4,864	1899
LOWEST ANNUAL MEAN					1,366	1992
HIGHEST DAILY MEAN	21,300	Jun 1	8,140	Jun 6	37,400	Jun 20, 1899
LOWEST DAILY MEAN	465	Jan 11	320	Jan 7	300	Feb 9, 1994
ANNUAL SEVEN-DAY MINIMUM	528	Sep 26	461	Jan 4	370	Sep 16, 1904
MAXIMUM PEAK FLOW			8,830	Jun 7	a38,300	Jun 20, 1899
MAXIMUM PEAK STAGE			7.92	Jun 7	13.11	May 18, 1997
INSTANTANEOUS LOW FLOW			315	Jan 6	300	Feb 9, 1994
ANNUAL RUNOFF (AC-FT)	1,730,000		1,330,000		1,748,000	
10 PERCENT EXCEEDS	5,910		4,600		6,120	
50 PERCENT EXCEEDS	838		892		1,100	
90 PERCENT EXCEEDS	609		625		636	

*--During period of operation (July 1898 to November 1901, May 1903 to December 1904, and July 1989 to current year).
a--Observed gage height, 11.55 ft, site and datum then in use.
e--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: November 1999 to current year (only seasonal records for 2003).

REMARKS.--Daily water temperature record rated good. Missing daily temperature data for Dec. 7 to Feb. 4 due to buried probe.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE : Maximum, 24.5°C, Aug. 1, 2000; July 20, 22 and Aug. 1, 2003; minimum, 0.0°C, many days during winter months.

EXTREMS FOR CURRENT YEAR.--
WATER TEMPERATURE : Maximum, 24.0°C, July 16; minimum, not determined, but probably 0.0°C, during periods of ice cover.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instan-taneous dis-charge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unf mg/L (62855)
MAR									
16...	0800	1,060	8.2	115	9.0	5.5	.043	E.001	.27
MAY									
25...	0725	5,040	7.7	68	6.5	9.5	.025	<.002	.16
JUN									
24...	0700	4,340	7.6	59	17.0	16.0	E.012	<.002	.19
AUG									
17...	0730	566	7.9	186	17.0	16.0	.072	E.001	.18

E--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
MAR							
16...	E.004	.034	1.2	1.9	81	14	40
MAY							
25...	<.006	.020	.7	3.2	43	25	340
JUN							
24...	E.003	.017	.5	2.2	41	13	152
AUG							
17...	<.006	.005	.5	2.5	90	2	3.1

Date	Time	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
MAR													
16...	0800	48	13.9	3.18	1.20	.3	4.51	17	54	2.21	<.2	12.0	3.6
JUN													
24...	0700	24	7.07	1.51	.84	.2	2.44	18	28	.79	<.2	8.3	1.1

Date	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)
MAR											
16...	73	.10	210	.3	<2	E.03	E.03	<.8	<.8	3.1	13.7
JUN											
24...	39	.05	458	.3	<2	<.04	<.04	E.6	<.8	.9	1.0

Date	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
MAR						
16...	.16	.97	.39	.56	.9	2
JUN						
24...	E.04	.14	.19	.21	.7	E1

E--Estimated.

12352500 BITTERROOT RIVER NEAR MISSOULA, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.0	12.0	13.5	3.5	1.5	2.5	4.5	4.0	4.5	---	---	---
2	15.0	12.0	13.5	3.5	2.5	3.0	5.0	4.5	5.0	---	---	---
3	15.0	11.5	13.0	4.0	3.0	3.5	6.0	4.5	5.0	---	---	---
4	15.0	11.5	13.0	4.0	2.5	3.0	4.5	3.0	3.5	---	---	---
5	15.0	11.5	13.0	3.5	1.5	2.5	4.0	3.0	3.5	---	---	---
6	15.5	12.5	13.5	2.5	1.0	2.0	4.5	3.5	4.0	---	---	---
7	14.0	12.5	13.0	2.5	0.5	1.5	5.5	4.0	---	---	---	---
8	14.5	12.0	13.0	2.5	1.0	1.5	---	---	---	---	---	---
9	13.0	12.0	12.5	3.0	1.5	2.5	---	---	---	---	---	---
10	12.5	10.5	11.5	4.5	3.0	4.0	---	---	---	---	---	---
11	11.0	9.5	10.0	5.5	4.5	5.0	---	---	---	---	---	---
12	11.0	9.5	10.5	5.5	4.0	5.0	---	---	---	---	---	---
13	11.5	10.0	10.5	5.0	4.0	4.5	---	---	---	---	---	---
14	10.5	9.0	9.5	4.5	3.5	4.0	---	---	---	---	---	---
15	10.0	9.0	9.5	4.5	3.5	4.0	---	---	---	---	---	---
16	10.0	9.0	9.5	4.5	3.5	4.0	---	---	---	---	---	---
17	12.5	9.0	10.5	5.5	4.0	4.5	---	---	---	---	---	---
18	12.5	10.0	11.5	6.0	4.5	5.5	---	---	---	---	---	---
19	12.5	10.0	11.5	7.0	6.0	6.5	---	---	---	---	---	---
20	13.0	10.5	11.5	6.0	4.5	5.0	---	---	---	---	---	---
21	14.5	11.5	13.0	5.0	3.0	4.0	---	---	---	---	---	---
22	13.5	11.5	12.5	3.0	1.5	2.5	---	---	---	---	---	---
23	12.5	10.5	11.5	2.5	1.5	1.5	---	---	---	---	---	---
24	10.5	9.0	9.5	3.0	1.5	2.0	---	---	---	---	---	---
25	9.5	7.5	8.5	3.5	2.0	2.5	---	---	---	---	---	---
26	9.5	7.0	8.5	3.5	2.5	3.0	---	---	---	---	---	---
27	9.0	8.0	8.5	4.0	2.5	3.0	---	---	---	---	---	---
28	10.5	8.5	9.5	4.0	2.5	3.5	---	---	---	---	---	---
29	10.5	6.5	8.5	4.5	3.5	4.0	---	---	---	---	---	---
30	6.5	3.5	5.0	5.0	4.5	4.5	---	---	---	---	---	---
31	3.5	2.0	2.5	---	---	---	---	---	---	---	---	---
MONTH	15.5	2.0	10.5	7.0	0.5	3.5	6.0	3.0	4.0	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	6.5	4.0	5.0	9.5	7.5	8.0	12.5	9.5	11.0
2	---	---	---	5.5	4.5	5.0	8.0	6.0	7.0	13.0	11.0	12.0
3	---	---	---	5.5	3.5	4.5	9.5	6.5	8.0	12.5	11.5	12.0
4	3.0	---	---	6.0	4.0	5.0	11.0	9.0	9.5	12.0	10.5	11.5
5	3.5	2.5	3.0	6.0	4.0	5.0	10.5	8.5	10.0	12.0	10.5	11.5
6	2.5	1.0	2.0	5.5	3.0	4.5	11.5	9.5	10.5	12.0	10.0	11.0
7	3.0	1.5	2.0	5.5	4.0	4.5	10.5	8.5	9.5	12.0	10.0	11.0
8	3.5	2.5	3.0	9.0	5.0	7.0	9.5	8.5	9.0	12.0	10.5	11.0
9	4.5	2.5	3.5	7.5	6.5	7.0	9.0	7.5	8.0	11.5	9.5	10.5
10	3.5	3.0	3.0	9.0	5.5	7.0	9.0	7.0	8.0	11.0	9.0	9.5
11	4.5	2.0	3.0	8.0	6.0	7.0	10.0	7.5	8.5	9.0	8.0	8.5
12	3.5	1.5	2.5	8.5	5.5	7.0	11.0	8.5	9.5	8.5	7.5	8.0
13	3.0	0.5	2.0	8.0	6.0	7.0	10.5	9.0	10.0	9.0	7.5	8.5
14	2.5	1.0	1.5	7.0	6.0	6.5	10.5	9.0	9.5	11.0	8.0	9.5
15	3.0	1.5	2.0	8.0	5.0	6.5	9.5	8.0	8.5	11.5	9.5	10.5
16	3.5	1.5	2.5	9.0	7.0	7.5	9.0	7.0	8.0	11.0	10.5	10.5
17	3.5	3.0	3.5	8.0	6.5	7.5	8.5	7.5	8.0	12.5	9.5	11.0
18	4.5	3.0	3.5	9.0	6.0	7.5	9.5	7.0	8.5	12.0	10.0	11.0
19	5.0	3.5	4.0	8.5	6.5	7.5	9.5	8.0	9.0	11.5	9.5	10.5
20	4.5	3.5	3.5	8.0	5.5	7.0	9.5	8.0	8.5	13.0	10.5	11.5
21	5.0	3.0	4.0	9.5	6.0	7.5	10.5	7.5	9.0	13.0	12.0	12.5
22	5.0	2.5	3.5	10.5	7.5	9.0	11.5	8.0	9.5	12.0	11.0	11.5
23	5.5	2.5	3.5	11.0	8.5	9.5	12.5	9.0	10.5	11.0	9.5	10.0
24	5.0	3.0	4.0	9.5	8.0	9.0	13.0	10.0	11.5	11.0	8.5	9.5
25	6.0	4.0	5.0	8.5	7.0	8.0	12.5	9.5	11.0	11.5	9.5	10.5
26	6.5	5.0	5.5	8.5	7.5	8.0	13.5	10.0	12.0	12.0	11.0	11.5
27	6.5	4.5	5.5	7.5	6.0	6.5	13.5	11.0	12.5	12.5	11.0	11.5
28	6.5	4.0	5.0	9.0	6.0	7.5	12.5	8.5	10.5	12.5	10.5	11.0
29	6.0	4.0	5.0	9.5	6.5	8.0	9.5	6.5	8.0	10.5	9.0	9.5
30	---	---	---	11.0	7.5	9.0	11.5	8.0	9.5	11.0	8.5	9.5
31	---	---	---	10.0	8.5	9.5	---	---	---	12.5	10.5	11.0
MONTH	6.5	0.5	3.5	11.0	3.0	7.0	13.5	6.0	9.5	13.0	7.5	10.5

12352500 BITTERROOT RIVER NEAR MISSOULA, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

12353000 CLARK FORK BELOW MISSOULA, MT

LOCATION.--Lat 46°52'09", long 114°07'33" (NAD 27), in NW¼NE¼SE¼ sec.21, T.13 N., R.20 W., Missoula County, Hydrologic Unit 17010204, on right bank 1.0 mi downstream from Bitterroot River, 4.5 mi west of Missoula, and at river mile 349.5.

DRAINAGE AREA.--9,003 mi^2.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 1042: 1931. WSP 1246: Drainage area. WSP 1316: 1932(M), 1935(M), 1946(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,083.88 ft (NGVD 29) (levels by U.S. Army Corps of Engineers).

REMARKS.--Records excellent. Some diurnal fluctuation at low flow caused by powerplant at Milltown 14.9 mi upstream. Diversions for irrigation of about 235,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,520	2,140	2,090	1,390	1,990	1,940	4,830	7,290	11,600	6,510	1,810	2,300
2	1,560	2,070	2,070	1,500	1,870	1,920	5,150	7,470	10,800	6,090	1,780	2,300
3	1,580	2,170	2,080	1,620	1,780	1,900	5,020	8,740	10,700	5,590	1,760	2,410
4	1,580	2,160	2,080	1,360	1,760	1,890	4,860	10,600	11,200	5,240	1,760	2,370
5	1,610	2,050	2,030	1,000	1,810	1,880	5,190	12,100	12,800	5,090	1,760	2,350
6	1,620	1,810	2,060	868	1,790	1,880	5,940	13,400	14,500	4,860	1,730	2,270
7	1,620	1,740	2,140	796	1,750	1,890	6,890	13,200	14,900	4,560	1,750	2,230
8	1,620	1,760	2,160	1,030	1,770	1,910	7,670	13,000	12,700	4,450	1,770	2,170
9	1,600	1,910	2,130	1,360	1,780	2,590	8,160	12,900	11,500	4,130	1,740	2,110
10	1,600	2,140	2,030	1,650	1,790	3,110	7,910	11,900	11,400	3,900	1,680	2,070
11	1,610	2,300	1,970	1,790	1,750	3,450	7,370	11,400	12,800	3,730	1,600	1,980
12	1,670	2,340	2,030	1,820	1,720	3,170	7,080	10,600	12,600	3,610	1,570	2,040
13	1,710	2,200	2,050	1,770	1,590	3,070	7,260	9,260	11,300	3,360	1,530	2,490
14	1,710	2,130	2,070	1,740	1,410	3,230	8,060	8,210	10,800	3,160	1,490	3,180
15	1,770	2,020	2,130	1,750	1,530	3,020	8,740	7,450	10,000	2,980	1,440	3,210
16	1,810	2,020	2,040	1,770	1,760	2,940	8,420	6,930	9,170	2,840	1,390	3,220
17	1,840	2,060	1,920	1,770	1,750	2,930	7,790	7,020	8,300	2,780	1,370	3,260
18	1,810	2,110	1,920	1,760	1,840	3,030	7,220	7,050	7,900	2,660	1,460	3,340
19	1,810	2,090	1,750	1,740	1,980	3,370	6,720	7,950	8,260	2,680	1,520	3,560
20	1,770	2,090	1,530	1,800	2,060	3,630	6,300	8,980	8,650	2,800	1,620	3,880
21	1,800	2,180	1,720	1,830	2,020	3,480	6,010	9,180	8,080	2,870	1,700	4,050
22	1,740	2,090	2,000	1,800	1,940	3,340	5,670	10,000	7,720	2,700	1,650	3,870
23	1,740	1,890	1,820	1,800	1,870	3,560	5,280	11,300	7,630	2,500	1,890	3,660
24	1,740	1,800	1,580	1,820	1,860	4,120	5,250	11,500	7,590	2,370	2,150	3,710
25	1,730	1,990	1,820	1,850	1,920	4,810	5,410	10,400	7,600	2,290	2,320	3,630
26	1,740	2,000	2,010	1,810	2,000	4,910	5,440	9,560	7,790	2,230	2,630	3,480
27	1,760	2,000	1,880	1,780	2,030	4,800	5,820	10,300	7,620	2,160	3,320	3,330
28	1,760	1,960	1,690	1,760	2,010	4,580	7,330	13,500	7,630	2,080	3,080	3,210
29	2,210	1,950	1,560	1,850	1,950	4,340	8,740	14,100	7,200	1,980	2,820	3,120
30	3,110	2,130	1,500	1,990	---	4,200	7,920	13,200	6,850	1,900	2,600	3,070
31	2,640	---	1,340	2,050	---	4,260	---	12,200	---	1,840	2,420	---
TOTAL	55,390	61,300	59,200	50,624	53,080	99,150	199,450	320,690	297,590	105,940	59,110	87,870
MEAN	1,787	2,043	1,910	1,633	1,830	3,198	6,648	10,340	9,920	3,417	1,907	2,929
MAX	3,110	2,340	2,160	2,050	2,060	4,910	8,740	14,100	14,900	6,510	3,320	4,050
MIN	1,520	1,740	1,340	796	1,410	1,880	4,830	6,930	6,850	1,840	1,370	1,980
AC-FT	109,900	121,600	117,400	100,400	105,300	196,700	395,600	636,100	590,300	210,100	117,200	174,300

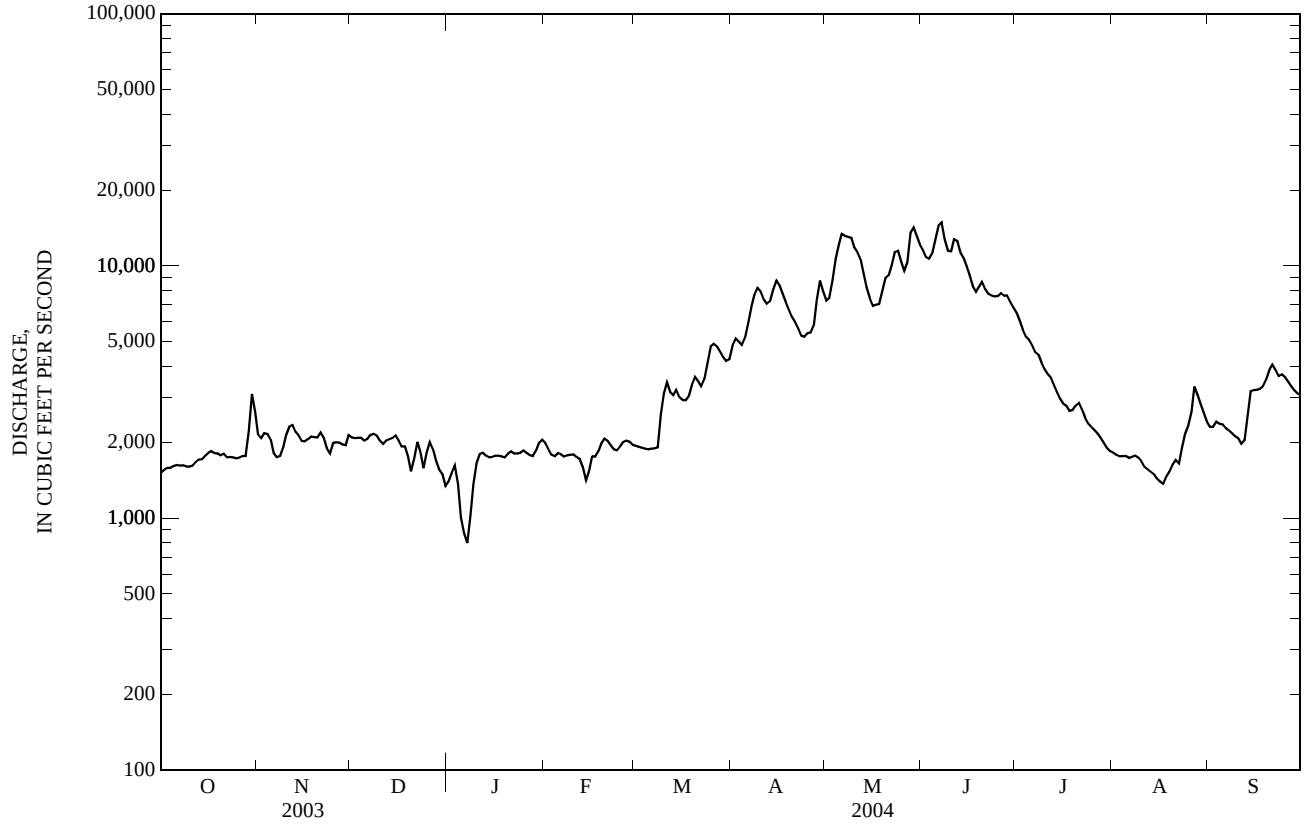
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2004, BY WATER YEAR (WY)

MEAN	2,703	2,719	2,465	2,236	2,485	3,098	6,404	14,730	16,640	5,798	2,291	2,290
MAX	6,617	5,110	6,064	4,401	6,697	7,012	16,500	30,440	33,970	16,320	5,530	5,160
(WY)	(1960)	(1960)	(1996)	(1934)	(1996)	(1972)	(1934)	(1997)	(1972)	(1975)	(1975)	(1965)
MIN	1,393	1,471	1,414	871	1,108	1,743	2,302	5,113	4,619	1,361	810	909
(WY)	(1938)	(1938)	(1988)	(1937)	(1933)	(1937)	(1941)	(1941)	(1987)	(1931)	(1931)	(1937)

12353000 CLARK FORK BELOW MISSOULA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1930 - 2004	
ANNUAL TOTAL	1,848,860		1,449,394			
ANNUAL MEAN	5,065		3,960		5,324	
HIGHEST ANNUAL MEAN					8,832	1976
LOWEST ANNUAL MEAN					2,582	1937
HIGHEST DAILY MEAN	38,300	Jun 1	14,900	Jun 7	54,100	May 18, 1997
LOWEST DAILY MEAN	1,190	Jan 11	796	Jan 7	580	Jan 19, 1933
ANNUAL SEVEN-DAY MINIMUM	1,510	Jan 7	1,150	Jan 3	660	Dec 8, 1932
MAXIMUM PEAK FLOW			15,600	Jun 7	55,100	May 18, 1997
MAXIMUM PEAK STAGE			6.25	Jun 7	12.18	May 18, 1997
INSTANTANEOUS LOW FLOW			a707	Jan 7	b388	Jan 18, 1933
ANNUAL RUNOFF (AC-FT)	3,667,000		2,875,000		3,857,000	
10 PERCENT EXCEEDS	12,300		9,170		13,200	
50 PERCENT EXCEEDS	2,110		2,160		2,780	
90 PERCENT EXCEEDS	1,590		1,620		1,620	

a--Gage height, 0.14 ft, result of freezeup.
b--Gage height, 0.58 ft, result of freezeup.



12354000 ST. REGIS RIVER NEAR ST. REGIS, MT

LOCATION.--Lat 47°17'49", long 115°07'18", (NAD 27) near center of NW¼NE¼ sec.26, T.18 N., R.28 W., Mineral County, on left bank 50 ft downstream from road bridge, 500 ft upstream from Little Joe Creek, 1.2 mi west of St. Regis, and at river mile 1.7.

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--September 1910 to September 1917 (no winter records), annual maximum, water year 1948, published in WSP 1080, September 1958 to September 1975, February 2002 to current year. Monthly discharge only for some periods, published in WSP 1316, 1736.

REVISED RECORDS.--WSP 1246: water year 1912; WSP 1316: drainage area, 1911.

GAGE.--Water-stage recorder. Elevation of gage is 2,645.00 ft (NGVD 29). September 1910 to September 1917, non-recording gage at site 2 mi upstream at different elevation.

REMARKS.--Records good. Minor diversions for irrigation of hay meadows above station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on or about Dec. 20, 1933, reached a stage of about 14.5 ft, from information by local residents (discharge unknown). Flood of May 19, 1954, reached a discharge of about 11,000 ft^3/s, gage height, 9.4 ft, from rating curve extended above 5,100 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	86	125	e75	149	145	807	1,030	1,130	397	145	136
2	71	90	119	e73	135	146	761	1,130	1,080	366	140	138
3	70	91	122	e72	128	143	766	1,330	1,060	341	146	138
4	69	89	132	e72	124	143	837	1,450	1,080	328	152	134
5	68	82	124	e68	120	142	1,000	1,450	1,110	325	143	129
6	68	e68	145	e64	113	141	1,120	1,360	1,170	303	138	123
7	67	e70	171	e72	117	137	1,220	1,260	1,060	287	151	120
8	68	73	148	e75	112	140	1,290	1,270	967	276	148	117
9	71	74	138	e80	110	168	1,240	1,230	897	264	138	115
10	71	80	131	91	108	198	1,150	1,160	863	253	133	114
11	70	109	125	91	107	223	1,100	1,200	842	248	130	113
12	77	118	120	88	98	238	1,100	1,080	787	235	126	121
13	93	102	120	87	92	272	1,180	972	759	227	123	122
14	96	96	124	87	95	283	1,420	898	734	218	120	130
15	89	92	117	90	103	288	1,450	846	685	211	117	147
16	98	91	111	93	108	318	1,280	864	638	204	115	174
17	115	95	112	92	109	350	1,130	896	603	198	114	163
18	102	118	108	89	134	444	1,020	911	584	196	115	158
19	92	212	97	88	167	691	937	932	566	201	122	168
20	87	188	83	88	156	648	889	1,030	543	204	123	153
21	83	149	101	86	147	580	844	1,130	519	192	123	146
22	81	126	106	85	142	581	797	1,320	502	184	117	140
23	81	113	101	88	140	677	782	1,350	487	179	127	136
24	81	112	98	89	148	793	822	1,250	468	173	137	133
25	80	109	99	89	145	779	816	1,160	463	169	176	130
26	79	107	100	87	145	733	846	1,160	486	163	356	126
27	78	102	97	87	145	699	970	1,320	468	159	234	123
28	82	99	93	90	146	662	1,160	1,350	420	157	189	120
29	156	115	86	100	146	633	1,100	1,300	469	154	167	117
30	123	133	76	154	---	658	1,040	1,200	408	150	152	115
31	101	---	76	174	---	777	---	1,210	---	147	141	---
TOTAL	2,637	3,189	3,505	2,764	3,689	12,830	30,874	36,049	21,848	7,109	4,558	3,999
MEAN	85.1	106	113	89.2	127	414	1,029	1,163	728	229	147	133
MAX	156	212	171	174	167	793	1,450	1,450	1,170	397	356	174
MIN	67	68	76	64	92	137	761	846	408	147	114	113
AC-FT	5,230	6,330	6,950	5,480	7,320	25,450	61,240	71,500	43,340	14,100	9,040	7,930
CFSM	0.28	0.35	0.37	0.29	0.42	1.37	3.40	3.84	2.40	0.76	0.49	0.44
IN.	0.32	0.39	0.43	0.34	0.45	1.58	3.79	4.43	2.68	0.87	0.56	0.49

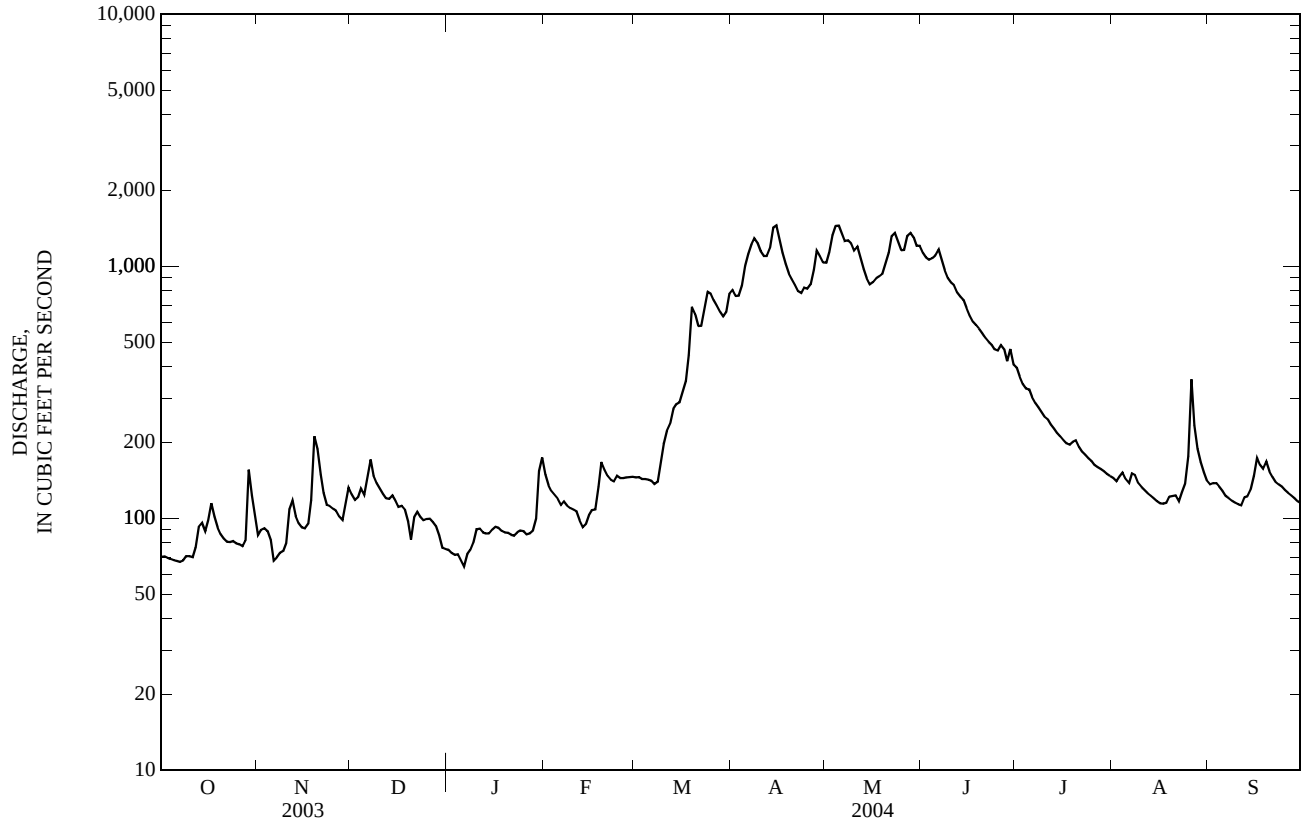
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2004, BY WATER YEAR (WY)*

MEAN	138	223	204	264	294	415	1,234	2,136	1,505	391	162	130
MAX	350	590	555	1,363	759	1,366	2,057	4,700	3,367	1,150	313	204
(WY)	(1960)	(1915)	(1959)	(1974)	(1971)	(1972)	(1916)	(1917)	(1974)	(1916)	(1916)	(1914)
MIN	85.1	101	92.4	89.2	86.6	94.2	349	671	388	155	83.1	77.3
(WY)	(2004)	(1962)	(1964)	(2004)	(1964)	(1964)	(1975)	(1915)	(1915)	(1973)	(1973)	(1973)

12354000 ST. REGIS RIVER NEAR ST. REGIS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1910 - 2004*	
ANNUAL TOTAL	142,872		133,051			
ANNUAL MEAN	391		364		559	
HIGHEST ANNUAL MEAN					938	1974
LOWEST ANNUAL MEAN					256	1973
HIGHEST DAILY MEAN	1,820	May 26	1,450	Apr 15	8,500	Jan 16, 1974
LOWEST DAILY MEAN	67	Oct 7	64	Jan 6	45	Dec 11, 1961
ANNUAL SEVEN-DAY MINIMUM	69	Oct 2	69	Oct 2	59	Dec 5, 1972
MAXIMUM PEAK FLOW			a1,510	Apr 14	b9,640	Jan 16, 1974
MAXIMUM PEAK STAGE			5.39	Apr 14	7.54	Apr 14, 2002
INSTANTANEOUS LOW FLOW					c41	Dec 30, 2001
ANNUAL RUNOFF (AC-FT)	283,400		263,900		404,900	
ANNUAL RUNOFF (CFSM)	1.29		1.20		1.84	
ANNUAL RUNOFF (INCHES)	17.54		16.33		25.06	
10 PERCENT EXCEEDS	1,100		1,100		1,540	
50 PERCENT EXCEEDS	145		145		211	
90 PERCENT EXCEEDS	78		83		97	

*--During periods of operation [September 1910 to September 1917 (no winter records), September 1958 to September 1975, February 2002 to current year).
a--Also occurred May 5.
b--Gage height, 7.38 ft.
c--Result of freezeup.
e--Estimated.



12354500 CLARK FORK AT ST. REGIS, MT

LOCATION.--Lat 47°18'07", long 115°05'11" (NAD 27), in NW¼SE¼SW¼ sec.19, T.18 N., R.27 W., Mineral County, Hydrologic Unit 17010204, on left bank at St. Regis, 0.4 mi downstream from St. Regis River, and at river mile 270.3.

DRAINAGE AREA.--10,709 mi^2.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,600.37 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Nov. 29, 1933, nonrecording gage at same site and elevation.

REMARKS.--Records good. Diversions for irrigation of about 244,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,980	3,120	2,720	e1,800	2,630	2,550	6,230	10,600	16,500	8,440	2,590	3,160
2	1,990	2,730	2,690	e1,850	2,530	2,530	6,750	10,500	15,500	8,020	2,530	3,080
3	2,030	2,670	2,690	e1,900	2,410	2,510	6,900	11,600	14,900	7,520	2,490	3,060
4	2,050	2,760	2,720	e1,800	2,310	2,490	6,820	13,500	15,000	7,030	2,480	3,140
5	2,050	2,700	2,690	1,490	2,280	2,480	7,050	15,600	16,000	6,720	2,450	3,090
6	2,080	2,550	2,700	826	2,310	2,470	7,830	16,800	18,100	6,490	2,430	3,040
7	2,080	2,330	2,780	970	2,290	2,460	8,910	17,400	19,200	6,190	2,430	2,960
8	2,080	2,290	2,810	1,130	2,250	2,460	10,000	17,000	17,700	5,900	2,430	2,900
9	2,090	2,320	2,800	1,420	2,260	2,560	10,700	17,000	15,800	5,730	2,420	2,840
10	2,070	2,450	2,760	1,790	2,270	3,370	10,800	16,300	14,800	5,360	2,380	2,780
11	2,070	2,750	2,650	2,190	2,260	3,950	10,300	15,400	15,200	5,120	2,310	2,730
12	2,100	2,930	2,590	2,420	2,210	4,260	9,850	14,700	15,900	4,930	2,220	2,680
13	2,170	2,890	2,640	2,410	2,160	4,000	9,910	13,200	15,000	4,750	2,160	2,770
14	2,220	2,770	2,690	2,390	2,050	4,060	10,800	11,800	13,900	4,520	2,120	3,220
15	2,230	2,690	2,700	2,320	1,900	4,140	11,800	10,700	13,300	4,240	2,070	3,880
16	2,300	2,590	2,720	2,350	2,000	3,970	11,800	10,100	12,400	4,030	2,010	4,020
17	2,360	2,590	2,640	2,350	2,240	3,970	11,000	9,860	11,400	3,860	1,990	4,040
18	2,380	2,650	2,520	2,360	2,360	4,090	10,200	9,970	10,600	3,740	1,980	4,150
19	2,330	2,810	2,470	2,360	2,490	4,570	9,510	10,200	10,400	3,730	2,070	4,310
20	2,320	2,800	2,300	2,370	2,590	4,970	9,000	11,500	10,800	3,740	2,120	4,470
21	2,290	2,750	2,130	2,450	2,660	5,000	8,520	12,500	10,700	3,770	2,190	4,790
22	2,300	2,780	2,290	2,440	2,600	4,830	8,150	13,600	10,100	3,780	2,250	4,870
23	2,240	2,660	2,530	2,400	2,510	4,880	7,800	15,000	9,770	3,580	2,310	4,690
24	2,260	2,490	2,360	2,380	2,460	5,400	7,540	15,800	9,680	3,370	2,560	4,540
25	2,250	2,410	2,160	2,360	2,450	6,090	7,590	15,000	9,570	3,220	2,860	4,550
26	2,240	2,570	2,360	2,360	2,520	6,600	7,750	14,000	9,660	3,120	3,340	4,440
27	2,250	2,570	2,530	2,310	2,600	6,570	8,110	14,300	9,680	3,030	3,620	4,290
28	2,280	2,540	2,420	2,270	2,620	6,380	9,340	17,000	9,370	2,950	4,040	4,130
29	2,460	2,540	2,230	2,270	2,600	6,090	11,000	19,000	9,360	2,850	3,820	4,010
30	2,830	2,570	2,050	2,440	---	5,900	11,300	18,500	8,770	2,770	3,570	3,920
31	3,530	---	e1,900	2,620	---	5,930	---	17,400	---	2,660	3,350	---
TOTAL	69,910	79,270	78,240	64,796	68,820	131,530	273,260	435,830	389,060	145,160	79,590	110,550
MEAN	2,255	2,642	2,524	2,090	2,373	4,243	9,109	14,060	12,970	4,683	2,567	3,685
MAX	3,530	3,120	2,810	2,620	2,660	6,600	11,800	19,000	19,200	8,440	4,040	4,870
MIN	1,980	2,290	1,900	826	1,900	2,460	6,230	9,860	8,770	2,660	1,980	2,680
MED	2,240	2,650	2,640	2,350	2,360	4,090	9,170	14,300	12,800	4,030	2,430	3,900
AC-FT	138,700	157,200	155,200	128,500	136,500	260,900	542,000	864,500	771,700	287,900	157,900	219,300
CFSM	0.21	0.25	0.24	0.20	0.22	0.40	0.85	1.31	1.21	0.44	0.24	0.34
IN.	0.24	0.28	0.27	0.23	0.24	0.46	0.95	1.51	1.35	0.50	0.28	0.38

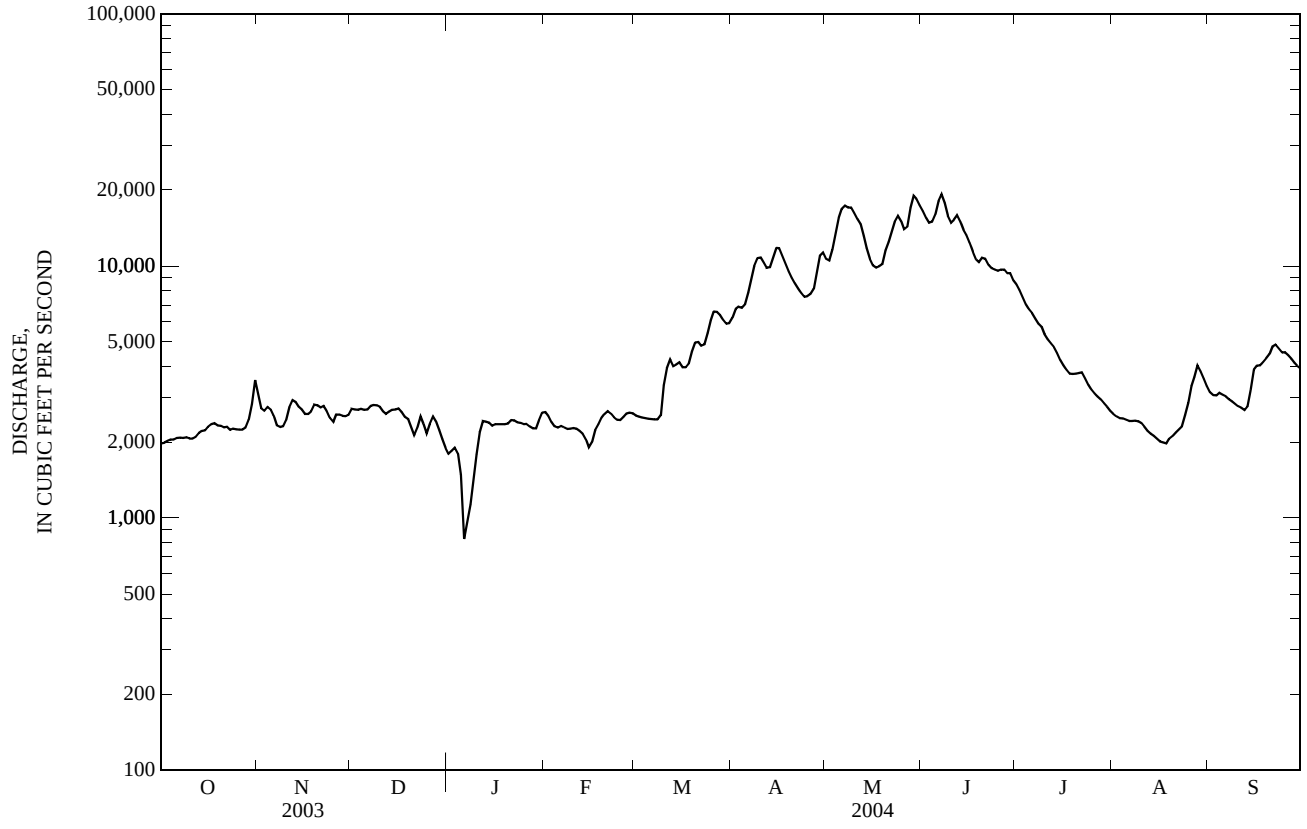
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2004, BY WATER YEAR (WY)*

MEAN	3,390	3,547	3,424	3,099	3,460	4,294	9,248	20,100	21,400	7,616	3,139	2,980
MAX	8,042	7,047	10,710	8,520	10,660	11,490	24,880	42,140	42,410	19,460	6,747	6,252
(WY)	(1960)	(1934)	(1934)	(1934)	(1996)	(1972)	(1934)	(1997)	(1972)	(1975)	(1975)	(1965)
MIN	1,854	1,942	1,909	1,474	1,592	2,199	3,333	7,190	6,021	1,998	1,454	1,351
(WY)	(1938)	(1932)	(1937)	(1937)	(1936)	(1937)	(1937)	(1941)	(1987)	(1931)	(1931)	(1937)

12354500 CLARK FORK AT ST. REGIS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1930 - 2004*	
ANNUAL TOTAL	2,388,870		1,926,016			
ANNUAL MEAN	6,545		5,262		7,146	
HIGHEST ANNUAL MEAN					11,560	1997
LOWEST ANNUAL MEAN					3,420	1941
HIGHEST DAILY MEAN	43,700	Jun 1	19,200	Jun 7	68,500	May 18, 1997
LOWEST DAILY MEAN	1,800	Jan 12	826	Jan 6	800	Feb 3, 1989
ANNUAL SEVEN-DAY MINIMUM	1,990	Jan 8	1,350	Jan 4	1,130	Jan 31, 1936
MAXIMUM PEAK FLOW			19,600	Jun 7	b68,900	May 18, 1997
MAXIMUM PEAK STAGE			11.42	Jun 7	20.27	May 18, 1997
INSTANTANEOUS LOW FLOW			a702	Jan 6	a702	Jan 6, 2004
ANNUAL RUNOFF (AC-FT)	4,738,000		3,820,000		5,177,000	
ANNUAL RUNOFF (CFSM)	0.611		0.491		0.667	
ANNUAL RUNOFF (INCHES)	8.30		6.69		9.07	
10 PERCENT EXCEEDS	15,600		12,400		17,700	
50 PERCENT EXCEEDS	2,800		2,800		3,670	
90 PERCENT EXCEEDS	2,080		2,160		2,200	

*--Statistics not computed prior to 1930 because the 1924-29 period of record was estimated.
a--Gage height, 3.58 ft, result of upstream freezeup.
b--Also May 24, 1948, gage height, 19.96 ft.
e--Estimated.



12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA

LOCATION.--Lat 49°00'05", long 114°28'34" (NAD 27), Hydrologic Unit 17010206, on left bank 200 ft north of international boundary at Flathead, British Columbia, 1.6 mi upstream from Sage Creek, 6.5 mi northwest of Trail Creek, MT, and at river mile 216.6.

DRAINAGE AREA.--427 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1929 to June 1995 (no winter records prior to 1952). Prior to 1934, published as Flathead River near Trail Creek, MT. October 1970 to September 1972, published as North Fork Flathead River at Flathead British Columbia. October 1999 to current year gage re-established and operated by USGS at site on left bank in British Columbia.

GAGE.--Water-stage recorder. Elevation of gage is 3,964.95 ft (NGVD 29). Prior to Sept. 1, 1949, nonrecording gage and Sept. 1, 1949 to Oct. 4, 1964, water-stage recorder at site 1,200 ft upstream at elevation 11.01 ft higher. Oct. 5, 1964, to Aug. 1, 1973, water-stage recorder at site on left bank 155 ft upstream at elevation 1.79 ft higher. Aug. 2, 1973 to June 28, 1995 operated by Water Survey Canada at site on right bank at elevation 3.21 ft. higher. October 1999 to current year at site 200 ft upstream from International Border in British Columbia on left bank.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	323	e220	e140	e150	127	493	e2,110	2,000	1,190	368	549
2	134	297	e220	e150	e140	125	496	e2,600	1,880	1,130	362	537
3	132	282	e210	e140	e130	125	515	e3,630	1,950	1,010	359	519
4	132	e250	197	e120	e140	132	589	3,760	2,180	1,040	365	500
5	131	e220	230	e100	e140	127	699	e3,700	2,490	1,110	347	476
6	130	e200	234	e90	e140	128	824	e3,100	2,790	982	337	453
7	129	e180	207	e110	e140	125	1,030	e2,800	2,850	972	368	442
8	129	e190	e190	e130	e140	140	1,220	e2,940	2,530	1,010	375	437
9	128	e200	e180	e160	e140	158	1,240	2,980	2,090	928	351	433
10	129	e210	e170	e170	e140	166	1,180	2,670	1,850	834	330	452
11	131	217	e150	e180	e130	170	1,270	2,400	1,760	794	317	481
12	132	204	e170	e170	e120	169	1,500	2,050	1,680	774	304	580
13	136	201	e180	e165	e115	172	1,760	1,840	1,570	721	294	575
14	135	201	e200	e160	e110	175	2,320	1,650	1,690	677	285	579
15	133	192	210	e155	e120	173	2,170	1,570	1,670	636	277	623
16	140	192	205	e150	e130	171	1,790	1,570	1,480	602	274	687
17	171	195	199	e145	e130	172	1,480	1,740	1,350	567	269	770
18	260	218	e180	e140	e140	189	1,300	1,980	1,300	550	285	1,090
19	241	360	e160	e140	e150	211	1,240	2,330	1,220	531	293	1,380
20	242	387	e150	e135	e140	191	1,150	2,520	1,180	518	337	1,150
21	806	313	e170	e130	e140	185	1,080	2,540	1,150	518	419	995
22	723	e200	e180	e125	e130	188	1,050	2,320	1,160	486	385	881
23	545	e210	e170	e120	e120	217	1,150	1,990	1,180	462	548	787
24	469	e220	e160	e125	e125	251	1,330	1,710	1,190	446	783	719
25	399	e230	e170	e130	e130	268	1,370	1,540	1,250	436	962	654
26	352	e230	e180	e125	132	275	1,520	1,870	1,290	426	1,010	611
27	319	e220	e160	e120	131	275	2,150	2,290	1,160	413	958	570
28	340	e210	e150	e120	129	266	e2,870	2,460	1,030	409	816	540
29	621	e240	e140	e140	127	273	e2,370	2,590	955	399	763	519
30	448	e230	e120	e160	---	313	e2,070	2,410	1,130	387	675	516
31	340	---	e130	e160	---	415	---	2,140	---	375	599	---
TOTAL	8,392	7,022	5,592	4,305	3,849	6,072	41,226	73,800	49,005	21,333	14,415	19,505
MEAN	271	234	180	139	133	196	1,374	2,381	1,634	688	465	650
MAX	806	387	234	180	150	415	2,870	3,760	2,850	1,190	1,010	1,380
MIN	128	180	120	90	110	125	493	1,540	955	375	269	433
AC-FT	16,650	13,930	11,090	8,540	7,630	12,040	81,770	146,400	97,200	42,310	28,590	38,690
CFSM	0.63	0.55	0.42	0.33	0.31	0.46	3.22	5.58	3.83	1.61	1.09	1.52
IN.	0.73	0.61	0.49	0.38	0.34	0.53	3.59	6.43	4.27	1.86	1.26	1.70

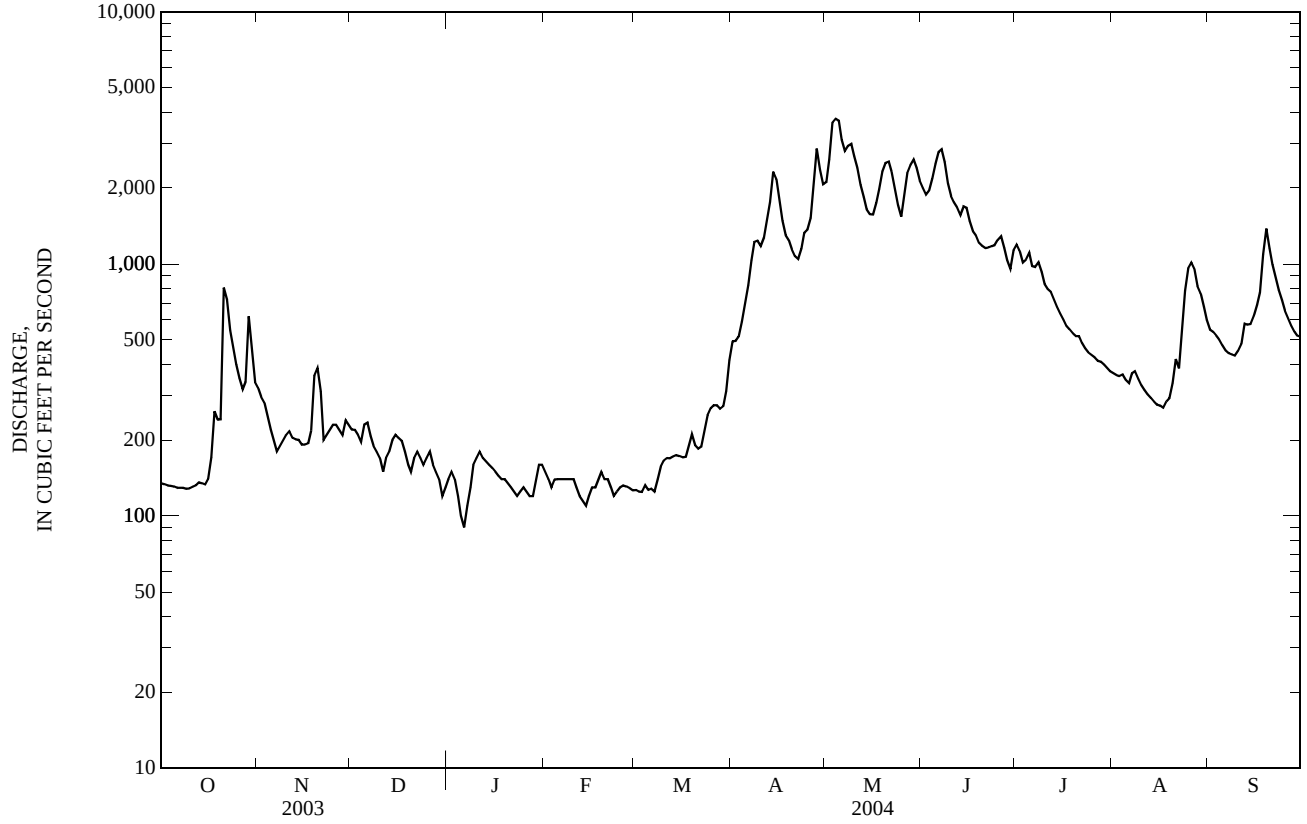
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)*

MEAN	324	343	236	185	171	199	920	3,477	3,066	977	383	294
MAX	1,285	1,261	881	458	345	685	2,957	5,584	6,691	2,418	937	785
(WY)	(1948)	(2000)	(1976)	(1981)	(1971)	(1986)	(1934)	(1948)	(1974)	(1954)	(1976)	(1951)
MIN	127	124	97.0	87.3	83.3	97.7	189	1,540	824	279	188	132
(WY)	(2002)	(1937)	(2001)	(2001)	(2001)	(2001)	(1970)	(1977)	(1977)	(1977)	(1931)	(2001)

12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004*	
ANNUAL TOTAL	229,550		254,516			
ANNUAL MEAN	629		695		898	
HIGHEST ANNUAL MEAN					1,376	1974
LOWEST ANNUAL MEAN					377	2001
HIGHEST DAILY MEAN	6,000	May 30	3,760	May 4	b16,800	Jun 7, 1995
LOWEST DAILY MEAN	80	Feb 23	90	Jan 6	62	Jan 2, 1977
ANNUAL SEVEN-DAY MINIMUM	109	Feb 19	120	Jan 2	71	Dec 31, 1976
MAXIMUM PEAK FLOW			a4,070	May 3	c16,300	Jun 8, 1964
MAXIMUM PEAK STAGE			a7.66	May 3	d10.00	May 31, 2002
INSTANTANEOUS LOW FLOW					f59	Feb 23, 2003
ANNUAL RUNOFF (AC-FT)	455,300		504,800		650,500	
ANNUAL RUNOFF (CFSM)	1.47		1.63		2.10	
ANNUAL RUNOFF (INCHES)	20.00		22.17		28.57	
10 PERCENT EXCEEDS	1,790		1,960		2,680	
50 PERCENT EXCEEDS	210		340		295	
90 PERCENT EXCEEDS	131		130		135	

*--During period of operation (no winter records prior to 1952).
a--May have been higher on May 5 during a period of no gage-height record.
b--Instantaneous peak flow not determined.
c--Gage height, 8.00 ft, site and datum then in use.
d--At present site and datum. Flood of June 7, 1995 reached a stage of 9.66 ft (site and datum then in use), which is 12.86 ft at present site and datum.
e--Estimated.
f--Gage height, 3.95 ft.



12355000 FLATHEAD RIVER AT FLATHEAD, BRITISH COLUMBIA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1965, 1970, 1975-93 and August 1999 to current year.

REMARKS.--Missing metals data for June 17 due to sample loss in transit to lab.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to September 1981.
WATER TEMPERATURE: November 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: April 1975 to October 1978, August 1985 to June 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 309 microsiemens per centimeter (µS/cm) at 25.0°C, Jan. 12, 28, 1975, Jan. 20, 1980; minimum daily, 130 µS/cm at 25.0°C, May 20, 1976.
WATER TEMPERATURE: Maximum 19.5°C, Aug 2, 1977; minimum 0.0°C on many days during winters.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,310 mg/L, June 20,1975; minimum daily mean, 1 mg/L on many days most years.
SEDIMENT LOAD: Maximum daily, 36,100 tons, June 20, 1975; minimum daily, 0.24 ton, Feb. 1, 23, 1988.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unf by analysis, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)
MAY													
04...	1030	3,840	42	8.1	175	14.5	4.0	E.002	E.050	E.002	.22	E.005	.129
JUN													
03...	0900	2,110	4.8	8.1	186	10.5	6.0	<.010	<.016	E.001	.05	<.006	.022
JUL													
12...	0945	784	<2.0	8.2	222	14.0	8.5	<.010	<.016	<.002	.04	<.006	.007
SEP													
28...	0900	540	<2.0	8.1	244	4.0	7.0	<.010	<.016	<.002	.06	<.006	.004

Date	Organic carbon, water, unfltrd mg/L (00680)	Arsenic water unfltrd ug/L (01002)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, unfltrd recoverable, ug/L (01042)	Lead, water, unfltrd recoverable, ug/L (01051)	Nickel, water, unfltrd recoverable, ug/L (01067)	Zinc, water, unfltrd recoverable, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
MAY											
04...	--	--	--	--	--	--	--	--	62	152	1,580
JUN											
03...	2.0	E1	E.03	E.4	.9	.41	1.05	E1	75	21	120
JUL											
12...	--	--	--	--	--	--	--	--	53	11	23
SEP											
28...	2.2	<2	<.04	<.8	E.3	E.06	.48	<2	75	3	4.4

E--Estimated.

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°29'44", long 114°07'36" (NAD 27), in NE¼SW¼NW¼ sec.35, T.32 N., R.20 W., Flathead County, Hydrologic Unit 17010206, on right bank 1.5 mi downstream from Canyon Creek, 3.8 mi upstream from Middle Fork, 8.8 mi northeast of Columbia Falls, and at river mile 162.1.

DRAINAGE AREA.--1,548 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1910 to September 1917 (no winter records in water years 1913, 1916, 1917), April 1929 to February 1935 (incomplete), June 1935 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as Flathead River near Columbia Falls 1915-17, 1929-70.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1911, 1912(M), 1915-17(M), 1929 (M), 1938-39(M), 1946(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,145.59 ft (NGVD 29). September 1910 to September 1917 and April to August 1929, nonrecording gages, and May 1, 1930, to Sept. 30, 1962, water-stage recorder, all at site 2.7 mi downstream at different elevations.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. A few small diversions from tributaries for irrigation of hay meadows upstream from station. Bureau of Reclamation satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	593	1,220	918	e550	e590	515	3,020	6,370	6,440	5,580	1,550	2,670
2	589	1,200	920	e570	e570	518	2,950	6,800	6,160	5,540	1,500	2,530
3	579	1,140	902	e530	e550	469	2,990	8,600	6,180	5,190	1,490	2,400
4	573	1,020	814	e430	e540	516	3,230	10,200	6,750	4,930	1,480	2,260
5	569	e970	807	e380	e560	525	3,660	10,500	7,830	4,970	1,430	2,150
6	563	e900	883	e370	e560	515	4,130	9,660	8,870	4,580	1,390	2,040
7	557	e870	863	e400	e550	508	4,640	8,570	9,190	4,340	1,460	1,950
8	556	e850	776	e450	e550	529	5,180	8,520	8,710	4,330	1,550	1,890
9	553	e850	760	e630	548	623	5,380	8,760	7,560	4,110	1,490	1,790
10	547	e870	e730	e660	540	696	4,990	8,330	6,810	3,780	1,410	1,740
11	544	e900	e650	e670	529	732	4,850	7,580	6,390	3,560	1,350	1,710
12	560	867	e700	e660	483	767	5,060	6,860	6,350	3,350	1,300	1,810
13	574	822	e750	e640	e470	799	5,750	6,120	6,160	3,130	1,260	1,960
14	573	801	e800	e630	e450	803	7,180	5,550	6,070	2,970	1,220	2,110
15	566	786	e770	e620	e500	801	7,860	5,150	6,000	2,820	1,180	2,420
16	608	773	e750	e600	e530	797	7,060	4,970	5,570	2,740	1,160	2,750
17	652	787	e730	e580	536	813	6,230	4,990	5,180	2,680	1,160	2,970
18	671	828	e700	e560	567	938	5,580	5,340	4,970	2,600	1,180	3,210
19	731	1,050	e650	e550	575	1,250	5,160	5,950	4,770	2,570	1,170	3,970
20	737	1,210	e600	e540	555	1,190	4,850	6,720	4,600	2,660	1,250	3,910
21	1,070	1,100	e670	e530	543	1,130	4,560	7,270	4,570	2,610	1,340	3,620
22	1,740	824	e730	e510	508	1,190	4,320	7,280	4,640	2,500	1,440	3,290
23	1,590	e870	e670	e490	488	1,430	4,260	6,620	5,000	2,340	1,710	3,010
24	1,430	e900	e600	e500	512	1,660	4,520	5,900	5,240	2,190	2,130	2,800
25	1,330	e930	e650	509	526	1,830	4,710	5,350	5,500	2,060	3,180	2,610
26	1,230	e930	e700	497	537	2,010	4,820	5,470	6,000	1,960	4,100	2,450
27	1,150	907	e670	491	539	2,040	5,540	6,350	5,850	1,880	4,090	2,310
28	1,160	878	e650	478	531	1,900	7,410	6,970	5,330	1,790	3,720	2,170
29	1,580	1,040	e630	e500	523	1,960	7,530	7,620	5,040	1,720	3,430	2,060
30	1,640	983	e570	e570	---	2,230	6,740	7,470	5,070	1,660	3,220	2,010
31	1,330	---	e530	e600	---	2,800	---	6,940	---	1,590	2,910	---
TOTAL	27,145	28,076	22,543	16,695	15,460	34,484	154,160	218,780	182,800	98,730	58,250	74,570
MEAN	876	936	727	539	533	1,112	5,139	7,057	6,093	3,185	1,879	2,486
MAX	1,740	1,220	920	670	590	2,800	7,860	10,500	9,190	5,580	4,100	3,970
MIN	544	773	530	370	450	469	2,950	4,970	4,570	1,590	1,160	1,710
AC-FT	53,840	55,690	44,710	33,110	30,660	68,400	305,800	434,000	362,600	195,800	115,500	147,900
CFSM	0.57	0.60	0.47	0.35	0.34	0.72	3.32	4.56	3.94	2.06	1.21	1.61
IN.	0.65	0.67	0.54	0.40	0.37	0.83	3.70	5.26	4.39	2.37	1.40	1.79

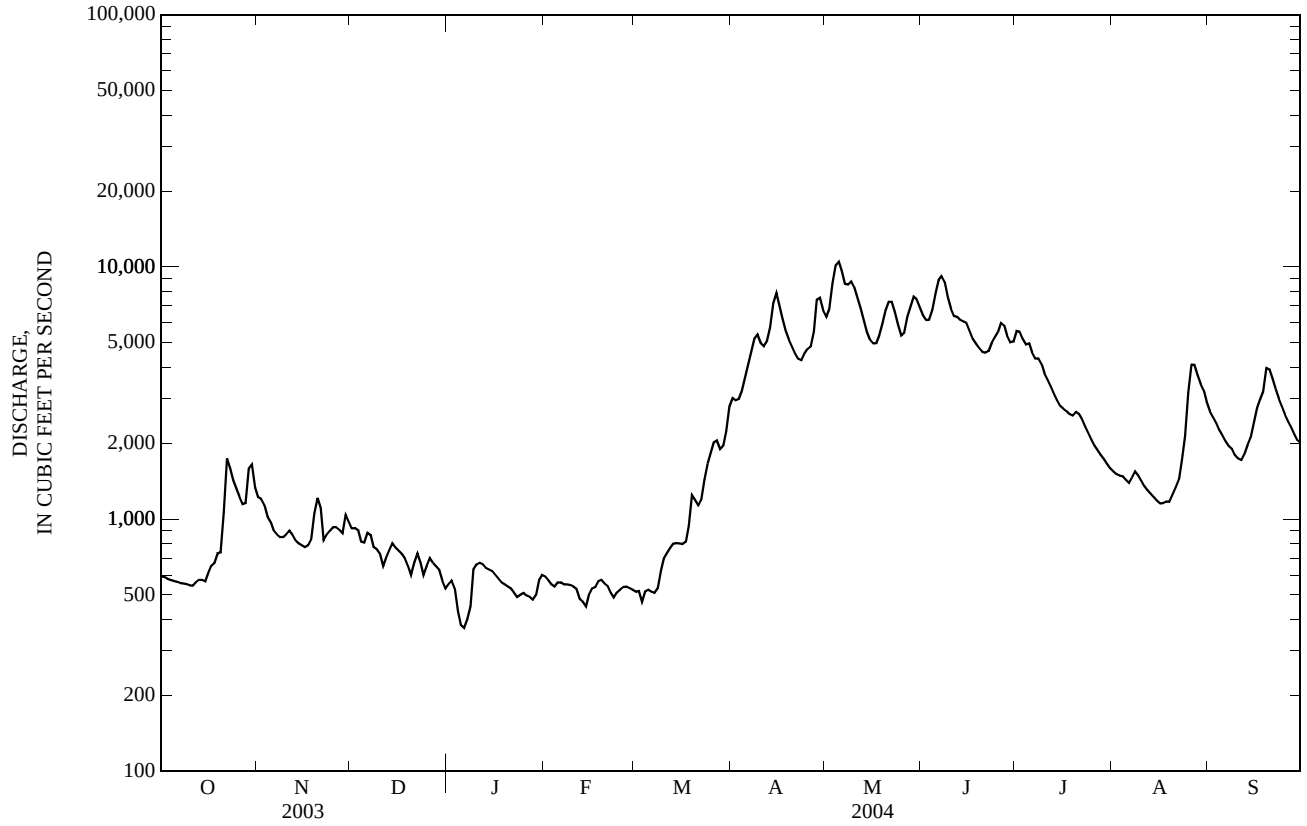
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	1,170	1,189	935	758	735	886	3,307	9,836	10,010	4,068	1,644	1,179
MAX	3,650	3,733	3,388	2,131	2,017	2,597	6,877	15,160	20,780	9,262	3,232	2,653
(WY)	(1952)	(1990)	(1996)	(1974)	(1996)	(1986)	(1943)	(1954)	(1974)	(1954)	(1976)	(1959)
MIN	517	486	433	398	342	406	833	4,986	3,353	1,436	747	552
(WY)	(2002)	(1988)	(2001)	(1988)	(2001)	(1944)	(1975)	(1944)	(1941)	(1977)	(1941)	(2001)

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	859,236		931,693			
ANNUAL MEAN	2,354		2,546		2,983	
HIGHEST ANNUAL MEAN					4,721	1974
LOWEST ANNUAL MEAN					1,383	1944
HIGHEST DAILY MEAN	16,400	May 30	10,500	May 5	58,000	Jun 9, 1964
LOWEST DAILY MEAN	330	Feb 24	370	Jan 6	200	Nov 24, 1993
ANNUAL SEVEN-DAY MINIMUM	481	Feb 22	447	Jan 2	289	Nov 22, 1993
MAXIMUM PEAK FLOW			10,700	May 5	a69,100	Jun 9, 1964
MAXIMUM PEAK STAGE			6.94	May 5	b18.60	Jun 9, 1964
INSTANTANEOUS LOW FLOW					c187	Feb 8, 2001
INSTANTANEOUS LOW STAGE					d0.86	Jan 8, 1953
ANNUAL RUNOFF (AC-FT)	1,704,000		1,848,000		2,161,000	
ANNUAL RUNOFF (CFSM)	1.52		1.64		1.93	
ANNUAL RUNOFF (INCHES)	20.65		22.39		26.18	
10 PERCENT EXCEEDS	6,000		6,350		8,490	
50 PERCENT EXCEEDS	930		1,430		1,200	
90 PERCENT EXCEEDS	581		534		555	

a--From rating curve extended above 30,000 ft^3/s, on basis of slope-area measurement of peak flow.
b--From floodmark.
c--Gage height, 0.87 ft, result of freezeup.
d--Discharge, 198 ft^3/s, site and datum then in use.
e--Estimated.



12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1970, 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to October 1978.
WATER TEMPERATURE: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1975 to November 1978.

INSTRUMENTATION.--Temperature recorder since Oct. 1, 1975.

REMARKS.--Daily water temperatures record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 246 microsiemens per centimeter (mS/cm) at 25.0ÞC, Dec. 31, 1976; minimum daily, 128 mS/cm at 25.0ÞC, June 30, July 1, 1976.
WATER TEMPERATURE: Maximum, 23.0°C, Aug. 12, 1997; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 931 mg/L, May 11, 1976; minimum daily mean, 1 mg/L on many days each year.
SEDIMENT LOAD: Maximum daily, 56,800 tons, May 11, 1976; minimum daily, 1.1 tons, Mar. 3, 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.5°C, Aug. 16-18; minimum, 0.0°C on many days from October through March.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	10.0	8.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	10.5	8.0	9.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
3	10.5	8.5	9.5	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
4	10.5	8.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	10.5	8.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	11.0	8.5	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	11.0	9.5	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	10.0	8.5	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	10.5	8.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8.5	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	8.0	6.5	7.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
12	7.0	6.5	7.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
13	8.5	7.0	7.0	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
14	8.0	6.5	7.0	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
15	7.0	6.0	6.5	2.0	1.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
16	6.0	6.0	6.0	2.5	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
17	9.0	6.0	7.5	3.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
18	9.0	7.0	8.0	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
19	8.0	7.0	7.5	3.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
20	8.5	7.5	8.0	3.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
21	10.5	8.5	9.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	10.0	9.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	9.0	7.5	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	7.5	6.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	6.0	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	6.0	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	6.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	7.0	6.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	7.0	3.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	3.5	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	1.0	0.0	0.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	11.0	0.0	7.5	3.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0

12355500 NORTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	0.0	0.0	3.0	2.0	2.0	4.5	3.5	4.0	9.5	6.0	7.5
2	0.0	0.0	0.0	2.0	0.5	1.5	5.5	2.5	4.0	9.5	7.5	8.5
3	0.0	0.0	0.0	1.0	0.0	0.5	6.0	3.5	4.5	9.0	7.5	8.0
4	0.0	0.0	0.0	1.5	0.0	0.5	6.5	4.5	5.5	8.0	6.0	7.0
5	0.0	0.0	0.0	2.0	0.0	1.0	6.0	4.0	5.0	8.0	6.5	7.0
6	0.0	0.0	0.0	1.5	0.0	1.0	7.0	4.5	5.5	8.5	5.0	6.5
7	0.0	0.0	0.0	1.5	1.0	1.5	6.5	4.0	5.5	9.5	7.0	8.0
8	0.0	0.0	0.0	4.0	1.5	2.5	6.0	4.0	4.5	9.0	6.5	7.5
9	0.5	0.0	0.0	3.5	2.5	3.0	5.5	3.5	4.5	8.0	6.5	7.0
10	0.5	0.5	0.5	3.5	2.0	2.5	7.0	4.0	5.5	7.5	5.5	6.5
11	0.5	0.0	0.5	3.0	2.0	2.5	7.0	4.5	6.0	7.5	6.5	6.5
12	0.5	0.0	0.0	3.0	2.0	2.5	7.5	5.0	6.5	6.5	5.0	5.5
13	0.0	0.0	0.0	4.0	2.5	3.5	7.5	5.5	6.5	6.5	4.5	5.5
14	0.0	0.0	0.0	3.5	2.5	3.0	7.0	5.5	6.0	7.5	5.5	6.5
15	0.0	0.0	0.0	3.5	2.0	3.0	6.0	4.0	5.0	8.5	6.5	7.5
16	0.0	0.0	0.0	3.0	2.5	3.0	6.0	4.0	5.0	10.0	7.0	8.0
17	1.0	0.0	0.5	4.0	3.0	3.5	6.0	4.0	5.0	10.0	7.0	8.5
18	1.5	1.0	1.0	4.0	3.5	4.0	6.5	4.5	5.5	10.5	7.0	9.0
19	2.0	1.5	1.5	4.0	2.5	3.0	7.0	5.0	6.0	10.0	8.5	9.5
20	2.0	1.5	1.5	3.5	1.5	2.5	6.5	5.0	5.5	10.0	8.0	8.5
21	2.5	1.5	1.5	4.5	2.5	3.5	7.0	4.5	5.5	8.5	7.0	7.5
22	2.0	0.5	1.0	5.5	3.0	4.5	8.5	5.0	6.5	7.5	6.5	7.0
23	1.5	0.0	0.5	5.5	3.5	4.0	8.5	5.5	7.0	8.0	6.0	7.0
24	1.5	0.5	1.0	4.0	2.5	3.5	8.0	6.0	7.5	9.0	6.5	7.5
25	2.5	1.5	2.0	5.0	2.5	3.5	8.5	5.5	7.0	9.5	7.0	8.5
26	3.0	2.0	2.5	4.5	3.5	4.0	9.5	6.0	7.5	9.0	8.0	8.5
27	3.5	2.0	2.5	4.0	2.5	3.5	9.0	7.0	8.0	9.0	8.0	8.5
28	2.5	1.5	2.0	5.0	2.0	3.5	8.0	5.5	6.5	9.0	7.5	8.0
29	3.0	1.5	2.0	6.0	3.0	4.5	7.5	4.5	6.0	8.5	7.0	8.0
30	---	---	---	6.0	3.5	5.0	8.5	5.5	7.0	9.0	7.0	8.0
31	---	---	---	6.0	4.0	4.5	---	---	---	9.0	7.5	8.0
MONTH	3.5	0.0	0.5	6.0	0.0	3.0	9.5	2.5	6.0	10.5	4.5	7.5
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.0	7.5	8.5	14.5	13.0	13.5	18.5	16.0	17.5	15.0	13.5	14.5
2	11.0	7.0	9.0	15.0	12.0	13.5	18.0	15.5	17.0	14.5	12.0	12.5
3	11.5	8.5	10.0	14.5	12.0	13.5	17.5	16.0	16.5	12.0	11.0	11.5
4	12.5	9.5	11.0	13.5	11.5	12.0	17.5	14.5	16.0	12.5	11.5	12.0
5	12.0	9.5	10.5	13.5	11.0	12.0	17.5	15.0	16.5	13.0	11.0	12.0
6	10.0	8.5	9.0	14.5	12.0	13.0	17.0	14.5	15.5	13.0	11.0	12.0
7	9.0	7.5	8.0	14.0	12.0	13.0	16.0	13.5	14.5	12.5	11.5	11.5
8	9.0	7.0	8.0	13.0	10.5	11.5	16.5	13.0	14.5	13.0	10.5	12.0
9	9.0	7.5	8.5	14.5	10.0	12.0	17.0	14.5	16.0	13.0	11.5	12.5
10	10.5	8.0	9.0	15.0	12.0	13.5	17.5	15.0	16.5	12.5	11.0	12.0
11	10.0	8.5	9.0	14.5	12.5	13.5	18.0	15.0	17.0	12.5	11.5	11.5
12	9.0	8.0	8.5	15.0	11.5	13.0	18.0	15.5	17.0	12.0	11.5	11.5
13	10.0	7.5	8.5	15.5	13.0	14.0	18.5	16.0	17.5	12.0	11.0	11.5
14	10.0	8.5	9.0	17.0	13.5	15.0	18.5	16.0	17.5	11.5	10.5	11.0
15	10.0	7.5	8.5	18.5	15.5	17.0	18.5	16.0	17.5	11.0	10.0	10.5
16	11.0	8.0	9.5	19.0	16.0	17.5	19.5	17.5	18.5	11.0	10.0	10.5
17	11.0	9.5	10.0	18.5	16.0	17.0	19.5	17.5	19.0	11.0	10.0	10.5
18	11.5	8.0	9.5	17.5	15.5	16.5	19.5	17.0	18.0	10.5	10.0	10.0
19	11.0	9.0	10.0	17.5	15.5	17.0	17.5	15.5	16.5	10.0	8.5	9.0
20	11.0	9.0	9.5	17.5	15.5	16.5	18.0	15.5	17.0	9.5	9.0	9.0
21	13.5	9.0	11.0	17.0	14.5	16.0	18.0	16.0	17.0	9.5	8.0	9.0
22	13.5	11.0	12.5	17.0	14.0	15.5	17.5	15.5	16.5	11.0	9.0	10.0
23	14.0	11.5	12.5	17.5	14.5	16.0	15.5	13.5	14.5	11.5	9.5	10.5
24	14.5	11.5	13.0	17.5	15.0	16.5	13.5	12.5	13.0	11.5	10.0	11.0
25	14.0	12.0	13.0	18.0	15.5	17.0	13.0	12.5	13.0	11.5	10.0	11.0
26	13.0	11.0	11.5	18.0	16.0	17.5	14.0	12.0	13.0	11.5	10.0	11.0
27	13.5	10.0	11.5	18.0	16.0	17.0	13.5	12.5	13.0	11.5	10.0	11.0
28	15.0	11.5	13.0	18.0	15.5	16.5	14.0	12.5	13.0	11.5	10.0	10.5
29	15.5	12.0	14.0	18.0	15.0	16.5	14.5	13.0	13.5	11.5	10.0	11.0
30	15.5	13.0	14.0	18.0	16.0	17.0	15.5	12.5	14.0	11.5	10.0	11.0
31	---	---	---	18.0	15.5	17.0	15.5	13.5	14.5	---	---	---
MONTH	15.5	7.0	10.5	19.0	10.0	15.0	19.5	12.0	16.0	15.0	8.0	11.0

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT

LOCATION.--Lat 48°29'43", long 114°00'33" (NAD 27), in S½SW¼NE¼ sec.34, T.32 N., R.19 W., Flathead County, Hydrologic Unit 17010207, on left bank 0.8 mi downstream from McDonald Creek, 1.3 mi west of West Glacier, and at river mile 3.8.

DRAINAGE AREA.--1,128 mi^2.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1947, published as "near Belton."

REVISED RECORDS.--WSP 1216: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,128.72 ft (NGVD 29). Prior to Nov. 22, 1950, nonrecording gage at present site and elevation.

REMARKS.--Records good. Bureau of Reclamation satellite at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	451	964	675	420	474	412	3,250	6,280	6,280	5,290	1,470	2,250
2	446	915	658	431	454	415	3,110	6,790	6,050	5,090	1,420	2,140
3	440	881	654	393	428	410	3,020	8,780	6,410	4,840	1,370	1,990
4	436	820	657	e330	423	402	3,160	10,500	7,480	4,610	1,320	1,850
5	430	755	629	e310	438	408	3,770	10,900	8,990	4,590	1,250	1,750
6	429	716	638	e300	439	420	4,550	9,850	10,100	4,150	1,200	1,670
7	422	663	682	e320	433	402	5,370	8,860	9,250	4,240	1,280	1,570
8	417	640	671	e350	434	414	5,900	9,290	7,900	4,550	1,400	1,500
9	420	631	642	484	430	494	5,760	9,380	6,790	4,020	1,260	1,400
10	429	643	610	499	426	654	5,220	8,450	6,280	3,640	1,150	1,320
11	425	669	519	509	415	777	4,930	7,600	6,390	3,500	1,080	1,270
12	421	656	550	501	388	809	5,050	6,700	6,800	3,290	1,040	1,360
13	425	624	606	475	372	866	5,750	5,940	6,450	3,070	1,000	1,480
14	436	600	642	467	357	864	7,210	5,370	6,270	2,930	968	1,650
15	428	580	632	463	387	846	7,880	4,940	6,110	2,920	943	2,200
16	438	583	603	453	401	846	7,020	4,640	5,600	2,890	928	2,690
17	455	597	593	441	401	881	6,100	4,700	5,320	2,780	952	3,050
18	453	611	566	424	428	1,040	5,440	5,010	5,160	2,680	1,110	2,920
19	480	720	494	419	465	1,550	4,990	5,390	4,930	2,600	1,060	2,800
20	497	801	453	415	457	1,640	4,660	5,920	4,690	2,710	1,010	2,640
21	645	751	530	413	442	1,530	4,400	6,840	4,600	2,650	962	2,480
22	693	665	570	403	426	1,520	4,210	7,190	5,120	2,400	924	2,320
23	680	652	524	394	411	1,690	4,230	6,510	5,590	2,220	1,020	2,180
24	669	674	456	400	410	1,940	4,700	5,780	6,070	2,080	2,030	2,090
25	647	676	491	408	417	2,250	4,980	5,250	6,150	1,970	3,240	2,010
26	621	670	526	360	427	2,380	5,050	5,230	6,160	1,880	4,660	1,920
27	598	657	504	324	424	2,370	5,910	6,200	5,790	1,820	3,730	1,820
28	595	639	486	228	422	2,250	8,210	7,180	5,310	1,720	3,230	1,720
29	1,130	703	463	310	415	2,170	7,860	7,630	5,280	1,630	2,950	1,630
30	1,330	709	434	420	---	2,260	6,800	7,220	5,250	1,570	2,710	1,570
31	1,110	---	411	487	---	2,810	---	6,690	---	1,510	2,450	---
TOTAL	17,496	20,865	17,569	12,551	12,244	37,720	158,490	217,010	188,570	95,840	51,117	59,240
MEAN	564	696	567	405	422	1,217	5,283	7,000	6,286	3,092	1,649	1,975
MAX	1,330	964	682	509	474	2,810	8,210	10,900	10,100	5,290	4,660	3,050
MIN	417	580	411	228	357	402	3,020	4,640	4,600	1,510	924	1,270
MED	451	667	570	415	426	866	5,050	6,700	6,130	2,890	1,250	1,890
AC-FT	34,700	41,390	34,850	24,890	24,290	74,820	314,400	430,400	374,000	190,100	101,400	117,500
CFSM	0.50	0.62	0.50	0.36	0.37	1.08	4.68	6.21	5.57	2.74	1.46	1.75
IN.	0.58	0.69	0.58	0.41	0.40	1.24	5.23	7.16	6.22	3.16	1.69	1.95

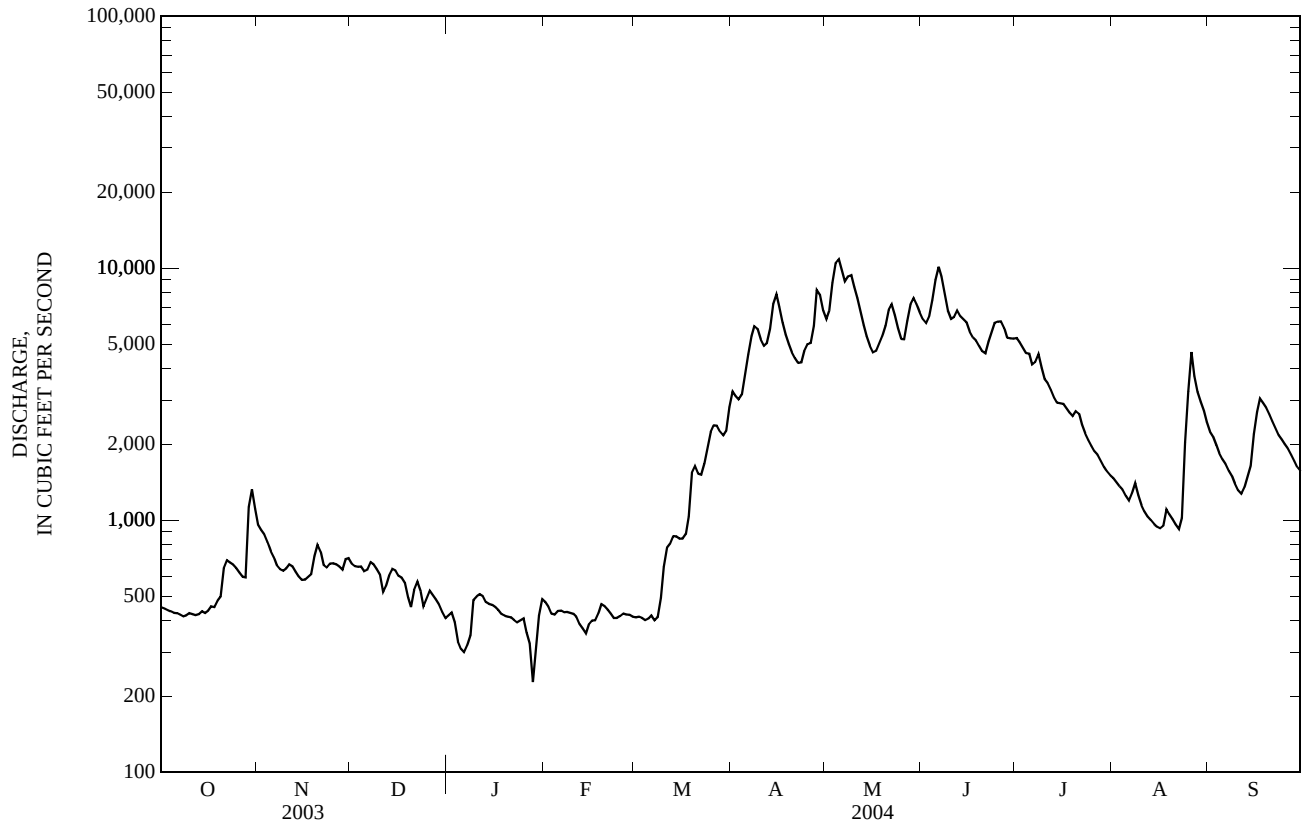
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	1,035	1,154	902	697	705	861	3,231	9,520	9,998	3,935	1,357	956
MAX	3,004	5,598	3,750	2,420	2,686	2,779	7,093	14,670	19,870	8,162	2,364	2,510
(WY)	(1960)	(1990)	(1996)	(1974)	(1971)	(1986)	(1943)	(1957)	(1964)	(1954)	(1976)	(1968)
MIN	367	279	262	282	244	307	664	5,259	3,576	1,249	576	420
(WY)	(1940)	(1953)	(1953)	(2001)	(2001)	(1944)	(1975)	(1941)	(1941)	(1944)	(1941)	(1988)

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	835,422		888,712			
ANNUAL MEAN	2,289		2,428		2,868	
HIGHEST ANNUAL MEAN					4,071	1974
LOWEST ANNUAL MEAN					1,437	1941
HIGHEST DAILY MEAN	18,200	May 26	10,900	May 5	92,700	Jun 9, 1964
LOWEST DAILY MEAN	299	Jan 11	228	Jan 28	189	Nov 27, 1952
ANNUAL SEVEN-DAY MINIMUM	372	Jan 18	346	Jan 23	205	Nov 26, 1952
MAXIMUM PEAK FLOW			11,100	May 5	a140,000	Jun 9, 1964
MAXIMUM PEAK STAGE			6.02	May 5	36.46	Jun 9, 1964
INSTANTANEOUS LOW FLOW			211	Jan 28	b173	Nov 27, 1952
INSTANTANEOUS LOW STAGE			1.24	Jan 28	b0.72	Nov 27, 1952
ANNUAL RUNOFF (AC-FT)	1,657,000		1,763,000		2,078,000	
ANNUAL RUNOFF (CFSM)	2.03		2.15		2.54	
ANNUAL RUNOFF (INCHES)	27.55		29.31		34.55	
10 PERCENT EXCEEDS	6,530		6,280		8,390	
50 PERCENT EXCEEDS	712		1,180		1,100	
90 PERCENT EXCEEDS	440		418		434	

a--About 140,000 ft^3/s, from rating curve extended above 31,000 ft^3/s, on basis of a contracted opening measurement at gage height, 19.42 ft, and flood volume-hydrographic comparison.
b--Stage below intakes.
e--Estimated.



12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT

LOCATION.--Lat 47°58'45", long 113°33'36" (NAD 27), in NE¼NW¼NE¼ sec.36, T.26 N., R.16 W., Flathead County, Hydrologic Unit 17010209, Flathead National Forest, on left bank 0.1 mi downstream from Tin Creek, 0.4 mi upstream from Twin Creek, 36.3 mi southeast of Hungry Horse, and at river mile 42.2.

DRAINAGE AREA.--1,160 mi^2.

PERIOD OF RECORD.--October 1964 to September 1982, October 1984 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 3,575 ft (NGVD 29), from river-profile map.

REMARKS.--Seasonal records excellent. No known regulation or diversions upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1964, reached a stage of 20.87 ft, from high-water profile; discharge, 50,900 ft^3/s, by slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				2,560	4,980	5,520	3,920	793	740	888	890	
2				2,380	5,940	5,310	3,620	764	761	841	865	
3				2,250	7,970	5,760	3,370	751	757	798	972	
4				2,500	9,430	6,860	3,110	736	718	763	933	
5				3,210	10,400	8,650	2,960	711	707	729	891	
6				3,940	9,720	10,300	2,650	687	692	701	868	
7				4,770	8,970	8,730	2,580	720	661	696	852	
8				5,160	9,490	6,770	2,680	702	635	676	837	
9				4,900	9,030	5,590	2,350	662	609	650	825	
10				4,350	7,920	5,990	2,110	634	587	630	808	
11				3,930	6,870	6,260	2,050	610	576	608	795	
12				3,910	5,720	6,190	1,960	589	626	591	774	
13				4,510	4,870	5,610	1,820	572	677	574	739	
14				5,670	4,250	5,360	1,710	554	724	561	714	
15				5,980	3,810	5,020	1,660	539	819	581	711	
16				5,220	3,580	4,560	1,610	528	990	751	707	
17				4,510	3,560	4,340	1,540	552	1,200	1,510	695	
18				3,970	3,900	4,120	1,470	599	1,420	1,600	677	
19				3,550	4,240	3,920	1,490	598	1,670	1,510	675	
20				3,260	4,810	3,700	1,480	576	1,680	1,410	659	
21				3,020	5,770	3,660	1,410	556	1,640	1,400	614	
22				2,840	6,690	4,200	1,300	534	1,520	1,410	603	
23				2,860	6,550	4,770	1,200	562	1,410	1,350	614	
24				3,320	5,690	5,140	1,120	699	1,340	1,260	621	
25				3,450	4,940	5,160	1,070	797	1,260	1,180	747	
26				3,670	4,820	5,210	1,020	956	1,180	1,110	756	
27				4,800	5,830	4,740	983	983	1,110	1,060	674	
28				6,650	6,820	4,280	944	937	1,050	1,020	595	
29				5,990	6,980	4,140	904	891	995	975	608	
30				5,190	6,260	4,090	863	850	941	943	564	
31				---	5,900	---	827	788	---	928	---	
TOTAL				122,320	195,710	163,950	57,781	21,430	29,695	29,704	22,283	
MEAN				4,077	6,313	5,465	1,864	691	990	958	743	
MAX				6,650	10,400	10,300	3,920	983	1,680	1,600	972	
MIN				2,250	3,560	3,660	827	528	576	561	564	
AC-FT				242,600	388,200	325,200	114,600	42,510	58,900	58,920	44,200	
CFSM				3.51	5.44	4.71	1.61	0.60	0.85	0.83	0.64	
IN.				3.92	6.28	5.26	1.85	0.69	0.95	0.95	0.71	

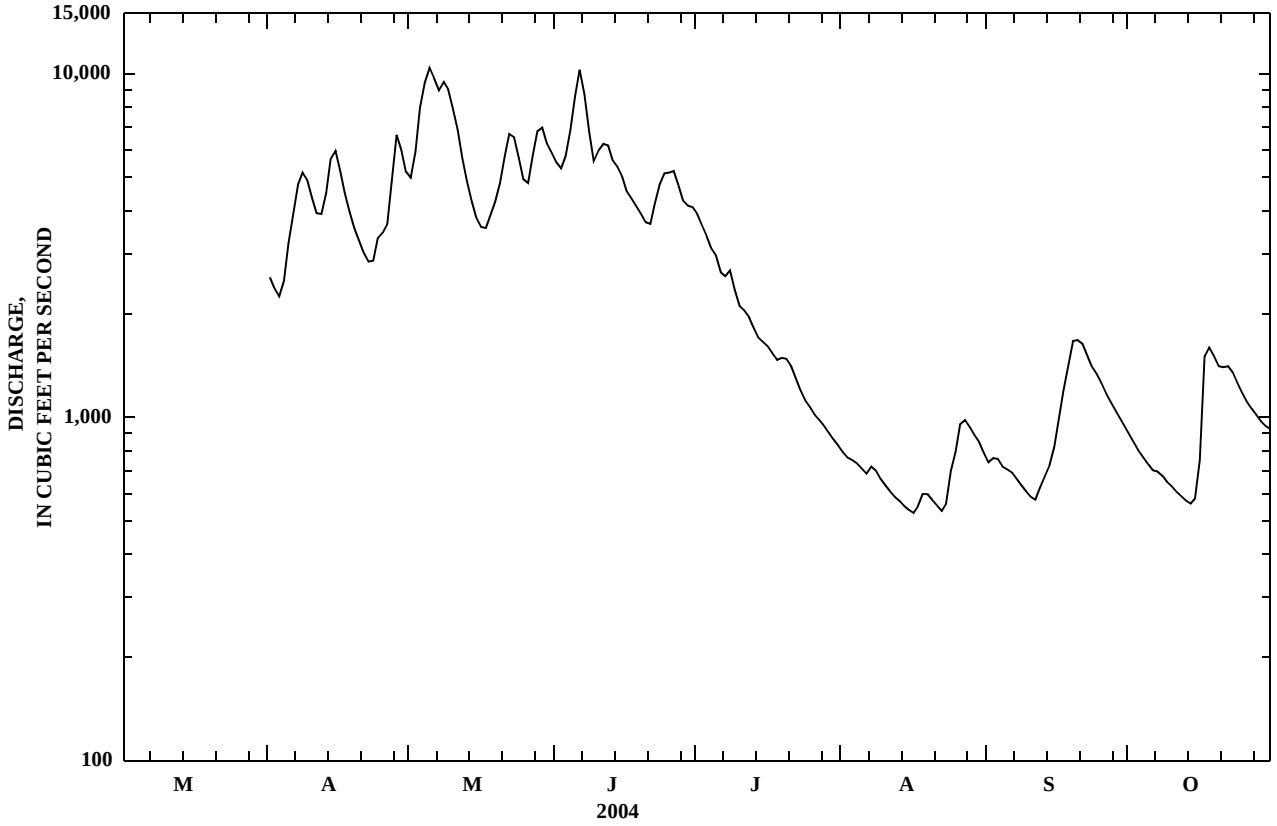
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2004, BY WATER YEAR (WY)*

MEAN	479	520	588	2,511	7,677	8,348	2,699	779	582	576	702	514
MAX	1,197	2,285	1,342	4,490	12,580	15,910	5,904	1,331	1,853	1,878	3,098	1,323
(WY)	(1974)	(1971)	(1972)	(1990)	(1997)	(1974)	(1975)	(1972)	(1985)	(1986)	(1990)	(1976)
MIN	207	201	252	464	4,738	2,522	844	339	245	225	204	249
(WY)	(1980)	(1980)	(1980)	(1975)	(1977)	(1987)	(1977)	(1988)	(1988)	(1988)	(1988)	(1972)

12359800 SOUTH FORK FLATHEAD RIVER ABOVE TWIN CREEK, NEAR HUNGRY HORSE, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		FOR 1985 - 2004 SEASONS		WATER YEARS 1965 - 2004*	
ANNUAL MEAN					2,310	
HIGHEST ANNUAL MEAN					2,988	1971
LOWEST ANNUAL MEAN					1,175	1977
HIGHEST DAILY MEAN	10,400	May 5	28,500	May 17, 1997	29,500	Jun 16, 1974
LOWEST DAILY MEAN	528	Aug 16	176	Nov 30, 1987	135	Jan 29, 1980
ANNUAL SEVEN-DAY MINIMUM					155	Jan 26, 1980
MAXIMUM PEAK FLOW	10,800	May 5	29,100	May 17, 1997	30,200	Jun 16, 1974
MAXIMUM PEAK STAGE	10.68	May 5	15.01	May 17, 1997	15.20	Jun 16, 1974
INSTANTANEOUS LOW FLOW					a127	Nov 30, 1979
ANNUAL RUNOFF (AC-FT)					1,673,000	
ANNUAL RUNOFF (CFSM)					1.99	
ANNUAL RUNOFF (INCHES)					27.06	
10 PERCENT EXCEEDS					7,420	
50 PERCENT EXCEEDS					646	
90 PERCENT EXCEEDS					290	

*--During periods of operation. Seasonal records only from October 1984 to current year.
a--Gage height, 4.13 ft.



12362000 HUNGRY HORSE RESERVOIR NEAR HUNGRY HORSE, MT

LOCATION.--Lat 48°20'28", long 114°00'48" (NAD 27), in NE¼NE¼NW¼ sec.27, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, in block 14 of Hungry Horse Dam on South Fork Flathead River, 3.8 mi southeast of Hungry Horse, and at river mile 5.3.
DRAINAGE AREA.--1,654 mi^2.
PERIOD OF RECORD.--September 1951 to current year.
GAGE.--Water-stage recorder equipped with remote indicator in power house. Elevation of gage is 3,196 ft (NGVD 29) (levels by U.S. Bureau of Reclamation). During construction and prior to May 1, 1953, various types of nonrecording gages were used.
REMARKS.--Reservoir and flow completely controlled by concrete arch-gravity dam; construction began in 1948; completed in 1952. Storage began Sept. 21, 1951. Usable capacity, 3,451,000 acre-ft, top of 1.0 ft flash-boards; 3,427,000 acre-ft between elevations 3,196 ft, lowest outlet, and 3,560 ft, controlled spillway elevation. Dead storage, 39,730 acre-ft below elevation 3,196 ft. Minimum operating level, 445,400 acre-ft, elevation, 3,336 ft for on-site power generation. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Water is used for power production, flood control, irrigation and recreation. Controlled spillway is an adjustable ring gate with 1.0 ft flashboards. Figures given herein represent usable contents. Capacity table in use is dated August 1969.
COOPERATION.--Capacity table and daily elevations provided by U.S. Bureau of Reclamation.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,461,000 acre-ft, July 3, 4, 1955, Aug. 6, 1956; maximum elevation observed, 3,561.40 ft, July 3, 4, 1955; minimum contents observed since normal low operating level reached in May 1952, 607,700 acre-ft, Jan. 13, 1953, elevation, 3,362.50 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,422,000 acre-ft, June 27, 29, elevation, 3,559.75 ft; minimum, 2,401,000 acre-ft, Mar. 18, elevation, 3,511.79 ft.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FT)

Elevation	Contents
3,500	2,185,000
3,530	2,761,000
3,560	3,427,000

ELEVATION ABOVE NGVD 1929, FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 2359 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,535.33	3,532.12	3,529.87	3,525.23	3,519.39	3,513.72	3,515.08	3,533.90	3,550.45	3,559.72	3,552.63	3,541.91
2	3,535.15	3,532.14	3,529.81	3,525.00	3,519.20	3,513.54	3,515.43	3,534.72	3,550.80	3,559.65	3,552.29	3,541.55
3	3,534.97	3,532.13	3,529.66	3,524.83	3,518.99	3,513.36	3,515.77	3,535.70	3,551.18	3,559.56	3,551.94	3,541.23
4	3,534.79	3,532.11	3,529.46	3,524.57	3,518.78	3,513.17	3,516.17	3,536.53	3,551.73	3,559.45	3,551.57	3,541.04
5	3,534.61	3,532.05	3,529.23	3,524.36	3,518.57	3,513.04	3,516.68	3,537.63	3,552.69	3,559.35	3,551.13	3,540.83
6	3,534.42	3,531.96	3,529.02	3,524.06	3,518.39	3,512.81	3,517.32	3,538.56	3,553.81	3,559.22	3,550.70	3,540.68
7	3,534.21	3,531.85	3,528.90	3,523.87	3,518.21	3,512.62	3,518.09	3,539.35	3,554.59	3,559.20	3,550.36	3,540.56
8	3,534.05	3,531.75	3,528.77	3,523.64	3,518.00	3,512.41	3,518.94	3,540.42	3,555.03	3,559.07	3,549.93	3,540.44
9	3,533.87	3,531.64	3,528.68	3,523.47	3,517.83	3,512.24	3,519.73	3,541.45	3,555.36	3,558.93	3,549.52	3,540.30
10	3,533.73	3,531.64	3,528.54	3,523.26	3,517.61	3,512.14	3,520.40	3,542.13	3,555.69	3,558.76	3,549.10	3,540.17
11	3,533.49	3,531.57	3,528.36	3,523.09	3,517.40	3,512.06	3,520.99	3,542.64	3,556.06	3,558.57	3,548.68	3,540.12
12	3,533.33	3,531.50	3,528.21	3,522.91	3,517.18	3,512.06	3,521.61	3,542.96	3,556.65	3,558.39	3,548.30	3,540.04
13	3,533.19	3,531.39	3,528.11	3,522.72	3,516.95	3,511.96	3,522.36	3,543.19	3,557.22	3,558.18	3,547.92	3,540.05
14	3,533.02	3,531.25	3,528.04	3,522.55	3,516.73	3,511.88	3,523.44	3,543.37	3,557.55	3,557.93	3,547.53	3,540.08
15	3,532.85	3,531.15	3,527.94	3,522.37	3,516.51	3,511.88	3,524.43	3,543.67	3,557.77	3,557.72	3,547.15	3,540.19
16	3,532.73	3,531.08	3,527.78	3,522.20	3,516.29	3,511.85	3,525.22	3,543.96	3,557.83	3,557.50	3,546.76	3,540.30
17	3,532.57	3,530.99	3,527.70	3,522.01	3,516.13	3,511.81	3,525.87	3,544.15	3,557.89	3,557.25	3,546.35	3,540.33
18	3,532.44	3,530.92	3,527.54	3,521.82	3,515.97	3,511.79	3,526.44	3,544.31	3,557.93	3,557.00	3,546.05	3,540.31
19	3,532.27	3,530.82	3,527.37	3,521.63	3,515.81	3,511.94	3,526.94	3,544.51	3,558.22	3,556.78	3,545.64	3,540.31
20	3,532.13	3,530.80	3,527.17	3,521.43	3,515.63	3,512.06	3,527.37	3,544.81	3,558.50	3,556.53	3,545.29	3,540.32
21	3,532.05	3,530.68	3,527.02	3,521.19	3,515.44	3,512.20	3,527.81	3,545.25	3,558.65	3,556.21	3,544.89	3,540.27
22	3,531.99	3,530.57	3,526.93	3,521.05	3,515.25	3,512.35	3,528.20	3,545.75	3,558.78	3,555.86	3,544.48	3,540.23
23	3,532.02	3,530.43	3,526.73	3,520.84	3,515.06	3,512.55	3,528.62	3,546.18	3,558.97	3,555.53	3,544.18	3,540.15
24	3,531.88	3,530.43	3,526.60	3,520.68	3,514.87	3,512.81	3,529.06	3,546.44	3,559.17	3,555.23	3,543.90	3,540.07
25	3,531.80	3,530.29	3,526.43	3,520.47	3,514.68	3,513.06	3,529.57	3,546.56	3,559.40	3,554.96	3,543.75	3,540.01
26	3,531.70	3,530.21	3,526.29	3,520.33	3,514.49	3,513.37	3,530.09	3,546.76	3,559.62	3,554.62	3,543.59	3,539.98
27	3,531.63	3,530.08	3,526.15	3,520.17	3,514.29	3,513.66	3,530.78	3,547.11	3,559.75	3,554.29	3,543.35	3,539.97
28	3,531.82	3,530.05	3,525.97	3,520.01	3,514.12	3,513.85	3,531.74	3,547.72	3,559.74	3,553.98	3,543.11	3,539.95
29	3,531.86	3,530.03	3,525.80	3,519.87	3,513.91	3,514.06	3,532.54	3,548.60	3,559.75	3,553.65	3,542.82	3,539.96
30	3,532.01	3,529.97	3,525.63	3,519.71	---	3,514.32	3,533.23	3,549.31	3,559.74	3,553.31	3,542.51	3,539.95
31	3,532.06	---	3,525.38	3,519.57	---	3,514.68	---	3,550.00	---	3,552.98	3,542.16	---
MAX	3,535.33	3,532.14	3,529.87	3,525.23	3,519.39	3,514.68	3,533.23	3,550.00	3,559.75	3,559.72	3,552.63	3,541.91
MIN	3,531.63	3,529.97	3,525.38	3,519.57	3,513.91	3,511.79	3,515.08	3,533.90	3,550.45	3,552.98	3,542.16	3,539.95

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT END OF MONTH

2,804	2,760	2,666	2,551	2,441	2,456	2,828	3,195	3,421	3,263	3,020	2,972

CHANGE IN CONTENTS, IN ACRE-FEET

-72,000	-44,000	-94,000	-115,000	-110,000	+15,000	+372,000	+367,000	+226,000	-158,000	-243,000	-48,000

CALENDAR YEAR 2003 . . . . . +115,000
WATER YEAR 2004 . . . . . -96,000

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'24", long 114°02'12" (NAD 27), in SW¼SE¼SW¼ sec.16, T.30 N., R.19 W., Flathead County, Hydrologic Unit 17010209, on right bank 1.7 mi downstream from Hungry Horse Dam, 6.8 mi east of Columbia Falls, and at river mile 3.5.

DRAINAGE AREA.--1,663 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1910 to January 1911 (discharge measurements only), February 1911 to September 1913 (no winter records), October 1913 to August 1916 (scattered daily discharge only), water years 1917-22 (annual maximum), April 1923 to November 1924 (no winter records), July to October 1925, May to November 1927, May 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1316: 1923-24(M), 1926-27(M), 1932(M), 1935-36(M). WSP 1636: 1958 (adjusted runoff).

GAGE.--Water-stage recorder. Elevation of gage is 3,040 ft (NGVD 29) (levels by the U.S. Bureau of Reclamation). September 1910 to September 1916, nonrecording gage, Apr. 23, 1923, to Sept. 30, 1928, water-stage recorder at site 3 mi downstream at different elevation. Oct. 1, 1928, to Sept. 30, 1952, water-stage recorder at site 1.5 mi downstream at different elevation.

REMARKS.--Water-discharge records excellent . Flow regulated by Hungry Horse Reservoir since Sept. 21, 1951 (see preceding page). U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--76 years (water years, 1929-2004), 3,497 ft^3/s, 28.56 in/yr, 2,534,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,200 ft^3/s, June 19, 1916, gage height, 16.6 ft, site and elevation then in use, from rating curve extended above 20,000 ft^3/s; minimum observed, 7.3 ft^3/s, Sept. 24, 1951, gage height, 0.52 ft, dam closure, site and elevation then in use; minimum daily, 7.3 ft^3/s, Sept. 24, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,440 ft^3/s, June 27, gage height, 9.05 ft; minimum daily, 937 ft^3/s, Apr. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,370	965	1,730	2,540	2,300	2,560	975	972	3,800	5,750	5,120	5,170
2	2,350	1,230	1,900	2,480	2,380	2,560	975	955	e4,480	5,730	5,130	5,140
3	2,350	1,310	1,840	2,580	2,510	2,530	971	2,550	e4,540	5,720	5,160	4,590
4	2,360	1,440	2,860	e2,610	2,580	2,580	979	4,980	4,520	5,730	5,540	3,930
5	2,310	1,640	3,570	e2,640	2,520	2,600	966	4,980	2,300	5,720	5,820	3,390
6	2,320	1,740	3,100	e2,650	2,440	2,600	966	4,440	2,220	5,210	5,820	2,750
7	2,300	1,800	2,610	e2,710	2,440	2,600	973	4,830	3,690	5,200	5,810	2,470
8	2,350	1,910	2,020	2,750	2,450	2,600	974	2,350	4,530	5,210	5,810	2,450
9	2,390	1,880	1,740	2,580	2,500	2,540	968	2,280	4,550	5,200	5,840	2,440
10	2,370	1,770	2,010	2,400	2,540	2,330	967	3,860	4,540	5,210	5,850	2,480
11	2,370	1,700	2,340	2,370	2,530	2,140	967	4,690	4,530	5,210	5,580	1,920
12	2,360	1,760	2,400	2,390	2,610	1,940	963	4,640	2,220	5,210	5,150	1,920
13	2,360	1,870	2,280	2,370	2,660	1,890	970	4,640	2,160	5,210	5,150	1,960
14	2,340	1,940	2,100	2,340	2,660	1,850	970	4,630	3,560	5,230	5,160	1,950
15	2,360	2,050	1,900	2,340	2,710	1,810	966	2,320	5,250	5,150	5,150	1,940
16	2,260	2,010	1,890	2,330	2,630	1,810	969	2,220	5,710	5,110	5,180	2,490
17	2,190	1,940	2,040	2,330	2,550	1,800	961	3,770	5,700	5,100	5,180	3,420
18	2,180	1,950	2,030	2,380	2,520	1,800	962	4,670	5,630	5,090	5,190	3,400
19	2,190	1,800	2,160	2,430	2,490	1,570	975	4,640	2,410	5,070	5,190	3,390
20	2,200	1,510	2,350	2,430	2,460	1,190	964	4,640	2,340	5,400	5,180	3,400
21	1,980	1,430	2,280	2,420	2,450	1,010	937	4,620	3,780	5,740	5,220	3,390
22	1,470	1,740	2,130	2,510	2,460	977	969	4,640	4,580	5,740	5,240	3,380
23	1,050	2,050	2,130	2,510	2,580	982	963	4,650	4,700	5,690	5,220	3,370
24	1,250	1,910	2,170	2,520	2,590	974	968	5,340	4,620	5,110	5,160	3,360
25	1,490	1,900	2,230	2,570	2,560	975	966	5,940	4,550	5,110	5,160	2,690
26	1,470	1,810	2,240	2,730	2,560	973	969	6,140	4,570	5,120	5,150	2,380
27	1,570	1,700	2,230	2,740	2,490	955	973	6,180	5,330	5,110	5,110	1,930
28	1,590	1,830	2,240	2,860	2,470	979	993	4,700	5,710	5,130	5,100	1,900
29	1,270	1,870	2,270	2,690	2,510	973	957	2,360	5,710	5,140	5,120	1,660
30	989	1,730	2,400	2,490	---	976	972	2,240	5,730	5,100	5,140	1,640
31	938	---	2,550	2,320	---	976	---	2,220	---	5,110	5,170	---
TOTAL	61,347	52,185	69,740	78,010	73,150	54,050	29,048	122,087	127,960	164,560	164,800	86,300
MEAN	1,979	1,740	2,250	2,516	2,522	1,744	968	3,938	4,265	5,308	5,316	2,877
MAX	2,390	2,050	3,570	2,860	2,710	2,600	993	6,180	5,730	5,750	5,850	5,170
MIN	938	965	1,730	2,320	2,300	955	937	955	2,160	5,070	5,100	1,640
MED	2,260	1,800	2,230	2,510	2,520	1,810	968	4,640	4,540	5,210	5,180	2,590
AC-FT	121,700	103,500	138,300	154,700	145,100	107,200	57,620	242,200	253,800	326,400	326,900	171,200
CFSM	1.19	1.05	1.35	1.51	1.52	1.05	0.58	2.37	2.56	3.19	3.20	1.73
IN.	1.37	1.17	1.56	1.75	1.64	1.21	0.65	2.73	2.86	3.68	3.69	1.93

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

ADJUSTED FOR CHANGE IN CONTENTS IN HUNGRY HORSE RESERVOIR

MEAN	808	1,000	720	646	610	1,987	7,220	9,908	8,063	2,739	1,364	2,070
CFSM	0.49	0.60	0.43	0.39	0.37	1.19	4.34	5.96	4.85	1.65	0.82	1.24
IN.	0.56	0.67	0.50	0.45	0.40	1.38	4.84	6.87	5.41	1.90	0.95	1.39
AC-FT	49,700	59,500	44,300	39,700	35,100	122,200	429,620	609,200	479,800	168,400	83,900	123,200

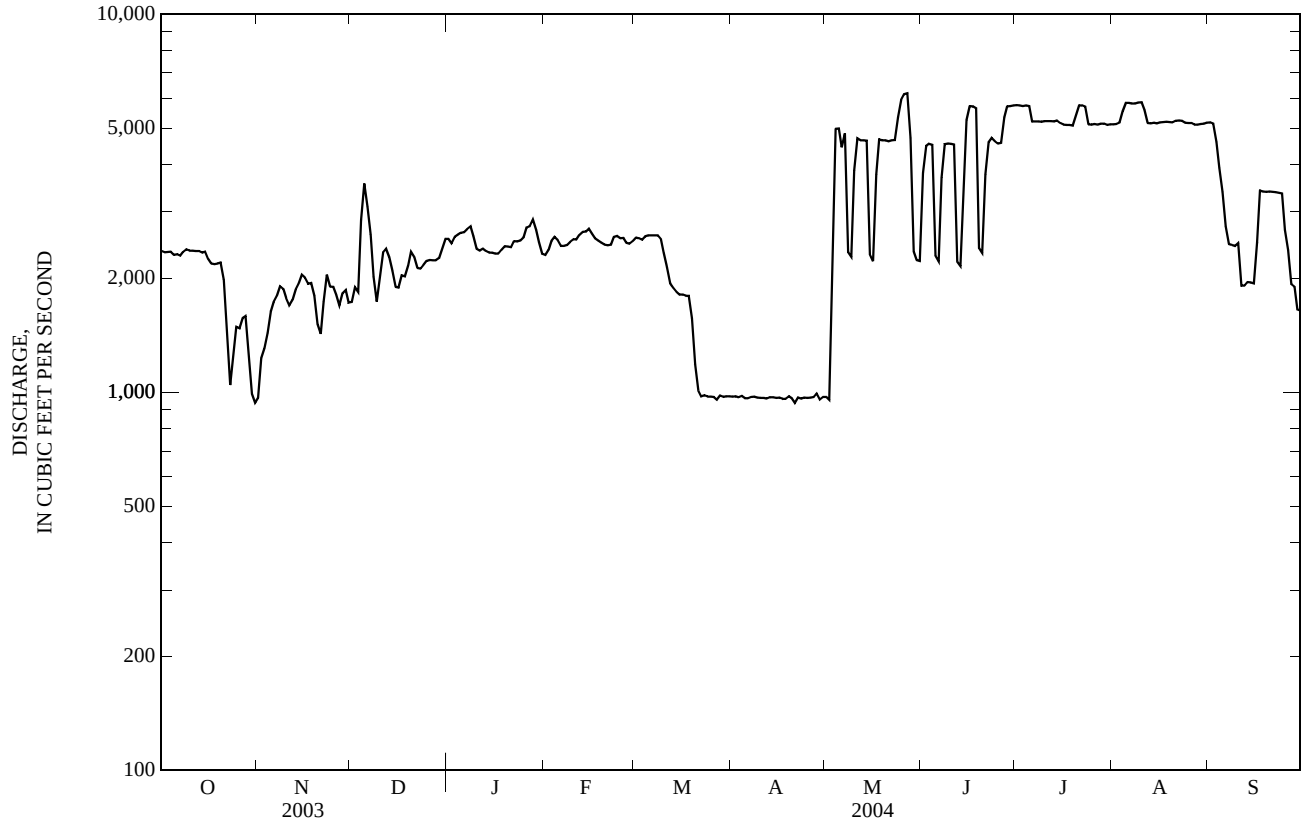
OBSERVED

CALENDAR YEAR 2003	TOTAL	953,985	MEAN	2,732	MAX	6,620	MIN	691	AC-FT	1,892,000
WATER YEAR 2004	TOTAL	1,083,237	MEAN	2,960	MAX	6,180	MIN	937	AC-FT	2,149,000

ADJUSTED

CALENDAR YEAR 2003	TOTAL	1,011,963	MEAN	2,773	CFSM	1.67	IN	22.63	AC-FT	2,007,000
WATER YEAR 2004	TOTAL	1,131,646	MEAN	3,092	CFSM	1.86	IN	25.31	AC-FT	2,245,000

e--Estimated.



12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1964 to September 1968, March 1979 to current year.

INSTRUMENTATION.--Temperature recorder since Mar. 30, 1979.
REMARKS.--Prior to March 1979, thermograph records furnished by Montana Department of Fish, Wildlife, and Parks. Daily temperature record good. Missing data for June 2-3 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 19.0°C Aug. 9-11, 1966, Aug. 2-6, 1968, Aug. 6, 2003; minimum (water years 1965-68, 1979-81, 1983-88), 2.0°C on many days during winter most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 17.0°C, Aug. 21, 22; minimum, 3.5°C, many days December through June.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	12.0	12.0	5.0	4.5	4.5	4.5	4.5	4.5	4.0	3.5	3.5
2	12.5	12.0	12.5	4.5	4.0	4.5	4.5	4.5	4.5	3.5	3.5	3.5
3	12.5	12.0	12.0	4.5	4.0	4.0	4.5	4.0	4.5	3.5	3.5	3.5
4	12.5	12.0	12.5	4.5	4.0	4.5	4.5	4.0	4.5	3.5	3.5	3.5
5	12.5	12.0	12.5	4.5	4.0	4.5	4.5	4.0	4.5	3.5	3.5	3.5
6	12.0	10.5	11.5	4.5	4.5	4.5	4.5	4.0	4.5	4.0	3.5	3.5
7	11.0	10.5	11.0	4.5	4.5	4.5	4.5	4.0	4.5	4.0	3.5	3.5
8	11.0	10.5	11.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	3.5	4.0
9	11.0	9.0	10.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	3.5	3.5
10	10.5	8.5	9.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5
11	10.5	10.0	10.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
12	10.5	10.0	10.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
13	10.5	10.0	10.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
14	10.5	10.0	10.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
15	10.0	9.5	10.0	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	4.0
16	10.0	9.5	10.0	5.0	4.5	4.5	4.0	3.5	4.0	4.0	3.5	4.0
17	10.0	9.5	10.0	4.5	4.5	4.5	4.0	3.5	4.0	4.0	3.5	4.0
18	10.0	9.0	9.5	5.0	4.5	4.5	4.0	3.5	3.5	4.0	3.5	4.0
19	10.0	9.0	9.5	5.0	4.5	4.5	4.0	3.5	4.0	4.0	3.5	4.0
20	9.5	6.5	8.5	4.5	4.0	4.5	4.0	3.5	4.0	4.0	3.5	4.0
21	7.0	4.5	5.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
22	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	4.0
23	4.5	4.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	4.0
24	4.5	4.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5
25	4.5	4.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5
26	5.0	4.5	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5
27	4.5	4.5	4.5	4.5	4.0	4.5	4.0	3.5	4.0	4.0	3.5	3.5
28	4.5	4.5	4.5	4.5	4.0	4.5	4.0	3.5	3.5	4.0	3.5	3.5
29	4.5	4.0	4.5	4.5	4.5	4.5	4.0	3.5	3.5	4.0	3.5	4.0
30	4.5	4.0	4.0	4.5	4.5	4.5	3.5	3.5	3.5	4.0	3.5	4.0
31	4.5	4.0	4.0	---	---	---	3.5	3.5	3.5	4.0	3.5	4.0
MONTH	12.5	4.0	8.5	5.0	4.0	4.5	4.5	3.5	4.0	4.0	3.5	4.0

12362500 SOUTH FORK FLATHEAD RIVER NEAR COLUMBIA FALLS, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	3.5	4.0	4.0	3.5	3.5	4.0	4.0	4.0	4.5	3.5	4.0
2	4.0	3.5	3.5	4.0	3.5	3.5	4.5	4.0	4.0	4.5	3.5	4.0
3	4.0	3.5	3.5	4.0	3.5	3.5	4.5	4.0	4.0	4.0	3.5	4.0
4	4.0	3.5	3.5	4.0	3.5	3.5	4.5	4.0	4.0	4.0	3.5	4.0
5	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.0	4.0	4.0	3.5	4.0
6	4.0	3.5	3.5	4.0	3.5	3.5	4.5	4.0	4.0	4.5	3.5	4.0
7	4.0	3.5	4.0	4.0	3.5	3.5	4.5	4.0	4.0	4.0	3.5	4.0
8	4.0	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.5	4.0	4.0
9	4.0	3.5	4.0	4.0	3.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0
10	4.0	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0
11	4.0	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0	3.5	3.5	3.5
12	4.0	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
13	4.0	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0	4.5	4.0	4.0
14	4.0	3.5	3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5
15	4.0	3.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5
16	4.0	3.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5
17	4.0	3.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	3.5
18	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0
19	4.0	3.5	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
20	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
21	4.0	3.5	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
22	4.0	3.5	3.5	4.5	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
23	4.0	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
24	4.0	3.5	3.5	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	4.0
25	4.0	3.5	3.5	4.5	4.0	4.0	4.5	3.5	4.0	4.5	4.0	4.0
26	4.0	3.5	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
27	4.0	3.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0
28	4.0	3.5	3.5	4.5	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0
29	4.0	3.5	3.5	4.5	4.0	4.0	4.5	3.5	4.0	4.0	4.0	4.0
30	---	---	---	4.5	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0
31	---	---	---	4.0	4.0	4.0	---	---	---	4.0	4.0	4.0
MONTH	4.0	3.5	4.0	4.5	3.5	4.0	4.5	3.5	4.0	4.5	3.5	4.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	4.0	4.0	4.0	12.5	11.5	11.5	16.0	14.5	15.0	15.0	12.5	13.5
2	---	---	---	12.5	11.5	12.0	15.5	14.0	15.0	14.0	12.0	13.0
3	---	---	---	13.0	11.5	12.5	16.0	14.5	15.0	14.0	12.5	13.5
4	4.0	4.0	4.0	13.0	12.0	12.5	16.0	14.0	15.0	14.5	13.0	14.0
5	4.5	4.0	4.0	13.0	12.0	12.5	15.5	14.5	15.0	14.0	12.0	13.0
6	4.5	4.0	4.0	14.5	13.0	13.5	15.0	13.0	14.0	14.0	12.5	13.5
7	4.0	4.0	4.0	14.5	12.5	14.0	15.0	11.0	13.0	14.0	12.5	13.0
8	4.5	4.0	4.0	13.5	10.0	12.5	15.5	13.5	14.5	13.5	12.5	13.0
9	4.5	4.0	4.0	13.0	11.5	12.5	15.5	15.0	15.0	13.5	12.0	13.0
10	4.5	4.0	4.0	13.0	12.0	12.5	15.5	14.5	15.0	13.5	12.5	13.0
11	4.0	4.0	4.0	13.5	11.0	13.0	15.0	14.0	14.5	14.0	13.5	14.0
12	4.0	4.0	4.0	13.5	12.5	13.0	15.5	13.5	14.5	14.0	13.5	14.0
13	4.5	4.0	4.0	13.5	13.0	13.0	15.5	14.0	15.0	14.0	14.0	14.0
14	4.5	4.0	4.0	13.5	13.0	13.5	15.5	14.0	15.0	14.0	13.5	13.5
15	4.0	3.5	4.0	14.0	13.0	13.5	15.5	14.5	15.0	13.5	13.5	13.5
16	4.0	3.5	4.0	14.5	13.5	14.0	16.0	14.0	15.0	13.5	12.5	13.0
17	4.5	4.0	4.0	14.5	13.5	14.0	16.5	15.0	16.0	13.5	13.0	13.0
18	4.5	4.0	4.5	15.5	13.5	14.0	16.5	13.5	14.5	13.0	13.0	13.0
19	4.5	4.0	4.5	16.0	15.0	15.5	15.5	14.0	15.0	13.0	11.0	12.0
20	4.5	4.0	4.0	15.5	14.5	15.0	16.0	13.5	14.5	12.5	12.0	12.5
21	4.0	4.0	4.0	14.5	13.5	14.0	17.0	15.0	16.0	12.5	12.0	12.0
22	8.0	4.0	6.5	15.5	14.0	14.5	17.0	13.5	15.5	12.0	11.0	11.5
23	11.0	8.0	10.0	16.0	15.0	15.5	16.5	13.5	15.5	12.0	11.5	11.5
24	12.0	10.0	11.0	16.0	15.5	16.0	16.0	13.5	15.0	12.0	11.5	11.5
25	12.0	11.0	11.5	16.0	15.0	15.5	16.0	15.0	15.5	12.5	11.5	12.0
26	11.0	10.5	11.0	16.0	15.0	15.5	15.0	13.5	14.5	12.5	11.5	12.0
27	12.0	11.0	11.5	15.5	13.5	14.5	15.0	13.5	14.0	12.0	11.5	12.0
28	13.0	11.5	12.0	16.5	14.0	15.0	14.5	12.5	13.5	12.0	12.0	12.0
29	12.5	12.0	12.0	16.0	14.5	15.0	15.5	13.0	14.0	12.0	11.5	12.0
30	13.5	12.0	12.5	15.5	14.5	15.0	15.5	13.5	14.5	12.0	11.0	11.5
31	---	---	---	16.5	14.0	15.0	15.0	13.0	14.0	---	---	---
MONTH	13.5	3.5	6.0	16.5	10.0	14.0	17.0	11.0	15.0	15.0	11.0	13.0

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT

LOCATION.--Lat 48°21'43", long 114°11'02" (NAD 27), in NW¼NW¼SE¼ sec.17, T.30 N., R.20 W., Flathead County, Hydrologic Unit 17010208, on right bank 200 ft downstream from county road bridge at Columbia Falls, 5.7 mi downstream from South Fork, and at river mile 143.0.
DRAINAGE AREA.--4,464 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1922 to September 1923 (fragmentary), June 1928 to current year. Monthly discharge only for some periods, published in WSP 1316.
REVISED RECORDS.--WSP 1092: 1923. WSP 1216: Drainage area. WSP 1636: 1958 (adjusted runoff).
GAGE.--Water-stage recorder. Elevation of gage is 2,977.67 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Nov. 12, 1928, nonrecording gage on bridge 200 ft upstream at elevation 0.19 ft higher.
REMARKS.--Water-discharge records excellent. South Fork Flathead River, which contributes about one-third of flow, is completely regulated by Hungry Horse Reservoir 10.9 mi upstream since Sept. 21, 1951 (see station number 12362000). Bureau of Reclamation satellite telemeter at station.
AVERAGE DISCHARGE.--76 years, 9,589 ft^3/s, 29.17 in/yr, 6,947,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir since Oct. 1, 1951.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft^3/s, June 9, 1964, gage height, 25.58 ft, from floodmarks, from rating curve extended above 95,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 798 ft^3/s, Dec. 8, 1929, gage height, -0.08 ft.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of 22.7 ft, from floodmarks, discharge, 142,000 ft^3/s, from rating curve extended above 95,000 ft^3/s on basis of slope-area measurement of peak flow in 1964.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,400 ft^3/s, May 5, gage height, 10.01 ft; minimum daily, 3,290 ft^3/s, Dec. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,460	3,530	3,450	3,440	3,550	3,540	6,810	13,500	16,700	17,100	8,260	10,400
2	3,500	3,410	3,360	3,450	3,500	3,560	7,020	14,000	17,200	17,200	8,170	10,100
3	3,490	3,490	3,430	3,400	3,500	3,530	6,900	18,200	17,400	16,800	8,140	9,380
4	3,500	3,430	4,100	3,330	3,570	3,520	6,960	24,800	18,700	16,200	8,180	8,430
5	3,470	3,440	4,790	3,380	3,700	3,560	7,670	26,000	19,400	16,200	8,650	7,650
6	3,460	3,440	4,960	e3,350	3,600	3,600	8,840	24,200	21,200	15,100	8,580	6,830
7	3,440	3,460	4,660	e3,500	3,540	3,590	10,200	22,300	22,400	14,500	8,600	6,290
8	3,430	3,460	4,130	3,580	3,530	3,590	11,500	20,100	21,900	14,900	8,820	6,090
9	3,470	3,490	3,540	3,680	3,530	3,670	12,000	20,500	19,700	14,300	8,760	5,930
10	3,470	3,480	3,380	3,610	3,580	3,730	11,200	20,600	18,300	13,600	8,600	5,810
11	3,470	3,450	3,350	3,610	3,580	3,760	10,800	20,000	17,800	13,100	8,360	5,310
12	3,470	3,410	3,540	3,630	3,550	3,720	10,700	18,500	16,300	12,600	7,700	5,260
13	3,470	3,410	3,570	3,610	3,550	3,660	11,800	16,900	15,600	12,100	7,590	5,560
14	3,480	3,400	3,620	3,560	3,530	3,650	14,300	15,700	16,200	11,800	7,530	5,820
15	3,480	3,470	3,540	3,550	3,640	3,610	16,600	12,900	17,900	11,600	7,450	6,500
16	3,470	3,500	3,370	3,540	3,690	3,590	15,300	12,000	17,900	11,300	7,420	7,650
17	3,470	3,470	3,390	3,510	3,640	3,570	13,500	13,000	17,200	11,100	7,430	9,590
18	3,450	3,450	3,400	3,490	3,600	3,680	12,100	14,800	16,800	10,900	7,550	9,700
19	3,470	3,560	3,290	3,540	3,640	4,130	11,200	15,700	13,100	10,500	7,590	10,300
20	3,520	3,630	3,330	3,540	3,610	4,270	10,700	17,000	12,100	10,700	7,570	10,300
21	3,600	3,560	3,470	3,520	3,560	3,880	10,100	18,500	13,100	11,300	7,640	9,810
22	3,950	3,380	3,530	3,540	3,510	3,740	9,560	19,400	14,700	11,000	7,770	9,330
23	3,810	3,530	3,470	3,570	3,490	3,930	9,300	18,300	15,800	10,600	7,980	8,870
24	3,520	3,570	3,360	3,590	3,550	4,330	9,610	17,300	16,500	9,760	9,000	8,540
25	3,620	3,610	3,370	3,530	3,570	4,790	10,400	16,800	16,800	9,350	10,900	7,700
26	3,540	3,590	3,470	3,600	3,580	5,180	10,600	16,900	17,500	9,160	13,800	7,090
27	3,470	3,440	3,470	3,570	3,580	5,380	11,600	18,500	17,700	8,970	13,300	6,420
28	3,460	3,340	3,430	3,510	3,530	5,300	15,400	19,200	17,200	8,820	12,400	6,080
29	3,700	3,550	3,390	3,600	3,500	5,140	16,500	18,300	16,600	8,660	11,700	5,680
30	4,070	3,580	3,330	3,730	---	5,190	14,600	17,600	16,600	8,480	11,300	5,480
31	3,880	---	3,380	3,610	---	5,830	---	16,500	---	8,360	10,800	---
TOTAL	110,060	104,530	111,870	109,670	103,500	126,220	333,770	558,000	516,300	376,060	277,540	227,900
MEAN	3,550	3,484	3,609	3,538	3,569	4,072	11,130	18,000	17,210	12,130	8,953	7,597
MAX	4,070	3,630	4,960	3,730	3,700	5,830	16,600	26,000	22,400	17,200	13,800	10,400
MIN	3,430	3,340	3,290	3,330	3,490	3,520	6,810	12,000	12,100	8,360	7,420	5,260
AC-FT	218,300	207,300	221,900	217,500	205,300	250,400	662,000	1,107,000	1,024,000	745,900	550,500	452,000
CFSM	0.80	0.78	0.81	0.79	0.80	0.91	2.49	4.03	3.86	2.72	2.01	1.70
IN.	0.92	0.87	0.93	0.91	0.86	1.05	2.78	4.65	4.30	3.13	2.31	1.90

ADJUSTED FOR CHANGE IN CONTENTS IN HUNGRY HORSE RESERVOIR

MEAN	2,379	2,744	2,080	1,667	1,657	4,316	17,380	23,970	21,010	9,561	5,001	6,789
CFSM	0.53	0.61	0.47	0.37	0.37	0.97	3.89	5.37	4.71	2.14	1.12	1.52
IN.	0.61	0.69	0.54	0.43	0.40	1.11	4.34	6.19	5.25	2.47	1.29	1.70
AC-FT	146,300	163,300	127,900	102,500	95,300	265,400	1,034,000	1,474,000	1,250,000	587,900	307,500	404,000

OBSERVED

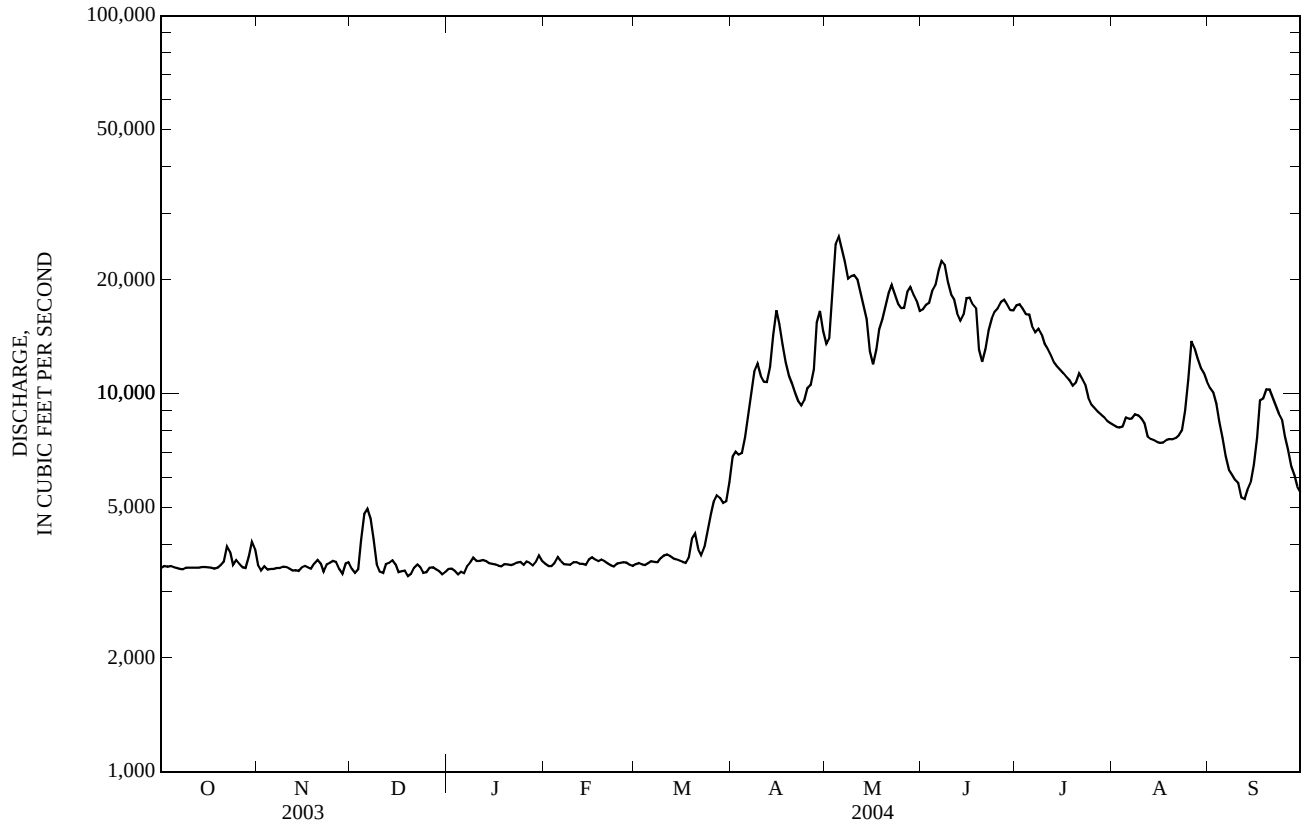
CALENDAR YEAR 2003	TOTAL	2,701,600	MEAN	7,402	MAX	38,700	MIN	3,290	AC-FT	5,359,000
WATER YEAR 2004	TOTAL	2,955,420	MEAN	8,075	MAX	26,000	MIN	3,290	AC-FT	5,862,000

ADJUSTED

CALENDAR YEAR 2003	TOTAL	2,759,567	MEAN	7,560	CFSM	1.69	IN	22.99	AC-FT	5,474,000
WATER YEAR 2004	TOTAL	3,003,832	MEAN	8,207	CFSM	1.84	IN	25.03	AC-FT	5,958,000

e--Estimated.

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-50, 1963-67, 1970, 1979 to September 1994. March 2002 to current year. Water years 1968-69 published as Flathead River near Kalispell (station 12363500) 15 mi downstream. No appreciable inflow or outflow occurs between the two points.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1967, March 1979 to September 1981.
WATER TEMPERATURE: January 1949 to September 1950, August 1963 to September 1969, March 1979 to current year.
SUSPENDED-SEDIMENT DISCHARGE: July 1965 to September 1969.

INSTRUMENTATION.--Temperature recorder since Mar. 27, 1979.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 290 microsiemens per centimeter (µS/cm) at 25.0°C, April 6, 1980; minimum daily, 121 µS/cm at 25.0°C, May 28, 1979.
WATER TEMPERATURE: Maximum, 21.0°C, Aug. 23, 1963, Aug. 8, 1968; minimum, 0.0°C on several days during winter periods most years.
SEDIMENT CONCENTRATION: Maximum daily, 980 mg/L, May 21, 1967; Minimum daily, 1 mg/L on several days most years.
SEDIMENT LOAD: Maximum daily, 140,000 tons, May 23, 1967; minimum daily, 4 tons, Mar. 4-6, 1967.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 18.5°C, Aug. 17; minimum, 0.5°C, Nov. 22 and Jan. 3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instan-taneous dis-charge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, water, unfltrd uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
APR									
06...	0845	8,670	8.0	163	7.0	5.5	<.010	.172	E.001
JUN									
03...	1415	17,500	8.1	147	24.5	10.0	<.010	.077	E.001
JUL									
12...	1430	12,600	8.2	148	26.0	14.0	<.010	.037	<.002
SEP									
28...	1215	6,090	8.3	162	14.0	12.0	<.010	.044	E.001

E--Estimated.

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water unfltrd mg/L (62855)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
APR						
06...	<.006	.023	.31	91	30	702
JUN						
03...	<.006	.004	.12	73	5	236
JUL						
12...	<.006	<.004	.10	83	1	34
SEP						
28...	<.006	<.004	.14	67	4	66

E--Estimated.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	10.5	11.5	2.5	1.0	1.5	2.5	1.5	2.0	2.5	1.0	2.0
2	13.0	10.5	12.0	2.5	1.5	2.0	3.0	2.5	2.5	2.0	1.0	1.5
3	13.0	11.0	12.0	2.5	1.5	2.0	3.5	2.5	3.0	2.0	0.5	1.0
4	13.0	11.0	11.5	2.5	1.0	1.5	3.0	2.0	2.5	2.0	1.0	1.5
5	13.5	11.0	12.0	2.5	1.5	2.0	3.5	2.5	3.0	2.0	1.0	1.5
6	13.0	11.0	11.5	3.5	1.5	2.5	3.5	3.0	3.5	2.0	1.0	1.5
7	12.5	10.5	11.0	3.0	1.5	2.0	3.5	2.5	3.0	2.5	2.0	2.0
8	11.5	10.0	11.0	3.5	2.0	2.5	2.5	2.0	2.5	3.0	2.5	2.5
9	11.0	9.5	10.5	3.0	2.0	2.5	3.0	2.0	2.5	3.0	2.5	2.5
10	10.5	8.5	9.0	3.0	2.5	3.0	2.5	1.5	2.0	3.0	2.5	2.5
11	10.0	8.5	9.5	4.0	3.0	3.5	2.5	1.5	2.0	3.5	2.5	2.5
12	10.0	9.5	9.5	4.0	2.5	3.0	2.5	2.5	2.5	3.0	2.5	2.5
13	9.5	9.0	9.5	4.0	2.5	3.0	2.5	2.0	2.5	3.0	2.5	2.5
14	10.0	8.5	9.0	3.5	2.5	3.0	2.5	2.0	2.0	3.0	2.5	2.5
15	10.0	8.5	9.0	4.0	3.0	3.5	3.0	2.0	2.5	2.5	2.5	2.5
16	9.0	8.5	9.0	4.0	3.5	4.0	2.5	2.0	2.5	3.0	2.5	2.5
17	11.0	9.0	9.5	4.0	3.5	4.0	3.5	2.0	2.5	3.0	2.5	2.5
18	11.0	9.0	9.5	4.5	3.5	4.0	2.5	1.5	2.0	3.0	2.5	2.5
19	10.0	8.5	9.5	5.0	4.0	4.5	2.5	1.5	2.0	3.0	2.5	2.5
20	9.5	8.0	9.0	4.0	3.0	3.5	2.5	2.0	2.5	3.0	2.5	2.5
21	9.5	7.5	8.5	3.0	1.0	1.5	3.0	2.5	2.5	3.0	2.5	2.5
22	9.5	7.5	8.5	2.0	0.5	1.5	3.0	2.5	2.5	3.0	2.5	2.5
23	8.0	7.0	7.5	2.5	1.5	2.0	2.5	2.0	2.0	3.0	2.5	3.0
24	7.5	5.5	6.5	2.5	1.5	2.0	2.5	2.0	2.5	3.0	1.5	2.5
25	6.5	4.5	5.5	2.5	1.5	2.0	3.0	2.5	2.5	2.0	1.0	1.5
26	6.5	4.5	5.5	3.0	2.0	2.5	3.0	2.5	3.0	3.0	2.0	2.5
27	6.5	5.0	5.5	2.5	2.0	2.5	3.0	2.5	2.5	3.0	1.0	2.0
28	6.5	5.5	6.0	2.5	2.0	2.0	2.5	2.0	2.0	3.5	1.5	2.5
29	6.5	4.5	5.5	3.5	2.5	3.0	2.5	1.5	2.0	3.5	3.0	3.0
30	4.5	1.5	3.0	3.0	2.0	2.5	2.5	1.5	2.0	4.0	2.5	3.0
31	2.5	1.0	1.5	---	---	---	2.5	2.0	2.0	3.0	2.0	2.5
MONTH	13.5	1.0	8.5	5.0	0.5	2.5	3.5	1.5	2.5	4.0	0.5	2.0

12363000 FLATHEAD RIVER AT COLUMBIA FALLS, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.5	2.0	2.5	4.5	3.0	3.5	5.0	4.0	4.5	8.5	6.5	7.5
2	3.5	2.0	2.5	4.5	2.5	3.5	5.5	3.5	4.5	9.0	7.5	8.5
3	3.5	1.5	2.0	3.5	2.5	3.0	6.5	4.5	5.5	9.0	7.5	8.0
4	3.5	2.0	2.5	4.0	2.5	3.0	7.0	5.5	6.0	7.5	6.5	7.0
5	3.0	2.5	2.5	3.5	2.5	3.0	6.0	5.0	5.5	7.0	6.0	6.5
6	3.0	2.0	2.5	4.5	2.5	3.0	6.5	5.5	6.0	7.5	5.5	6.5
7	3.5	2.0	2.5	3.5	2.5	3.0	6.5	5.0	6.0	8.0	7.0	7.5
8	3.5	2.5	2.5	5.0	3.5	4.0	6.0	4.5	5.0	8.0	7.0	7.5
9	4.0	2.5	3.0	4.5	3.5	4.0	5.5	4.0	5.0	7.0	6.5	7.0
10	3.5	2.5	3.0	5.5	3.0	4.0	6.5	4.5	5.5	7.0	6.0	6.5
11	4.0	2.0	3.0	5.5	3.0	4.0	6.5	5.0	6.0	6.5	6.0	6.0
12	4.0	2.0	2.5	4.5	3.0	3.5	7.0	5.5	6.5	6.0	5.0	5.5
13	4.0	2.0	2.5	6.0	3.0	4.0	7.0	6.0	6.5	6.0	5.0	5.5
14	3.0	2.5	2.5	4.5	3.5	4.0	7.0	6.0	6.5	6.5	5.5	6.0
15	3.5	2.5	3.0	4.5	3.0	3.5	6.0	4.5	5.0	8.5	6.0	7.0
16	4.0	2.5	3.0	4.0	3.5	3.5	5.5	4.5	5.0	8.5	7.0	8.0
17	4.0	3.0	3.5	4.5	4.0	4.0	6.0	4.5	5.5	8.5	7.5	8.0
18	4.0	3.0	3.5	5.5	4.0	4.5	6.0	5.0	5.5	8.5	7.0	8.0
19	4.0	3.0	3.5	4.5	3.0	4.0	6.5	5.5	6.0	9.0	8.0	8.5
20	4.0	3.0	3.5	5.0	2.5	3.5	6.5	5.5	6.0	8.5	8.0	8.0
21	4.5	3.0	3.5	5.5	3.0	4.0	7.5	5.0	6.0	8.0	7.0	7.5
22	4.5	2.5	3.0	7.0	4.0	5.0	7.5	5.5	6.5	7.0	6.5	6.5
23	4.5	2.0	3.0	5.5	4.5	5.0	8.0	6.5	7.5	7.5	6.0	6.5
24	4.0	2.5	3.0	5.0	4.0	4.5	8.0	6.5	7.5	8.0	6.0	7.0
25	5.0	3.0	4.0	5.5	3.5	4.5	7.5	6.0	7.0	8.5	7.0	7.5
26	5.0	3.5	4.0	5.0	4.0	4.5	8.5	6.5	7.5	8.0	7.0	7.5
27	5.0	3.5	4.0	4.5	4.0	4.0	8.5	7.5	8.0	8.0	7.0	7.5
28	4.5	3.0	3.5	6.0	3.5	4.5	8.0	6.5	7.0	8.0	7.5	7.5
29	5.5	3.0	4.0	6.5	4.0	5.5	7.0	5.0	6.0	7.5	7.0	7.5
30	---	---	---	7.0	4.5	5.5	8.0	6.0	7.0	8.0	7.0	7.5
31	---	---	---	6.0	5.0	5.5	---	---	---	8.0	7.5	7.5
MONTH	5.5	1.5	3.0	7.0	2.5	4.0	8.5	3.5	6.0	9.0	5.0	7.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.5	7.5	8.0	14.0	13.0	13.5	17.5	15.5	16.5	14.5	13.5	14.0
2	9.0	7.5	8.0	14.0	12.5	13.0	16.5	15.5	16.0	13.5	12.5	13.0
3	9.5	8.5	9.0	14.0	13.0	13.5	17.0	15.5	16.0	13.5	12.0	12.5
4	11.0	9.0	10.0	13.0	12.0	12.5	17.0	15.0	16.0	13.5	12.5	13.0
5	10.5	9.5	10.0	13.5	12.0	12.5	17.0	15.0	16.0	13.5	12.5	13.0
6	9.5	8.0	9.0	14.5	12.5	13.5	16.0	15.0	15.5	14.0	12.0	13.0
7	8.0	7.0	7.5	14.0	12.5	13.5	15.0	13.0	14.0	13.5	12.5	13.0
8	8.0	7.0	7.5	12.5	11.0	12.0	16.5	13.5	15.0	14.0	11.5	13.0
9	8.0	7.5	7.5	13.0	11.0	12.0	17.0	15.0	16.0	14.0	12.5	13.0
10	9.0	7.5	8.0	14.5	13.0	13.5	17.0	15.0	16.0	14.0	12.0	13.0
11	9.0	7.5	8.0	14.5	13.0	13.5	17.0	14.5	15.5	13.5	12.5	12.5
12	8.0	7.5	7.5	14.0	12.5	13.5	17.0	15.0	16.0	13.0	12.0	12.5
13	8.5	7.5	8.0	15.0	13.5	14.0	17.0	15.0	16.0	13.0	12.5	12.5
14	9.0	8.0	8.5	16.0	14.0	15.0	17.5	15.0	16.0	12.5	11.5	12.0
15	8.0	7.5	8.0	17.0	15.0	16.0	17.5	15.5	16.0	11.5	11.0	11.5
16	9.5	7.5	8.5	17.5	16.0	16.5	17.5	15.5	16.5	11.5	11.0	11.5
17	9.5	8.5	9.0	17.0	15.5	16.0	18.5	16.0	17.0	12.0	11.0	11.5
18	9.0	7.5	8.5	16.5	15.0	15.5	17.0	15.5	16.0	11.5	11.0	11.0
19	10.0	8.5	9.0	18.0	16.0	16.5	16.5	15.0	16.0	11.0	10.0	10.5
20	9.5	8.5	9.0	17.0	15.5	16.5	16.5	14.5	15.5	11.0	10.0	10.5
21	10.5	8.5	9.5	16.0	14.5	15.5	18.0	15.5	16.5	10.5	10.0	10.0
22	12.0	10.0	11.0	16.5	14.5	15.5	17.0	15.0	16.0	11.0	10.0	10.5
23	13.0	11.0	12.0	17.5	15.5	16.5	16.0	14.0	15.0	11.0	10.5	11.0
24	13.5	12.0	12.5	18.0	15.5	16.5	14.5	13.5	14.0	12.5	11.0	11.5
25	13.0	12.5	12.5	18.0	16.0	17.0	14.0	13.5	14.0	12.5	11.0	11.5
26	12.5	11.0	11.5	18.0	16.0	17.0	13.5	12.5	13.0	12.5	11.0	12.0
27	12.5	11.0	11.5	17.0	15.5	16.0	14.0	13.0	13.5	12.5	11.0	11.5
28	14.0	12.0	13.0	17.0	15.5	16.5	13.5	13.0	13.0	12.5	11.0	11.5
29	14.0	13.0	13.5	17.5	15.5	16.5	14.5	13.0	13.5	12.5	11.0	11.5
30	14.5	13.5	14.0	17.5	15.5	16.5	15.0	13.5	14.0	12.5	11.0	11.5
31	---	---	---	17.0	15.5	16.5	15.0	14.0	14.5	---	---	---
MONTH	14.5	7.0	9.5	18.0	11.0	15.0	18.5	12.5	15.5	14.5	10.0	12.0

12365000 STILLWATER RIVER NEAR WHITEFISH, MT

LOCATION.--Lat 48°19'08", long 114°23'11" (NAD 27), in NE¼SW¼ sec.34, T.30 N., R.22 W., Flathead County, Hydrologic Unit 17010210, on right bank 600 ft downstream from road bridge, 6.2 mi southwest of Whitefish, 14.8 mi upstream from Whitefish River, and at river mile 16.2.

DRAINAGE AREA.--524 mi^2.

PERIOD OF RECORD.--October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to September 1985, April 1986 to September 1999 (seasonal records only), October 1999 to current year.

REVISED RECORDS.--WSP 1736: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,953.26 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Geological Survey satellite telemeter at station. Diversions for irrigation of about 200 acres upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	e70	e64	e58	e62	e78	283	621	518	305	130	204
2	55	e70	e66	e62	e60	e80	319	610	517	328	126	196
3	55	e70	e70	e54	e58	e78	341	601	504	332	124	187
4	54	e66	e66	e50	e60	e80	356	606	483	318	121	179
5	53	e60	e64	e44	e62	e82	376	621	465	312	115	173
6	53	e60	e64	e42	e64	e82	411	631	463	307	114	166
7	53	e61	e66	e50	e62	e84	455	629	466	296	113	158
8	53	e62	e64	e54	e66	e86	512	618	487	289	115	154
9	52	e62	e62	e58	e66	e86	608	604	500	281	117	149
10	52	e62	e60	e62	e70	e88	692	597	501	274	114	144
11	51	e63	e56	e64	e70	e92	722	585	493	264	112	139
12	51	e62	e58	e66	e68	e94	715	579	479	254	110	136
13	52	e64	e61	e70	e62	e102	699	562	465	245	108	137
14	53	e65	e62	e68	e60	e100	704	539	456	237	104	138
15	53	e64	e64	e66	e64	e100	775	516	446	225	97	140
16	55	e66	e64	e68	e66	e106	857	492	439	216	94	143
17	58	e64	e64	e70	e70	e110	892	467	425	207	92	157
18	60	e62	e62	e68	e72	e115	876	447	407	198	91	180
19	61	e64	e60	e66	e72	e120	830	428	391	196	88	210
20	60	e66	e58	e70	e70	e120	773	419	379	192	90	233
21	61	e64	e54	e68	e68	e122	720	428	372	200	92	248
22	62	e60	e58	e70	e70	e124	672	455	359	201	92	256
23	64	e58	e60	e70	e72	133	625	505	345	190	96	256
24	63	e60	e62	e68	e72	147	585	531	332	184	109	247
25	62	e62	e60	e66	e74	152	560	529	319	179	121	234
26	62	e66	e62	e62	e76	167	544	515	318	171	136	221
27	62	e66	e66	e60	e78	182	535	505	319	159	157	208
28	63	e66	e64	e64	e78	197	546	495	314	150	184	197
29	68	e64	e62	e66	e76	210	597	496	304	146	206	187
30	71	e67	e60	e66	---	228	620	505	293	141	212	178
31	71	---	e54	e64	---	249	---	515	---	137	211	---
TOTAL	1,799	1,916	1,917	1,934	1,968	3,794	18,200	16,651	12,559	7,134	3,791	5,555
MEAN	58.0	63.9	61.8	62.4	67.9	122	607	537	419	230	122	185
MAX	71	70	70	70	78	249	892	631	518	332	212	256
MIN	51	58	54	42	58	78	283	419	293	137	88	136
AC-FT	3,570	3,800	3,800	3,840	3,900	7,530	36,100	33,030	24,910	14,150	7,520	11,020
CFSM	0.11	0.12	0.12	0.12	0.13	0.23	1.16	1.03	0.80	0.44	0.23	0.35
IN.	0.13	0.14	0.14	0.14	0.14	0.27	1.29	1.18	0.89	0.51	0.27	0.39

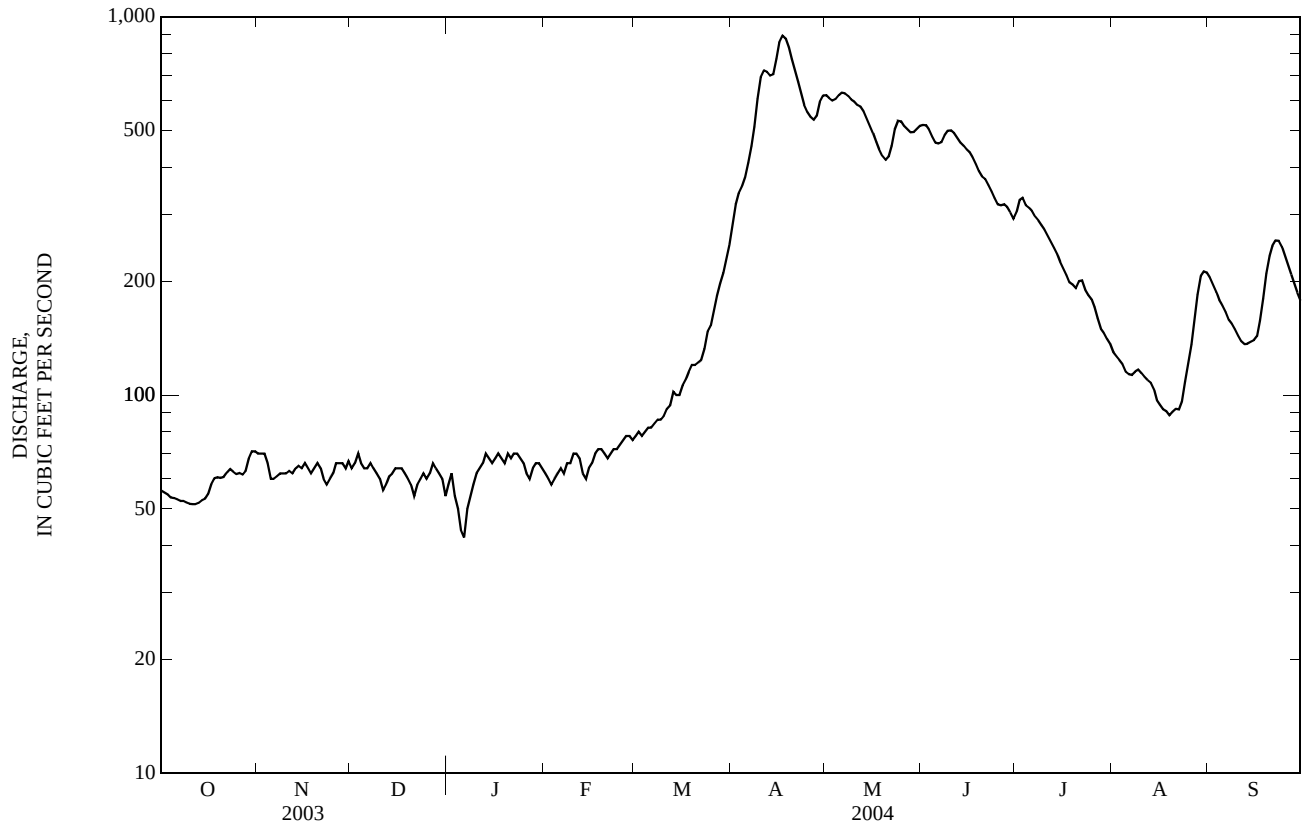
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2004, BY WATER YEAR (WY)*

MEAN	112	126	119	113	114	160	658	1,165	854	372	175	125
MAX	271	300	582	495	588	548	1,857	3,125	1,916	952	505	315
(WY)	(1948)	(1990)	(1996)	(1934)	(1996)	(1996)	(1996)	(1997)	(1974)	(1993)	(1993)	(1993)
MIN	46.5	53.9	50.7	59.2	60.1	76.7	138	265	235	94.5	55.5	43.1
(WY)	(2002)	(1945)	(1945)	(1940)	(1993)	(1977)	(1945)	(1944)	(1977)	(1977)	(1941)	(2001)

12365000 STILLWATER RIVER NEAR WHITEFISH, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1931 - 2004*	
ANNUAL TOTAL	69,350		77,218			
ANNUAL MEAN	190		211		336	
HIGHEST ANNUAL MEAN					747	1996
LOWEST ANNUAL MEAN					124	1944
HIGHEST DAILY MEAN	706	Apr 28	892	Apr 17	4,560	May 18, 1997
LOWEST DAILY MEAN	48	Sep 3	42	Jan 6	17	Aug 17, 1992
ANNUAL SEVEN-DAY MINIMUM	50	Sep 2	50	Jan 3	37	Sep 6, 1988
MAXIMUM PEAK FLOW			896	Apr 17	a4,570	May 18, 1997
MAXIMUM PEAK STAGE			7.45	Apr 17	b20.90	May 26, 1948
INSTANTANEOUS LOW FLOW					c2.9	Aug 18, 1992
ANNUAL RUNOFF (AC-FT)	137,600		153,200		243,800	
ANNUAL RUNOFF (CFSM)	0.363		0.403		0.642	
ANNUAL RUNOFF (INCHES)	4.92		5.48		8.73	
10 PERCENT EXCEEDS	538		532		935	
50 PERCENT EXCEEDS	105		112		140	
90 PERCENT EXCEEDS	58		60		70	

*--During periods of operation [October and November 1930 (monthly discharge only, published in WSP 1316), December 1930 to September 1950, October 1972 to September 1985, April 1986 to September 1999 (seasonal record only), October 1999 to current year].
a--Gage height, 20.20 ft.
b--From floodmark.
c--Result of upstream mud slide.
e--Estimated.



12366000 WHITEFISH RIVER NEAR KALISPELL, MT

LOCATION.--Lat 48°19'13", long 114°16'39" (NAD 27), in SW¼SE¼NW¼ sec.34, T.30 N., R.21 W., Flathead County, Hydrologic Unit 17010210, on right bank 160 ft upstream from road bridge, 8.0 mi north of Kalispell, and at river mile 12.8.

DRAINAGE AREA.--170 mi^2.

PERIOD OF RECORD.--July to November 1928, April 1929 to September 1950, annual maximum 1964, October 1972 to September 1985, April 1986 to September 1995, October 1995 to September 1999 (seasonal record only), October 1999 to current year. Prior to 1964, published as Whitefish Creek near Kalispell.

GAGE.--Water-stage recorder. Elevation of gage is 2,969.83 ft (NGVD 29). Prior to Oct. 16, 1930, nonrecording gage at site 200 ft downstream at elevation 10.00 ft lower. Oct. 16, 1930, to Sept. 30, 1950, water-stage recorder on left bank at same elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Whitefish Lake. Diversion for irrigation of about 650 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	49	53	e42	e49	53	114	397	472	300	123	132
2	44	48	52	e44	e48	52	115	400	469	298	118	135
3	45	47	52	e42	e46	51	118	408	462	288	112	132
4	45	46	52	e42	e43	52	125	422	457	279	110	131
5	45	45	51	e40	e42	53	139	440	457	274	108	131
6	44	44	51	e36	e44	54	150	450	465	263	106	130
7	44	e43	51	e32	e46	54	165	456	472	259	105	129
8	43	42	52	e35	e44	54	183	461	472	252	103	127
9	45	e42	53	e40	e46	55	218	475	463	241	100	127
10	42	41	e52	e42	e47	56	219	479	460	235	98	125
11	41	42	e50	e44	e48	56	225	482	458	226	95	125
12	41	42	e46	e46	e48	57	239	481	454	220	95	125
13	41	42	e48	e48	e47	57	255	475	448	213	94	128
14	41	42	e49	e49	e45	58	290	467	439	203	90	133
15	41	43	e52	e48	e44	58	323	459	435	195	87	136
16	48	44	e51	e46	e46	58	335	448	423	189	84	144
17	45	45	e49	e47	e48	58	355	434	411	181	82	148
18	45	46	e47	e46	e50	62	358	421	399	173	85	152
19	45	47	e46	e46	e52	69	361	415	388	171	83	164
20	45	48	e44	e46	e56	72	363	414	378	182	85	169
21	45	50	e42	e45	e54	72	395	422	370	181	83	178
22	44	51	e44	e46	e53	72	390	435	361	173	83	184
23	45	e53	e46	e45	e52	75	381	442	350	165	90	187
24	44	53	e45	e46	e50	77	378	433	339	159	94	188
25	42	e53	e42	e47	e48	78	369	424	330	154	109	188
26	42	51	e44	e48	e49	81	364	422	326	148	136	188
27	43	e51	e46	e48	e50	85	362	431	321	141	138	187
28	45	50	e45	e46	e52	86	381	440	312	135	137	186
29	59	52	e44	e44	e52	87	393	456	302	133	132	185
30	54	54	e42	e42	---	93	395	471	295	130	133	181
31	50	---	e40	e46	---	106	---	474	---	126	132	---
TOTAL	1,388	1,406	1,481	1,364	1,399	2,051	8,458	13,734	12,188	6,287	3,230	4,575
MEAN	44.8	46.9	47.8	44.0	48.2	66.2	282	443	406	203	104	152
MAX	59	54	53	49	56	106	395	482	472	300	138	188
MIN	41	41	40	32	42	51	114	397	295	126	82	125
AC-FT	2,750	2,790	2,940	2,710	2,770	4,070	16,780	27,240	24,170	12,470	6,410	9,070
CFSM	0.26	0.28	0.28	0.26	0.28	0.39	1.66	2.61	2.39	1.19	0.61	0.90
IN.	0.30	0.31	0.32	0.30	0.31	0.45	1.85	3.01	2.67	1.38	0.71	1.00

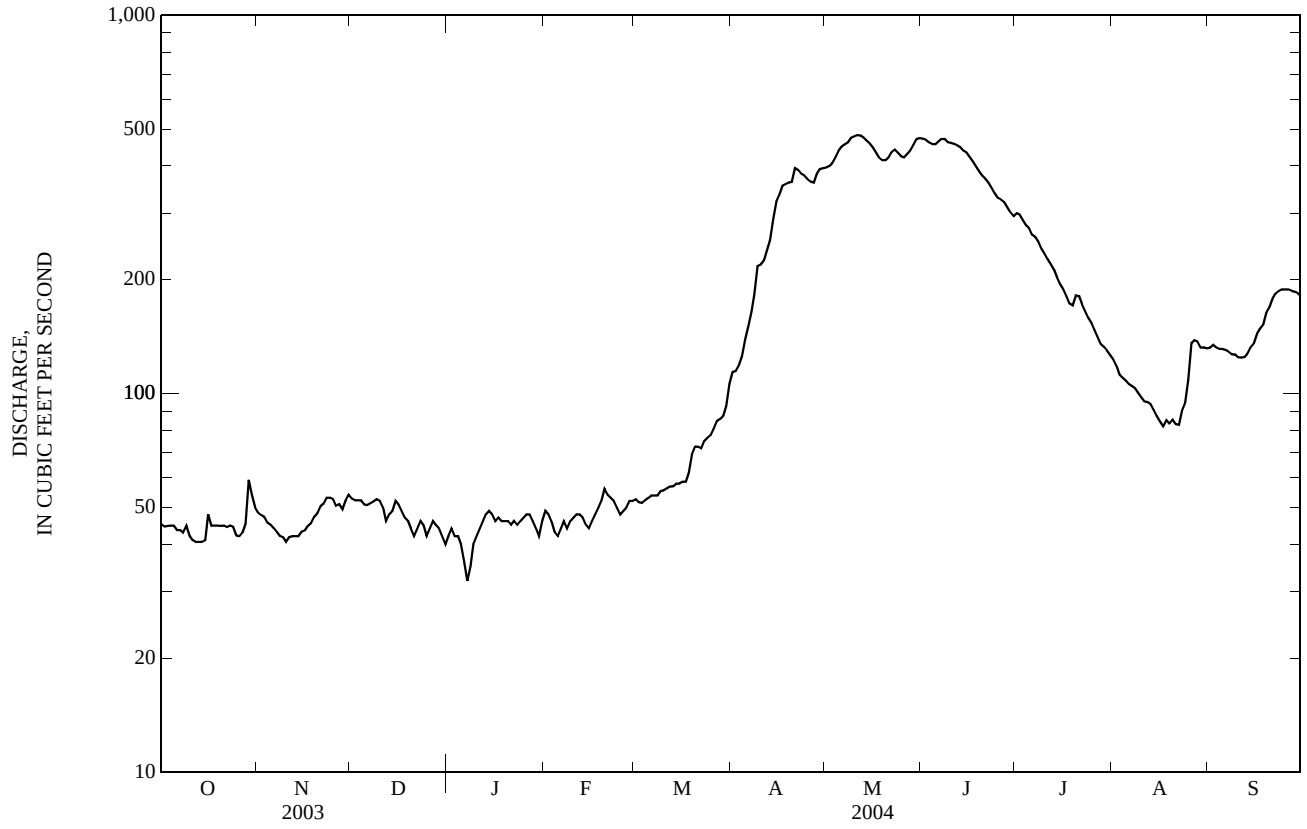
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2004, BY WATER YEAR (WY)*

MEAN	67.9	70.6	70.7	66.6	64.8	94.5	227	529	604	273	111	81.9
MAX	150	177	231	209	157	212	549	895	1,194	695	238	152
(WY)	(1948)	(1934)	(1934)	(1934)	(1934)	(1936)	(1934)	(1997)	(1974)	(1974)	(1993)	(2004)
MIN	9.98	20.1	23.0	13.9	15.5	48.2	83.4	214	211	88.5	29.5	23.9
(WY)	(1931)	(1937)	(1936)	(1938)	(1938)	(2001)	(2001)	(1944)	(1977)	(1941)	(1931)	(1931)

12366000 WHITEFISH RIVER NEAR KALISPELL, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1930 - 2004*	
ANNUAL TOTAL	50,599		57,561			
ANNUAL MEAN	139		157		186	
HIGHEST ANNUAL MEAN					320	1974
LOWEST ANNUAL MEAN					88.9	2001
HIGHEST DAILY MEAN	581	Jun 11	482	May 11	1,580	Jun 23, 1974
LOWEST DAILY MEAN	37	Feb 25	32	Jan 7	5.0	Oct 17, 1934
ANNUAL SEVEN-DAY MINIMUM	42	Oct 9	38	Jan 3	5.3	Oct 15, 1934
MAXIMUM PEAK FLOW			484	May 11	1,580	Jun 24, 1974
MAXIMUM PEAK STAGE			2.85	May 11	4.91	Jun 24, 1974
INSTANTANEOUS LOW FLOW					4.5	Oct 18, 1934
ANNUAL RUNOFF (AC-FT)	100,400		114,200		134,400	
ANNUAL RUNOFF (CFSM)	0.815		0.925		1.09	
ANNUAL RUNOFF (INCHES)	11.07		12.60		14.83	
10 PERCENT EXCEEDS	362		426		503	
50 PERCENT EXCEEDS	56		84		91	
90 PERCENT EXCEEDS	44		44		43	

*--During periods of operation (July to November 1928, April 1929 to September 1950, annual maximum 1964, October 1972 to September 1985, April 1986 to September 1995, October 1995 to September 1999 (seasonal record only), October 1999 to current year.
e--Estimated.



12370000 SWAN RIVER NEAR BIGFORK, MT

LOCATION.--Lat 48°01'28", long 113°58'44" (NAD 27), near center of S½SW¼ sec.11, T.26 N., R.19 W., Lake County, Hydrologic Unit 17010211, on left bank 0.2 mi downstream from Johnson Creek, 0.4 mi downstream from Swan Lake, 5.1 mi southeast of Bigfork, and at river mile 14.0.

DRAINAGE AREA.--671 mi^2.

PERIOD OF RECORD.--October 1910 to May 1911 (gage heights only), April 1922 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1246: 1923-24(M), 1930. WSP 1316: 1923.

GAGE.--Water-stage recorder. Elevation of gage is 3,062.6 ft (NGVD 29) (from river-profile survey). Oct. 10, 1910, to May 22, 1911, nonrecording gage at site 10 mi upstream at different elevation. Apr. 28, 1922, to Oct. 14, 1930, nonrecording gage at site 800 ft upstream at elevation 1.9 ft higher.

REMARKS.--Records good. Diversions for irrigation of about 360 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	629	431	317	362	364	1,130	1,470	2,630	1,880	645	875
2	309	624	439	312	358	372	1,170	1,480	2,540	1,850	625	824
3	312	610	441	313	351	375	1,160	1,580	2,400	1,800	594	786
4	304	595	444	306	343	380	1,140	1,840	2,300	1,730	583	754
5	300	569	428	295	339	386	1,140	2,150	2,340	1,680	570	720
6	300	538	435	281	343	383	1,190	2,440	2,570	1,620	544	696
7	297	497	440	272	337	373	1,290	2,590	2,890	1,540	566	659
8	294	474	452	276	334	370	1,400	2,620	3,030	1,490	563	635
9	307	452	449	285	330	383	1,550	2,660	2,820	1,430	552	607
10	306	451	433	298	324	401	1,650	2,630	2,590	1,340	532	581
11	307	460	418	312	318	437	1,640	2,510	2,460	1,290	520	569
12	307	472	418	321	313	469	1,590	2,360	2,480	1,230	501	563
13	314	471	417	326	299	501	1,540	2,160	2,550	1,160	482	571
14	318	456	431	328	294	547	1,600	1,960	2,520	1,110	468	592
15	328	445	432	329	290	571	1,790	1,760	2,460	1,070	451	619
16	337	440	429	325	297	593	1,920	1,580	2,360	1,030	441	682
17	340	427	411	324	305	631	1,890	1,470	2,200	995	441	768
18	342	422	406	322	319	685	1,790	1,400	2,050	971	450	879
19	340	414	377	322	332	814	1,670	1,380	1,930	952	452	985
20	338	426	362	318	344	1,010	1,540	1,390	1,830	956	449	1,100
21	341	436	351	317	353	1,070	1,430	1,470	1,750	946	455	1,150
22	347	430	358	315	357	1,080	1,330	1,640	1,700	936	443	1,150
23	342	429	357	314	355	1,090	1,240	1,820	1,700	909	466	1,110
24	341	416	344	330	354	1,120	1,150	1,920	1,740	878	511	1,060
25	345	410	346	336	358	1,160	1,130	1,920	1,840	832	571	1,010
26	343	404	351	339	364	1,200	1,120	1,860	1,960	800	650	944
27	342	402	355	333	361	1,220	1,130	1,900	2,030	763	769	906
28	363	404	361	339	362	1,200	1,210	2,130	2,030	744	888	858
29	436	412	341	343	365	1,170	1,360	2,420	1,980	714	964	810
30	538	423	331	358	---	1,130	1,450	2,600	1,920	689	965	775
31	596	---	321	362	---	1,100	---	2,640	---	665	928	---
TOTAL	10,646	14,038	12,309	9,868	9,761	22,585	42,340	61,750	67,600	36,000	18,039	24,238
MEAN	343	468	397	318	337	729	1,411	1,992	2,253	1,161	582	808
MAX	596	629	452	362	365	1,220	1,920	2,660	3,030	1,880	965	1,150
MIN	294	402	321	272	290	364	1,120	1,380	1,700	665	441	563
AC-FT	21,120	27,840	24,410	19,570	19,360	44,800	83,980	122,500	134,100	71,410	35,780	48,080
CFSM	0.51	0.70	0.59	0.47	0.50	1.09	2.10	2.97	3.36	1.73	0.87	1.20
IN.	0.59	0.78	0.68	0.55	0.54	1.25	2.35	3.42	3.75	2.00	1.00	1.34

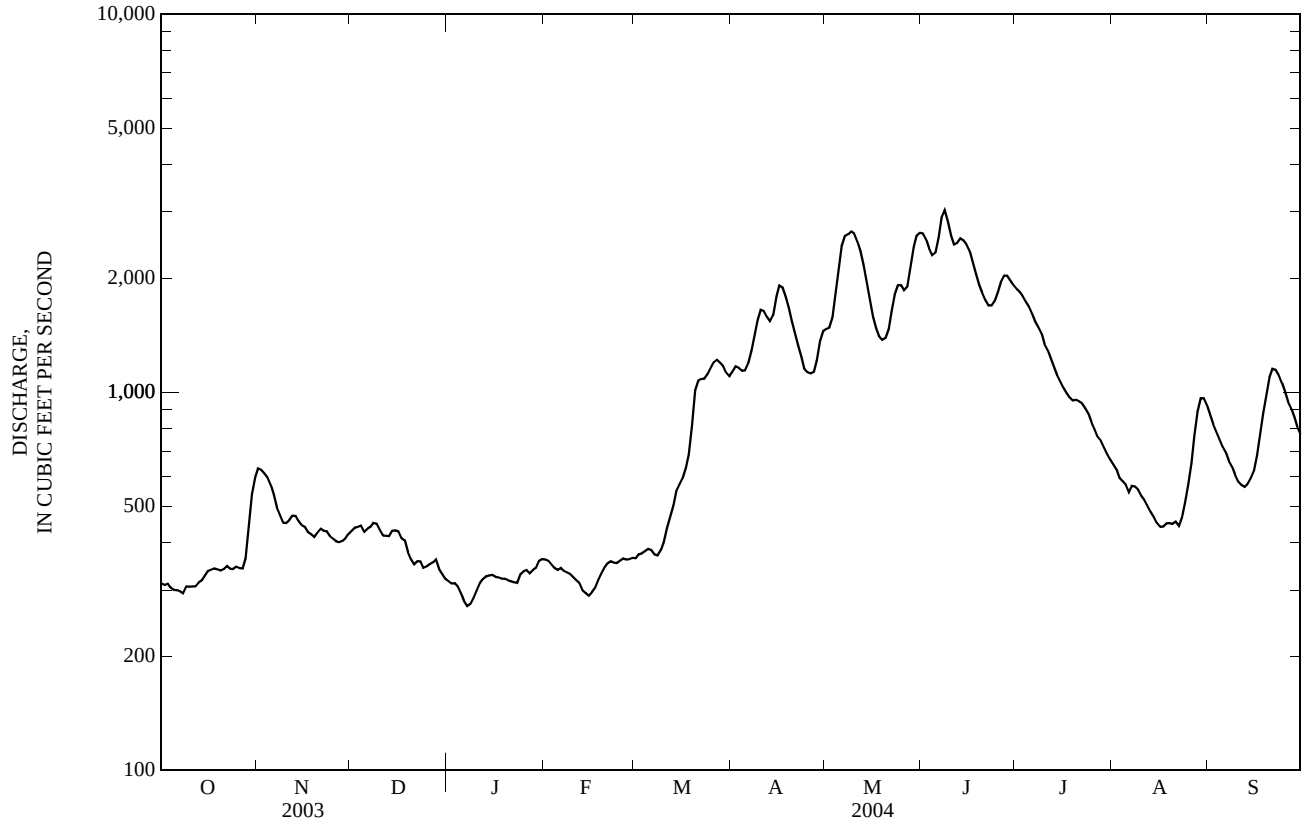
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2004, BY WATER YEAR (WY)

MEAN	546	590	565	494	496	627	1,515	2,815	3,281	1,625	693	537
MAX	1,682	1,514	1,796	1,298	1,627	1,813	3,228	5,469	5,803	3,310	1,225	1,096
(WY)	(1960)	(1928)	(1934)	(1934)	(1971)	(1986)	(1925)	(1928)	(1974)	(1950)	(1950)	(1965)
MIN	308	290	307	271	236	244	675	1,670	1,433	609	322	285
(WY)	(1938)	(1937)	(1937)	(1930)	(1930)	(1930)	(1937)	(1941)	(1941)	(1941)	(1941)	(1988)

12370000 SWAN RIVER NEAR BIGFORK, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1922 - 2004	
ANNUAL TOTAL	313,754		329,174			
ANNUAL MEAN	860		899		1,150	
HIGHEST ANNUAL MEAN					1,860	1928
LOWEST ANNUAL MEAN					607	1941
HIGHEST DAILY MEAN	5,220	Jun 2	3,030	Jun 8	8,800	Jun 21, 1974
LOWEST DAILY MEAN	287	Sep 8	272	Jan 7	193	Jan 26, 1930
ANNUAL SEVEN-DAY MINIMUM	297	Sep 2	288	Jan 4	195	Jan 26, 1930
MAXIMUM PEAK FLOW			3,150	Jun 8	8,890	Jun 20, 1974
MAXIMUM PEAK STAGE			4.58	Jun 8	7.34	Jun 20, 1974
INSTANTANEOUS LOW FLOW			258	Jan 8	a193	Jan 26, 1930
ANNUAL RUNOFF (AC-FT)	622,300		652,900		833,000	
ANNUAL RUNOFF (CFSM)	1.28		1.34		1.71	
ANNUAL RUNOFF (INCHES)	17.39		18.25		23.28	
10 PERCENT EXCEEDS	1,780		1,940		2,830	
50 PERCENT EXCEEDS	440		570		630	
90 PERCENT EXCEEDS	314		319		362	

a--Jan. 26-29, 1930, site and datum then in use.



12371550 FLATHEAD LAKE AT POLSON, MT

LOCATION.--Lat 47°41'50", long 114°09'37" (NAD 27), in SW¼SE¼NE¼ sec.4, T.22 N., R.20 W., Lake County, Hydrologic Unit 17010208, at Polson.
DRAINAGE AREA.--7,086 mi^2.
PERIOD OF RECORD.--October 1, 1998 to current year. April to August 1900, daily lake elevations only, at site near Holt, 6 mi east of Somers (elevation unknown). August 1908 to November 1909 (fragmentary), January 1910 to Sept.30, 1998 published as "at Somers". Monthend contents only for some periods, published in WSP 1316. Prior to April 1923, published as "at Polson." Oct. 1, 1941 to Sept. 30, 1998, unpublished daily lake elevations at Polson are available in files of Helena district office.
GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above local (Somers) datum of 2,799 ft (NGVD 29). July 1 to Dec. 12, 1923, nonrecording gage at Somers site.
REMARKS--Natural storage in Flathead Lake increased by construction of Kerr Dam 4 mi downstream from natural lake outlet; storage began Apr. 11, 1938. Usable capacity, 1,791,000 acre-ft at controlled spillway elevation 2,893.00 ft. Dead storage unknown below 2,878 ft, elevation of natural outlet. Minimum operating level, 572,300 acre-ft, elevation 2,883.00 ft for on-site power generation. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Water is used for power production, flood control, recreation, and irrigation. Figures given herein represent usable contents. U.S. Geological Survey satellite telemeter at station.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,208,000 acre-ft, June 19, 1933, elevation, 2,896.26 ft; minimum, 347,000 acre-ft, Dec. 5, 1936, elevation, 2,881.07 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,791,000 acre-ft, Aug. 27, elevation, 2,893.00 ft; minimum, 640,000 acre-ft, Mar. 27, elevation, 2,883.57 ft.

CAPACITY TABLE (ELEVATION, IN FEET AND CONTENTS, IN ACRE-FT)

Elevation	Contents
2,883	572,300
2,886	930,300
2,888	1,172,000
2,890	1,417,000
2,892	1,665,000
2,894	1,917,000

ELEVATION OF RESERVOIR WATER SURFACE ABOVE DATUM, FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,892.50	2,892.41	2,890.00	2,887.49	2,886.21	2,884.69	2,883.71	2,888.57	2,891.39	2,892.86	2,892.72	2,892.87
2	2,892.48	2,892.38	2,889.90	2,887.46	2,886.20	2,884.64	2,883.80	2,888.72	2,891.40	2,892.86	2,892.73	2,892.80
3	2,892.48	2,892.35	2,889.79	2,887.47	2,886.16	2,884.55	2,883.85	2,888.90	2,891.44	2,892.85	2,892.73	2,892.84
4	2,892.48	2,892.21	2,889.75	2,887.28	2,886.12	2,884.49	2,883.90	2,889.16	2,891.53	2,892.87	2,892.73	2,892.84
5	2,892.47	2,892.11	2,889.68	e2,887.17	2,886.09	2,884.40	2,883.98	2,889.47	2,891.63	2,892.88	2,892.74	2,892.84
6	2,892.47	2,892.02	2,889.61	e2,887.09	2,886.07	2,884.28	2,884.07	2,889.84	2,891.70	2,892.86	2,892.76	2,892.85
7	2,892.44	2,891.93	2,889.57	e2,887.00	2,886.03	2,884.27	2,884.20	2,890.14	2,891.93	2,892.83	2,892.74	2,892.83
8	2,892.45	2,891.85	2,889.49	2,886.91	2,886.00	2,884.24	2,884.39	2,890.40	2,892.12	2,892.81	2,892.76	2,892.80
9	2,892.42	2,891.77	2,889.41	2,886.83	2,885.97	2,884.17	2,884.57	2,890.60	2,892.27	2,892.82	2,892.81	2,892.75
10	2,892.41	2,891.68	2,889.36	2,886.76	2,885.94	2,884.14	2,884.74	2,890.86	2,892.36	2,892.80	2,892.82	2,892.76
11	2,892.42	2,891.59	2,889.25	2,886.70	2,885.90	2,884.08	2,884.92	2,891.14	2,892.43	2,892.73	2,892.80	2,892.74
12	2,892.38	2,891.54	2,889.12	2,886.65	2,885.83	2,884.01	2,885.08	2,891.19	2,892.54	2,892.73	2,892.80	2,892.71
13	2,892.36	2,891.46	2,889.06	2,886.62	2,885.76	2,883.97	2,885.25	2,891.24	2,892.58	2,892.72	2,892.80	2,892.73
14	2,892.41	2,891.37	2,889.00	2,886.60	2,885.68	2,883.91	2,885.44	2,891.26	2,892.63	2,892.70	2,892.79	2,892.69
15	2,892.41	2,891.29	2,888.91	2,886.58	2,885.62	2,883.83	2,885.71	2,891.24	2,892.75	2,892.68	2,892.79	2,892.71
16	2,892.41	2,891.19	2,888.83	2,886.57	2,885.56	2,883.76	2,886.01	2,891.17	2,892.80	2,892.66	2,892.79	2,892.74
17	2,892.41	2,891.08	2,888.73	2,886.55	2,885.50	2,883.73	2,886.27	2,891.14	2,892.85	2,892.66	2,892.76	2,892.78
18	2,892.44	2,890.94	2,888.68	2,886.52	2,885.45	2,883.65	2,886.48	2,891.15	2,892.81	2,892.65	2,892.78	2,892.82
19	2,892.43	2,890.85	2,888.57	2,886.53	2,885.38	2,883.65	2,886.66	2,891.19	2,892.79	2,892.66	2,892.79	2,892.89
20	2,892.45	2,890.85	2,888.48	2,886.51	2,885.32	2,883.71	2,886.83	2,891.26	2,892.76	2,892.64	2,892.81	2,892.88
21	2,892.45	2,890.87	2,888.40	2,886.48	2,885.26	2,883.69	2,887.01	2,891.36	2,892.74	2,892.71	2,892.76	2,892.86
22	2,892.48	2,890.71	2,888.31	2,886.45	2,885.20	2,883.66	2,887.13	2,891.48	2,892.76	2,892.78	2,892.76	2,892.86
23	2,892.42	2,890.62	2,888.23	2,886.42	2,885.13	2,883.62	2,887.22	2,891.54	2,892.79	2,892.78	2,892.75	2,892.89
24	2,892.46	2,890.51	2,888.15	2,886.42	2,885.07	2,883.58	2,887.34	2,891.49	2,892.86	2,892.76	2,892.77	2,892.89
25	2,892.46	2,890.40	2,888.06	2,886.43	2,885.01	2,883.61	2,887.49	2,891.42	2,892.90	2,892.75	2,892.80	2,892.88
26	2,892.48	2,890.35	2,887.99	2,886.36	2,884.94	2,883.58	2,887.63	2,891.38	2,892.95	2,892.72	2,892.90	2,892.85
27	2,892.47	2,890.28	2,887.89	2,886.31	2,884.87	2,883.57	2,887.71	2,891.39	2,892.91	2,892.76	2,893.00	2,892.80
28	2,892.45	2,890.20	2,887.82	2,886.28	2,884.81	2,883.62	2,887.97	2,891.39	2,892.89	2,892.75	2,892.95	2,892.74
29	2,892.57	2,890.08	2,887.80	2,886.27	2,884.74	2,883.65	2,888.16	2,891.38	2,892.87	2,892.73	2,892.93	2,892.67
30	2,892.58	2,890.07	2,887.65	2,886.23	---	2,883.65	2,888.38	2,891.40	2,892.87	2,892.72	2,892.89	2,892.65
31	2,892.47	---	2,887.56	2,886.21	---	2,883.65	---	2,891.42	---	2,892.72	2,892.89	---
MAX	2,892.58	2,892.41	2,890.00	2,887.49	2,886.21	2,884.69	2,888.38	2,891.54	2,892.95	2,892.88	2,893.00	2,892.89
MIN	2,892.36	2,890.07	2,887.56	2,886.21	2,884.74	2,883.57	2,883.71	2,888.57	2,891.39	2,892.64	2,892.72	2,892.65

CONTENTS, IN THOUSANDS OF ACRE-FEET, AT THE END OF MONTH

1,724	1,426	1,119	956	779	649	1,218	1,593	1,775	1,756	1,777	1,747

CHANGE IN CONTENTS, IN ACRE-FEET

-5,000	-298,000	-307,000	-163,000	-177,000	-130,000	569,000	375,000	182,000	-19,000	-21,000	-30,000

CALENDAR YEAR 2003 . . . . . -73,000
WATER YEAR 2004 . . . . . +18,000

e--Estimated.

12372000 FLATHEAD RIVER NEAR POLSON, MT

LOCATION.--Lat 47°40'49", long 114°14'45" (NAD 27), in SW¼NE¼SE¼ sec. 11, T.22 N., R.21 W., Lake County, Hydrologic Unit 17010212, on left bank 0.5 mi downstream from Kerr Dam, 4.0 mi west of Polson, 5.0 mi downstream from Flathead Lake, and at river mile 71.5.

DRAINAGE AREA.--7,096 mi^2.

PERIOD OF RECORD.--July 1907 to current year.

REVISED RECORDS.--WSP 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1928(M). WSP 1636: 1958 (adjusted runoff).

GAGE.--Water-stage recorder. Elevation of gage is 2,692.70 ft (NGVD 29) (levels by The Montana Power Co.). Prior to Oct. 1, 1941, nonrecording gages or water-stage recorder at several sites near highway bridge at old site of Michell's ferry 6 mi downstream from present site, all at elevation 2,629.20 ft (from river-profile survey).

REMARKS.--Records excellent. Flow regulated by Flathead Lake (Kerr Dam) since April 1938 (station number 12371500) and Hungry Horse Reservoir (station number 12362000) since September 1951. Diversions upstream from station for irrigation of about 10,000 acres. Flathead project pumps can divert up to 12,000 acre-ft per month when required for irrigation of lands downstream from station. U.S.Geological Survey satellite telemeter at station. Two observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--97 years, 11,490 ft^3/s, 21.99 in/yr, 8,325,000 acre-ft/yr, adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,800 ft^3/s, May 29, 1928, gage height, 17.2 ft, site and elevation then in use; minimum probably less than 5.0 ft^3/s, Apr. 13, 1938; minimum daily, 32 ft^3/s, Apr. 12, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a stage of about 21 ft, present elevation; discharge, about 110,000 ft^3/s, from lake elevation-discharge study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,300 ft^3/s, May 31, gage height, 10.70 ft; minimum daily, 3,320 ft^3/s, Apr. 10, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,540	6,360	9,130	9,110	5,940	8,170	5,080	5,330	21,100	18,700	8,980	12,000
2	3,500	7,410	9,120	9,090	5,980	8,170	4,630	5,800	18,500	18,400	8,980	11,500
3	3,530	8,060	9,010	9,070	6,000	8,170	4,630	6,500	16,400	18,300	8,980	10,400
4	3,470	8,580	9,000	8,400	6,040	8,170	4,650	7,110	15,300	18,100	8,770	9,480
5	3,450	8,970	9,040	8,720	6,060	8,130	4,580	7,580	15,200	18,000	8,000	9,340
6	3,430	8,950	9,100	9,080	6,060	8,120	4,420	8,140	15,200	17,400	8,040	9,320
7	3,430	8,950	9,090	9,060	6,070	8,090	3,700	8,590	15,100	16,800	8,080	8,770
8	3,430	8,910	9,120	9,080	6,060	8,080	3,370	9,350	15,100	16,700	8,060	8,230
9	3,460	8,910	9,130	8,990	6,030	8,110	3,330	10,300	15,100	16,700	8,180	7,680
10	3,490	8,990	9,160	8,290	6,530	8,080	3,320	11,300	15,200	16,400	8,220	7,140
11	3,510	8,990	9,180	7,580	7,500	8,080	3,340	12,700	15,200	15,900	8,240	7,090
12	3,460	8,990	9,170	6,660	8,060	7,890	3,360	15,700	15,200	15,400	8,190	7,090
13	3,470	9,020	9,100	5,610	8,130	7,540	3,340	17,900	15,200	14,800	8,050	7,140
14	3,480	9,030	9,100	5,170	8,110	7,540	3,330	18,700	15,200	14,500	8,010	7,130
15	3,500	9,060	9,140	5,190	8,080	7,570	3,320	18,700	16,500	13,900	8,140	7,130
16	3,460	8,960	9,110	5,220	8,050	6,940	3,340	17,500	18,200	12,900	8,450	7,140
17	3,430	9,020	9,160	5,230	8,070	6,720	3,420	15,600	19,300	12,400	8,080	7,660
18	3,400	9,120	9,200	5,230	8,100	6,680	3,570	14,800	19,000	12,400	8,040	8,790
19	3,410	9,070	9,190	5,230	8,100	6,450	3,640	14,800	17,200	11,900	7,980	11,100
20	3,410	9,070	9,190	5,620	8,090	6,600	3,760	14,800	15,600	11,500	7,980	12,500
21	3,440	9,080	9,180	6,000	8,090	6,790	3,900	15,700	15,300	10,800	8,020	12,500
22	3,460	9,120	9,110	5,990	8,070	6,710	4,020	18,200	15,300	10,400	8,040	10,900
23	3,460	9,110	9,030	5,980	7,880	6,580	4,150	20,200	15,300	10,500	8,030	9,970
24	3,480	9,150	9,040	5,960	8,140	6,470	4,250	21,000	15,300	10,300	8,120	11,400
25	3,500	9,090	9,030	5,930	8,290	6,410	4,380	21,000	16,500	10,300	8,120	11,800
26	3,500	9,010	9,070	5,940	8,230	6,410	4,500	20,900	18,900	10,200	8,540	11,800
27	3,490	9,010	9,040	6,060	8,210	6,520	4,650	20,900	20,000	10,100	13,300	11,800
28	3,640	9,010	9,030	6,020	8,220	6,660	4,770	20,900	19,700	9,550	16,000	11,700
29	4,180	9,030	9,010	6,020	8,210	6,750	4,820	20,900	19,400	9,210	16,000	11,800
30	4,620	9,120	9,010	5,960	---	6,690	4,990	20,900	19,300	9,130	14,500	11,900
31	5,300	---	9,100	5,960	---	6,090	---	22,100	---	9,030	12,900	---
TOTAL	111,330	265,150	282,090	211,450	214,400	225,380	120,560	463,900	503,800	420,620	287,020	292,200
MEAN	3,591	8,838	9,100	6,821	7,393	7,270	4,019	14,960	16,790	13,570	9,259	9,740
MAX	5,300	9,150	9,200	9,110	8,290	8,170	5,080	22,100	21,100	18,700	16,000	12,500
MIN	3,400	6,360	9,000	5,170	5,940	6,090	3,320	5,330	15,100	9,030	7,980	7,090
AC-FT	220,800	525,900	559,500	419,400	425,300	447,000	239,100	920,100	999,300	834,300	569,300	579,600
CFSM	0.51	1.25	1.28	0.96	1.04	1.02	0.57	2.11	2.37	1.91	1.30	1.37
IN.	0.58	1.39	1.48	1.11	1.12	1.18	0.63	2.43	2.64	2.21	1.50	1.53
AC-FT†	-77,000	-342,000	-401,000	-278,000	-287,000	-115,000	+941,000	+742,000	+408,000	-177,000	-222,000	-78,000

12372000 FLATHEAD RIVER NEAR POLSON, MT—Continued

ADJUSTED FOR CHANGE IN CONTENTS IN HUNGRY HORSE RESERVOIR AND FLATHEAD LAKE

MEAN	2,339	3,090	2,578	2,300	2,404	5,399	19,830	27,030	23,650	10,690	5,648	8,430
CFSM	0.33	0.44	0.36	0.33	0.34	0.76	2.81	3.82	3.35	1.51	0.80	1.19
IN.	0.38	0.49	0.42	0.38	0.37	0.88	3.13	4.41	3.73	1.74	0.92	1.33
AC-FT	143,800	183,900	158,500	141,400	138,300	332,000	1,180,000	1,662,000	1,470,000	657,300	347,300	501,600

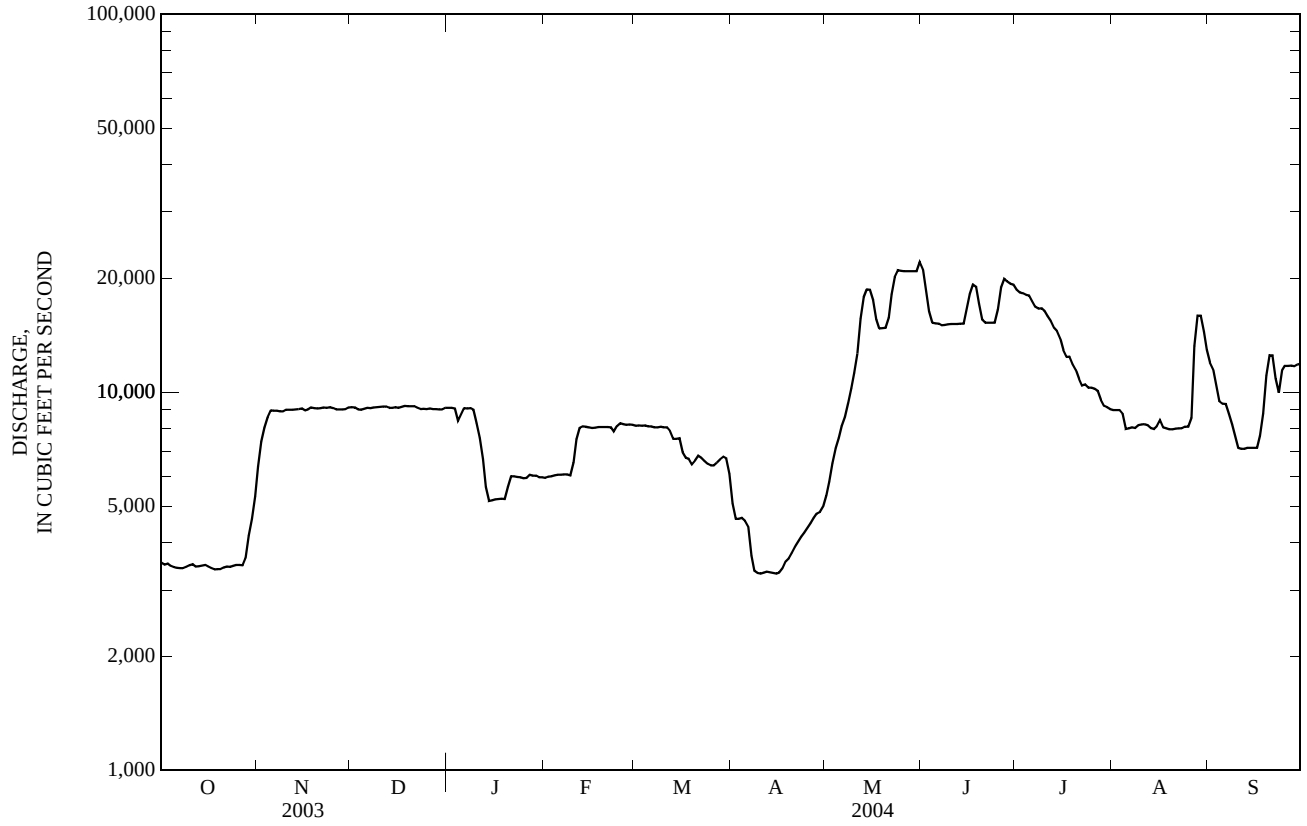
OBSERVED

CAL YR 2003	TOTAL	3,053,270	MEAN	8,365	MAX	26,900	MIN	3,400	AC-FT	6,056,000	† +42,000
WTR YR 2004	TOTAL	3,396,700	MEAN	9,281	MAX	22,100	MIN	3,320	AC-FT	6,740,000	†+114,000

ADJUSTED

CAL YR 2003	TOTAL	3,074,212	MEAN	8,422	CFSM	1.19	IN	16.17	AC-FT	6,098,000
WTR YR 2004	TOTAL	3,455,306	MEAN	9,441	CFSM	1.34	IN	18.18	AC-FT	6,854,000

† Change in contents in acre-feet, in Hungry Horse Reservoir and Flathead Lake.



12374250 MILL CREEK ABOVE BASSOO CREEK, NEAR NIARADA, MT

LOCATION.--Lat 47°49'47", long 114°41'48" (NAD 27), in SE¼NW¼NE¼ sec.20, T.24 N., R.24 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 0.3 mi upstream from Bassoo Creek, and 4.1 mi northwest of Niarada.

DRAINAGE AREA.--19.6 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,000 ft (NGVD 29). Prior to Sept. 23, 1987, at site 305 ft downstream at different elevation. Prior to July 23, 1991, at site 275 ft downstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	e1.6	2.3	e2.0	e2.2	2.3	6.1	8.3	22	5.8	3.0	2.4
2	1.4	e1.7	2.3	e1.9	e2.1	2.4	5.8	8.4	21	5.5	2.9	2.5
3	1.3	e1.7	2.5	e1.7	e2.0	e2.3	5.5	8.5	20	5.3	2.9	2.5
4	1.3	e1.7	e2.6	e1.3	e2.0	2.3	5.6	8.9	18	5.6	3.0	2.6
5	1.3	e1.8	e2.3	e1.0	e2.0	2.3	6.2	9.5	17	5.6	2.8	2.3
6	1.3	e1.7	e2.2	e1.7	e2.1	2.3	6.5	11	17	5.2	2.7	2.3
7	1.3	e1.8	e2.2	e2.2	2.1	2.3	7.2	11	17	5.2	3.3	2.2
8	1.4	e2.0	e2.1	e2.4	2.0	3.1	8.1	12	16	5.1	3.1	2.2
9	1.7	e2.3	e2.0	e2.4	2.0	3.5	8.7	12	15	5.0	2.9	2.1
10	1.6	e2.6	e2.2	e2.5	2.0	3.9	8.3	11	15	4.9	2.8	2.1
11	1.6	e3.0	2.4	e2.5	2.0	3.4	8.0	15	14	4.7	2.6	2.2
12	1.8	e3.2	2.3	e2.5	e2.1	3.4	7.9	13	13	4.5	2.5	2.4
13	2.0	3.3	2.3	2.5	1.9	3.9	8.0	12	12	4.3	2.4	2.5
14	1.8	3.0	2.4	2.4	2.2	3.5	9.1	11	11	4.2	2.4	2.5
15	1.8	3.0	2.3	2.3	2.7	3.4	10	11	9.9	4.2	2.4	2.5
16	2.2	2.8	2.2	2.3	2.4	3.7	11	10	9.4	4.0	2.4	2.8
17	2.1	2.8	2.3	2.1	2.2	4.5	10	9.8	8.8	3.8	2.4	2.5
18	1.8	2.8	2.1	2.0	2.3	5.4	10	9.1	8.3	3.9	3.2	2.5
19	1.7	e2.7	2.0	2.1	2.7	6.9	9.5	8.9	8.0	4.2	3.7	2.5
20	1.6	e2.2	2.2	2.2	2.5	5.3	9.2	9.1	7.8	4.5	4.0	2.4
21	1.7	2.3	2.3	2.3	2.3	4.7	8.8	11	7.5	3.9	3.1	2.4
22	1.6	2.2	2.3	2.2	2.3	4.6	8.3	13	7.1	3.7	2.8	2.2
23	1.6	2.4	e2.2	2.2	2.2	5.0	7.7	18	6.9	3.6	3.1	2.1
24	1.7	2.3	e2.1	2.3	2.5	5.6	7.3	20	6.6	3.4	3.1	2.1
25	1.7	2.3	e2.0	2.2	2.4	5.7	7.1	21	6.4	3.4	3.3	2.1
26	1.7	2.3	e2.1	2.2	2.3	5.5	6.9	22	6.7	3.3	3.3	2.0
27	1.7	2.2	e2.2	2.2	2.3	5.2	6.9	24	6.3	3.3	3.1	1.9
28	2.1	2.2	2.2	2.3	2.3	5.2	7.9	23	6.2	3.3	3.0	1.9
29	e2.3	2.5	2.2	2.4	2.4	4.9	7.9	24	6.0	3.2	2.9	1.9
30	e2.0	2.7	e2.2	e2.6	---	5.0	8.1	24	5.9	3.2	2.6	1.9
31	e1.4	---	e2.1	e2.4	---	5.6	---	25	---	3.1	2.4	---
TOTAL	51.9	71.1	69.1	67.3	64.5	127.1	237.6	434.5	345.8	132.9	90.1	68.5
MEAN	1.67	2.37	2.23	2.17	2.22	4.10	7.92	14.0	11.5	4.29	2.91	2.28
MAX	2.3	3.3	2.6	2.6	2.7	6.9	11	25	22	5.8	4.0	2.8
MIN	1.3	1.6	2.0	1.0	1.9	2.3	5.5	8.3	5.9	3.1	2.4	1.9
AC-FT	103	141	137	133	128	252	471	862	686	264	179	136
CFSM	0.09	0.12	0.11	0.11	0.11	0.21	0.40	0.72	0.59	0.22	0.15	0.12
IN.	0.10	0.13	0.13	0.13	0.12	0.24	0.45	0.82	0.66	0.25	0.17	0.13

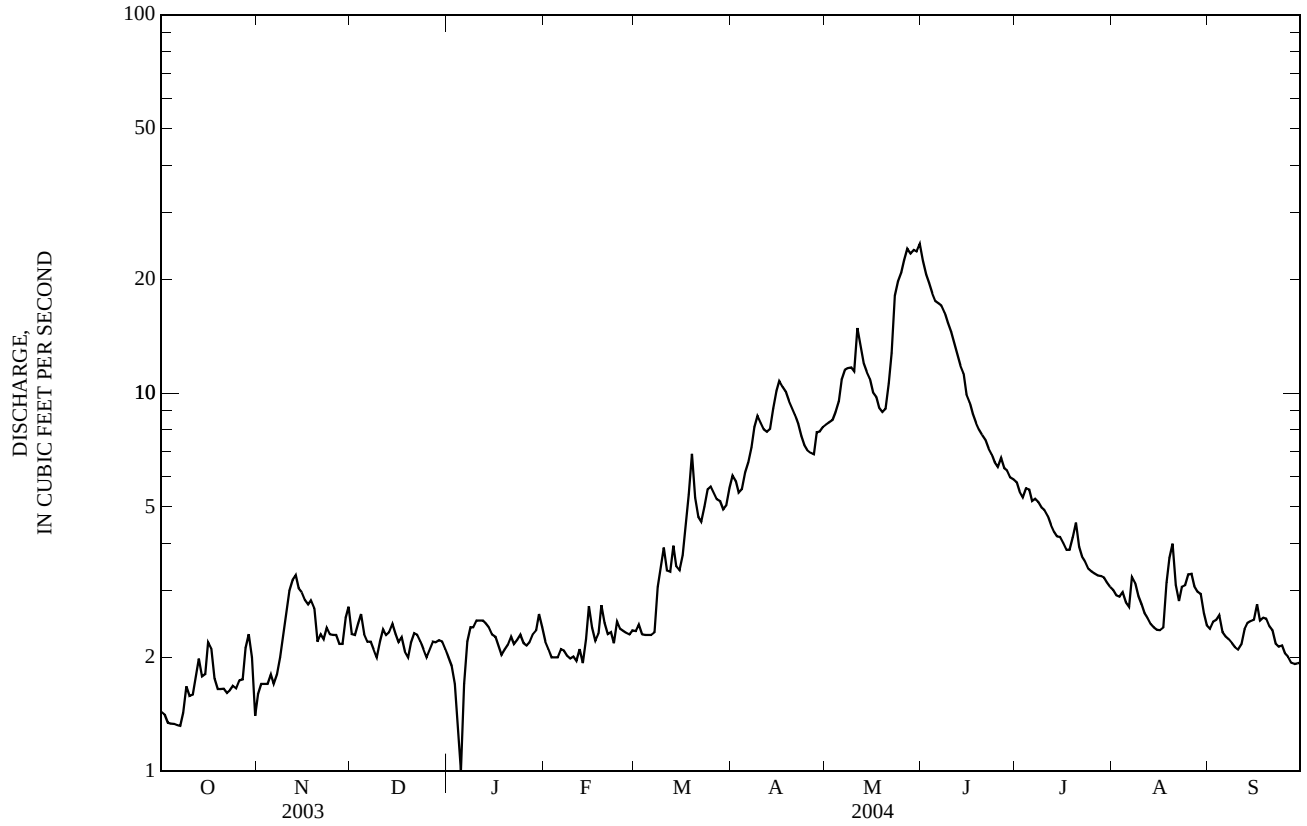
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)

MEAN	2.59	3.41	3.51	3.23	3.79	7.21	19.6	24.7	15.2	5.61	3.04	2.45
MAX	5.05	8.60	16.9	9.83	13.6	35.1	49.7	86.8	37.7	13.0	5.61	3.39
(WY)	(1986)	(1986)	(1996)	(1990)	(1996)	(1986)	(1996)	(1997)	(1997)	(1991)	(1997)	(1996)
MIN	1.67	2.00	2.12	1.94	1.71	2.55	5.03	11.4	4.89	2.50	1.88	1.53
(WY)	(2004)	(1988)	(1988)	(1985)	(1994)	(1985)	(1984)	(1992)	(1987)	(1994)	(2001)	(2001)

12374250 MILL CREEK ABOVE BASSOO CREEK, NEAR NIARADA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004	
ANNUAL TOTAL	1,743.5		1,760.4			
ANNUAL MEAN	4.78		4.81		7.86	
HIGHEST ANNUAL MEAN					18.8	1997
LOWEST ANNUAL MEAN					3.86	2001
HIGHEST DAILY MEAN	20	May 31	25	May 31	155	Apr 28, 1997
LOWEST DAILY MEAN	1.3	Oct 3	1.0	Jan 5	1.0	Jan 5, 2004
ANNUAL SEVEN-DAY MINIMUM	1.3	Oct 1	1.3	Oct 1	1.3	Sep 21, 2001
MAXIMUM PEAK FLOW			a26	May 31	c173	Apr 28, 1997
MAXIMUM PEAK STAGE			b2.21	Feb 3	d6.83	May 20, 1991
INSTANTANEOUS LOW FLOW					f0.85	Jan 6, 1988
ANNUAL RUNOFF (AC-FT)	3,460		3,490		5,700	
ANNUAL RUNOFF (CFSM)	0.244		0.245		0.401	
ANNUAL RUNOFF (INCHES)	3.31		3.34		5.45	
10 PERCENT EXCEEDS	13		10		19	
50 PERCENT EXCEEDS	2.6		2.6		3.3	
90 PERCENT EXCEEDS	1.7		1.9		2.0	

a--Gage height, 1.97 ft.
b--Backwater from ice.
c--Gage height, 2.60 ft.
d--Site and datum then in use.
e--Estimated.
f--Gage height, 5.00 ft, site and datum then in use.



12375900 SOUTH CROW CREEK NEAR RONAN, MT

LOCATION.--Lat 47°29'30", long 114°01'33" (NAD 27), in NW¼NE¼SW¼ sec.16, T.20 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 200 ft upstream from Pablo Feeder Canal, 2.2 mi northeast of Kicking Horse Reservoir, 4.5 mi southeast of Ronan, and at river mile 2.6.

DRAINAGE AREA.--7.57 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,320 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	e5.5	6.5	6.1	6.3	5.6	12	23	57	50	14	18
2	6.6	e6.0	6.6	e5.5	6.3	5.8	11	30	53	49	13	18
3	6.6	e6.0	6.9	e5.0	6.1	5.6	9.8	42	50	46	13	17
4	6.6	e5.5	6.9	e4.5	6.1	5.6	10	47	54	45	13	16
5	6.5	e5.5	6.6	e4.0	6.1	5.6	17	51	66	43	12	15
6	6.4	e5.0	7.1	e4.5	6.1	5.4	18	48	100	41	12	14
7	6.3	e6.0	7.5	e5.0	6.1	5.3	20	45	93	40	12	14
8	6.3	6.1	7.0	e5.0	6.0	5.4	21	46	66	42	12	13
9	6.3	6.1	6.8	e5.5	5.9	6.2	21	43	56	39	11	12
10	6.1	6.3	6.6	6.3	5.8	7.2	18	46	64	35	11	12
11	6.1	6.4	6.4	6.4	5.8	7.7	16	40	94	33	11	12
12	6.1	6.3	6.3	6.2	5.6	7.8	17	34	94	31	10	13
13	6.2	6.1	6.3	6.1	e5.5	7.7	20	28	81	29	10	13
14	6.2	6.1	6.6	6.3	e5.0	7.3	29	25	69	27	9.7	16
15	6.4	6.1	6.4	6.3	5.6	7.2	26	22	59	26	9.5	18
16	6.3	6.1	6.3	6.3	5.5	6.9	22	22	53	25	9.3	20
17	6.3	6.1	6.3	6.0	5.5	6.9	20	24	50	24	9.1	20
18	6.2	6.2	6.3	5.8	5.7	7.0	19	25	49	24	11	26
19	6.1	6.4	6.2	6.0	5.9	7.3	17	26	48	23	9.9	27
20	6.1	6.3	6.1	6.1	6.0	7.5	17	28	47	22	9.2	25
21	6.1	6.3	6.1	5.9	5.8	7.2	16	33	46	21	9.1	24
22	6.1	6.1	6.1	5.8	5.8	7.2	14	45	48	20	8.9	22
23	6.0	6.1	6.1	5.8	5.7	7.4	14	48	52	19	24	21
24	6.0	6.1	6.0	6.0	5.7	9.6	15	43	59	18	27	20
25	6.0	6.1	6.1	6.1	5.8	10	14	39	63	17	26	19
26	5.9	6.1	6.1	5.8	5.8	9.6	15	41	62	17	41	18
27	6.1	6.1	6.1	5.8	5.8	8.9	19	62	57	16	41	19
28	6.4	6.1	6.1	6.0	5.8	8.2	25	91	54	15	34	18
29	6.6	6.5	6.1	6.2	5.8	7.8	20	106	52	15	28	18
30	5.7	6.6	e7.0	6.3	---	8.2	20	78	51	15	24	17
31	4.8	---	6.1	6.3	---	12	---	69	---	14	20	---
TOTAL	191.9	182.2	199.6	178.9	168.9	227.1	532.8	1,350	1,847	881	504.7	535
MEAN	6.19	6.07	6.44	5.77	5.82	7.33	17.8	43.5	61.6	28.4	16.3	17.8
MAX	6.6	6.6	7.5	6.4	6.3	12	29	106	100	50	41	27
MIN	4.8	5.0	6.0	4.0	5.0	5.3	9.8	22	46	14	8.9	12
AC-FT	381	361	396	355	335	450	1,060	2,680	3,660	1,750	1,000	1,060
CFSM	0.82	0.80	0.85	0.76	0.77	0.97	2.35	5.75	8.13	3.75	2.15	2.36
IN.	0.94	0.90	0.98	0.88	0.83	1.12	2.62	6.63	9.08	4.33	2.48	2.63

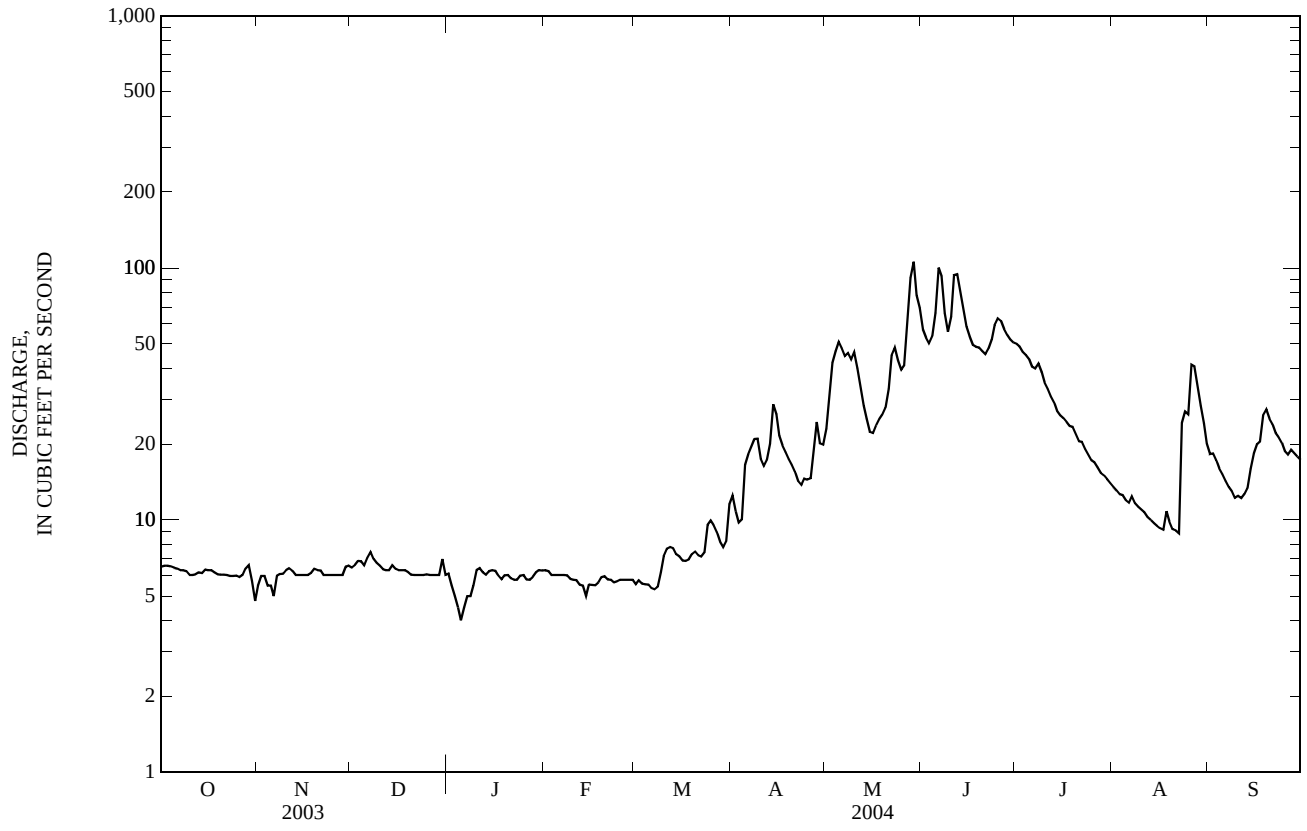
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2004, BY WATER YEAR (WY)

MEAN	8.93	9.27	7.74	7.05	6.65	7.80	15.9	44.7	68.2	35.7	13.5	9.88
MAX	13.9	19.2	15.2	11.0	9.97	12.9	25.2	68.6	104	73.6	21.6	19.6
(WY)	(1983)	(1990)	(1990)	(1984)	(1986)	(1986)	(1990)	(1993)	(1984)	(1983)	(1983)	(1985)
MIN	6.06	5.75	5.20	5.45	5.03	4.86	8.80	25.3	35.9	15.5	7.87	6.88
(WY)	(2002)	(2003)	(2003)	(2000)	(1993)	(2002)	(1995)	(1999)	(1987)	(1988)	(1988)	(1988)

12375900 SOUTH CROW CREEK NEAR RONAN, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1982 - 2004	
ANNUAL TOTAL	6,033.1		6,799.1			
ANNUAL MEAN	16.5		18.6		19.6	
HIGHEST ANNUAL MEAN					27.2	1983
LOWEST ANNUAL MEAN					13.7	1992
HIGHEST DAILY MEAN	191	May 31	106	May 29	276	Jun 30, 1983
LOWEST DAILY MEAN	3.0	Feb 24	4.0	Jan 5	3.0	Feb 24, 2003
ANNUAL SEVEN-DAY MINIMUM	4.1	Feb 23	4.8	Jan 2	4.1	Feb 23, 2003
MAXIMUM PEAK FLOW			a115	May 28	c312	Jun 30, 1991
MAXIMUM PEAK STAGE			2.91	May 28	3.67	Jun 30, 1991
INSTANTANEOUS LOW FLOW			b2.6	Oct 31	b2.0	Oct 30, 2002
ANNUAL RUNOFF (AC-FT)	11,970		13,490		14,230	
ANNUAL RUNOFF (CFSM)	2.18		2.45		2.60	
ANNUAL RUNOFF (INCHES)	29.65		33.41		35.26	
10 PERCENT EXCEEDS	42		48		52	
50 PERCENT EXCEEDS	7.5		9.2		9.5	
90 PERCENT EXCEEDS	5.9		5.8		6.1	

a--Also occurred June 6.
b--Result of freezeup.
c--From rating curve extended above 185 ft^3/s, on basis of step-backwater study.
e--Estimated.



12377150 MISSION CREEK ABOVE RESERVOIR, NEAR ST. IGNATIUS, MT

LOCATION.--Lat 47°19'23", long 113°58'43" (NAD 27), in NW¼SW¼NE¼ sec.14, T.18 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 0.2 mi southwest of upper BIA campground, 0.5 mi upstream from Mission Reservoir, and 5.3 mi east of St. Ignatius.

DRAINAGE AREA.--12.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft (NGVD 29).

REMARKS.--Records good except those for estimated discharges, which are poor. No known regulation or diversions upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	e28	14	e8.5	9.5	8.0	13	47	97	168	57	67
2	18	e26	15	e8.5	9.2	8.0	14	67	95	155	55	66
3	18	e25	15	e8.0	8.9	8.0	13	116	104	150	53	60
4	17	e24	13	e7.5	8.8	8.1	14	151	139	132	52	56
5	17	e23	13	e7.0	8.8	8.3	17	154	228	125	50	53
6	17	e22	14	e6.0	e8.8	8.0	20	135	307	110	50	50
7	16	e22	14	e7.0	8.8	8.0	24	119	209	114	52	48
8	16	e22	12	e7.5	8.8	8.5	28	138	141	116	48	45
9	16	e22	12	e8.0	8.8	9.1	30	122	125	98	43	43
10	16	22	11	e9.0	8.8	10	27	102	176	92	42	42
11	16	23	e11	e10	8.8	9.7	25	89	393	105	41	41
12	16	22	12	e10	e8.5	9.3	25	75	224	98	40	46
13	18	20	11	e9.0	e8.0	9.2	28	65	148	91	39	52
14	18	19	12	e10	e7.0	8.9	41	56	130	94	38	59
15	17	18	12	e10	7.7	8.8	48	49	113	100	37	64
16	16	17	12	e9.5	7.9	8.8	42	49	100	106	37	67
17	17	18	11	e9.0	8.0	8.7	35	53	99	100	37	68
18	17	18	10	e9.0	8.8	8.8	31	61	101	95	47	87
19	18	18	10	8.7	9.1	9.3	29	73	107	97	42	92
20	19	18	e10	9.0	8.8	8.9	28	85	105	122	37	80
21	20	e18	10	8.9	8.4	8.6	27	97	108	107	35	67
22	25	e17	10	8.8	8.1	8.8	25	113	139	91	34	59
23	26	e17	9.5	8.9	8.1	9.2	25	118	174	82	131	54
24	24	16	9.5	9.4	8.0	10	25	97	200	77	232	56
25	22	15	9.9	9.7	8.2	11	25	82	209	73	190	58
26	21	15	10	10	8.2	11	26	79	201	72	251	58
27	20	15	e10	10	8.3	11	32	115	183	70	169	58
28	24	14	e10	9.9	8.0	10	47	155	175	66	126	57
29	43	15	e10	9.8	7.8	10	46	155	166	61	103	54
30	e35	15	e9.5	10	---	10	43	124	163	59	87	50
31	e30	---	e9.0	9.7	---	11	---	108	---	59	76	---
TOTAL	632	584	351.4	276.3	244.9	285.0	853	3,049	4,859	3,085	2,331	1,757
MEAN	20.4	19.5	11.3	8.91	8.44	9.19	28.4	98.4	162	99.5	75.2	58.6
MAX	43	28	15	10	9.5	11	48	155	393	168	251	92
MIN	16	14	9.0	6.0	7.0	8.0	13	47	95	59	34	41
AC-FT	1,250	1,160	697	548	486	565	1,690	6,050	9,640	6,120	4,620	3,490
CFSM	1.64	1.57	0.91	0.72	0.68	0.74	2.29	7.93	13.1	8.03	6.06	4.72
IN.	1.90	1.75	1.05	0.83	0.73	0.85	2.56	9.15	14.58	9.26	6.99	5.27

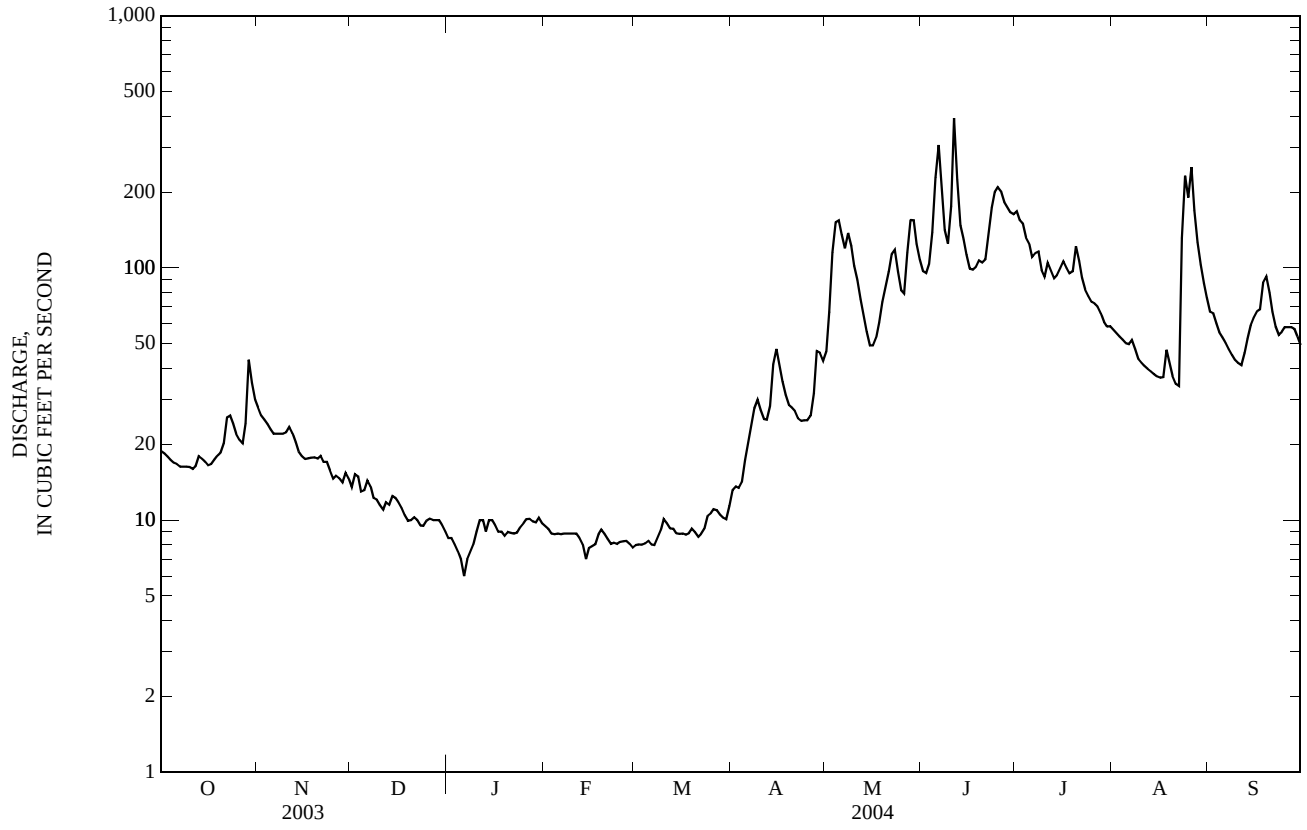
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2004, BY WATER YEAR (WY)

MEAN	24.7	19.0	13.0	10.4	8.99	10.4	25.4	101	173	114	49.5	31.1
MAX	36.8	28.5	21.3	14.9	12.6	15.4	43.9	168	222	181	75.2	67.4
(WY)	(1983)	(1990)	(1990)	(1984)	(1986)	(1986)	(1990)	(1993)	(1997)	(1983)	(2004)	(1985)
MIN	14.1	11.7	9.58	8.20	6.71	7.23	10.6	54.0	104	53.4	25.2	15.8
(WY)	(2002)	(2003)	(2003)	(2000)	(1985)	(2002)	(2002)	(1984)	(1987)	(1988)	(1988)	(1988)

12377150 MISSION CREEK ABOVE RESERVOIR, NEAR ST. IGNATIUS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1982 - 2004	
ANNUAL TOTAL	15,900.2		18,307.6			
ANNUAL MEAN	43.6		50.0		48.5	
HIGHEST ANNUAL MEAN					61.0	1997
LOWEST ANNUAL MEAN					35.6	1988
HIGHEST DAILY MEAN	461	May 31	393	Jun 11	472	Jul 4, 1995
LOWEST DAILY MEAN	6.0	Feb 24	6.0	Jan 6	5.5	Feb 28, 2001
ANNUAL SEVEN-DAY MINIMUM	7.7	Feb 23	7.3	Jan 3	6.3	Feb 15, 1985
MAXIMUM PEAK FLOW			472	Jun 11	a892	Jun 30, 1991
MAXIMUM PEAK STAGE			4.12	Jun 11	b5.16	Jun 30, 1991
INSTANTANEOUS LOW FLOW					4.4	Dec 28, 2001
ANNUAL RUNOFF (AC-FT)	31,540		36,310		35,110	
ANNUAL RUNOFF (CFSM)	3.51		4.03		3.91	
ANNUAL RUNOFF (INCHES)	47.70		54.92		53.10	
10 PERCENT EXCEEDS	110		125		136	
50 PERCENT EXCEEDS	20		25		22	
90 PERCENT EXCEEDS	9.1		8.8		9.0	

a--Gage height, 4.72 ft.
b--Backwater from debris dam.
e--Estimated.



12381400 SOUTH FORK JOCKO RIVER NEAR ARLEE, MT

LOCATION.--Lat 47°11'44", long 113°50'59" (NAD 27), in NE¼NW¼NE¼ sec.35, T.17 N., R.18 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 600 ft upstream from confluence with Jocko River and Twin Campground and 12 mi northeast of Arlee, MT.

DRAINAGE AREA.--56.0 mi^2.

PERIOD OF RECORD.--October 1982 to current year. Records published as "near Jocko" 1912-16 and in WSP 1246, 1316 are not equivalent.

GAGE.--Water-stage recorder. Elevation of gage is 3,970 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. No known regulation or diversion upstream from station. U.S. Geological Survey telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e19	e13	12	e6.5	e9.0	9.6	33	80	209	98	44	29
2	19	e14	12	e6.5	e8.5	9.8	30	89	202	95	43	34
3	18	e13	e11	e6.0	e8.5	9.6	29	112	197	91	43	31
4	18	e12	e9.0	e5.5	e8.5	9.9	32	139	199	90	43	29
5	17	e10	e11	e5.0	e9.0	9.8	40	157	209	90	41	28
6	17	e9.0	e12	e4.0	e8.5	9.6	48	158	226	85	40	27
7	17	e10	e11	e5.0	e9.0	10	58	153	205	86	40	26
8	17	e10	e10	e6.0	e9.0	12	60	157	189	82	40	25
9	16	e12	e10	e7.0	9.0	13	58	154	180	78	39	24
10	16	e13	e9.0	e8.0	8.9	15	54	144	190	74	38	24
11	17	e14	e9.0	e7.5	8.6	14	52	144	219	72	37	24
12	17	e13	e10	e7.0	7.4	14	55	128	205	70	36	30
13	17	e12	e10	e7.5	e7.0	15	62	117	196	67	35	33
14	17	e11	e10	e8.0	e7.5	14	80	111	186	64	34	34
15	17	e12	e10	e8.0	e9.0	14	82	106	177	62	33	38
16	17	e13	e10	e8.0	e9.0	14	69	106	167	61	32	36
17	17	e13	e9.0	e8.5	e9.5	15	62	113	159	59	32	33
18	16	13	e8.5	e8.0	e10	17	57	109	152	59	35	44
19	15	14	e8.0	e8.0	e10	23	55	125	154	59	33	44
20	14	e13	e8.0	e8.5	10	19	55	124	145	58	32	43
21	14	e12	e8.5	9.1	9.9	18	52	132	137	57	31	41
22	14	e12	e8.5	9.1	e8.5	20	49	158	133	55	30	38
23	14	e13	e8.0	9.3	e9.0	23	50	175	130	54	38	36
24	13	e13	e8.0	9.6	e9.0	28	56	164	125	52	39	35
25	13	e13	e8.5	9.4	10	29	56	153	125	51	41	34
26	13	e13	e8.0	9.3	10	29	59	156	120	50	43	32
27	13	e12	e8.0	9.4	9.7	26	71	171	116	49	38	31
28	17	e13	e8.0	9.3	9.4	24	94	176	111	48	36	30
29	26	e13	e7.5	9.4	9.4	23	85	186	108	46	33	29
30	e15	13	e8.5	10	---	26	79	189	105	45	31	29
31	e12	---	e7.0	9.4	---	33	---	210	---	45	29	---
TOTAL	502	371.0	288.0	241.8	260.8	546.3	1,722	4,396	4,976	2,052	1,139	971
MEAN	16.2	12.4	9.29	7.80	8.99	17.6	57.4	142	166	66.2	36.7	32.4
MAX	26	14	12	10	10	33	94	210	226	98	44	44
MIN	12	9.0	7.0	4.0	7.0	9.6	29	80	105	45	29	24
AC-FT	996	736	571	480	517	1,080	3,420	8,720	9,870	4,070	2,260	1,930
CFSM	0.29	0.22	0.17	0.14	0.16	0.31	1.02	2.53	2.96	1.18	0.66	0.58
IN.	0.33	0.25	0.19	0.16	0.17	0.36	1.14	2.92	3.31	1.36	0.76	0.65

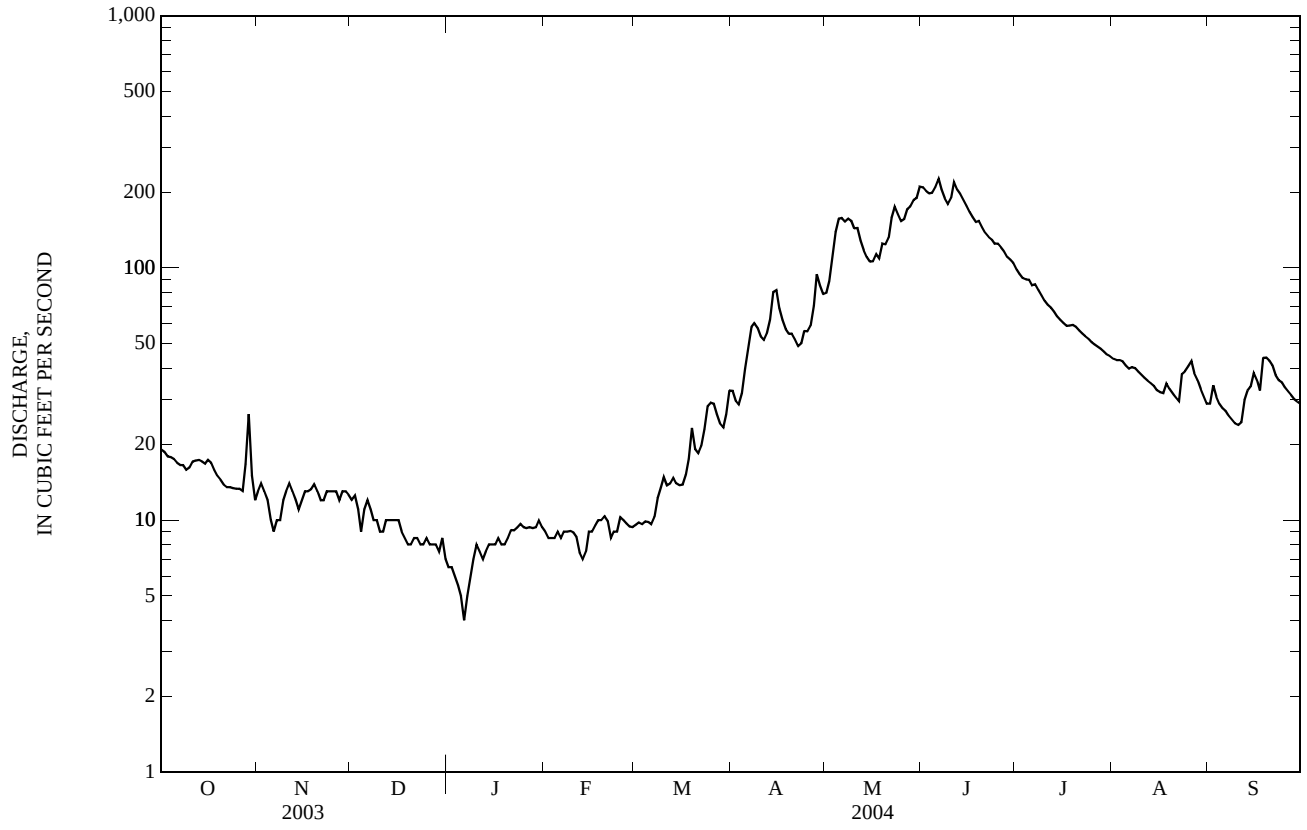
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)

MEAN	21.6	17.8	14.2	11.7	10.4	15.1	55.6	193	192	76.2	37.6	26.3
MAX	42.2	26.3	37.4	22.2	22.8	56.0	113	459	446	140	53.5	44.5
(WY)	(1986)	(1986)	(1996)	(1986)	(1986)	(1986)	(1990)	(1997)	(1997)	(1997)	(1997)	(1985)
MIN	13.0	11.1	9.29	3.66	4.45	7.68	24.8	119	70.2	37.0	21.6	15.8
(WY)	(1988)	(1988)	(2004)	(1985)	(1985)	(1985)	(1995)	(1995)	(1992)	(1992)	(1992)	(1987)

12381400 SOUTH FORK JOCKO RIVER NEAR ARLEE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004	
ANNUAL TOTAL	18,941.0		17,465.9			
ANNUAL MEAN	51.9		47.7		56.1	
HIGHEST ANNUAL MEAN					108	1997
LOWEST ANNUAL MEAN					35.0	1992
HIGHEST DAILY MEAN	462	May 31	226	Jun 6	1,060	May 17, 1997
LOWEST DAILY MEAN	5.0	Feb 24	4.0	Jan 6	2.0	Feb 4, 1989
ANNUAL SEVEN-DAY MINIMUM	7.4	Feb 23	5.4	Jan 2	2.6	Feb 1, 1989
MAXIMUM PEAK FLOW			237	Jun 6	b1,220	May 17, 1997
MAXIMUM PEAK STAGE			a2.65	Jun 6	c4.98	Feb 15, 1989
ANNUAL RUNOFF (AC-FT)	37,570		34,640		40,640	
ANNUAL RUNOFF (CFSM)	0.927		0.852		1.00	
ANNUAL RUNOFF (INCHES)	12.58		11.60		13.61	
10 PERCENT EXCEEDS	123		144		153	
50 PERCENT EXCEEDS	19		26		23	
90 PERCENT EXCEEDS	10		8.5		9.4	

a--An undetermined higher gage height occurred as a result of backwater due to ice.
b--Gage height, 4.31 ft.
c--Backwater due to ice.
e--Estimated.



12383500 BIG KNIFE CREEK NEAR ARLEE, MT

LOCATION.--Lat 47°08'51", long 113°58'24" (NAD 27), in NW¼SW¼NW/4 sec.14, T.16 N., R.19 W., Lake County, Hydrologic Unit 17010212, Flathead Indian Reservation, on left bank, 150 ft upstream from S Canal, 1 mi upstream from mouth, and 5.5 mi east of Arlee.

DRAINAGE AREA.--6.88 mi^2.

PERIOD OF RECORD.--August 1910 to September 1916 (no winter records), October 1982 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "near Jocko" 1910-16 and in WSP 916, and as "above Big Knife Canal, near Jocko" in WSP 1246, 1316.

REVISED RECORDS.--WSP 1246: 1916. WSP 1316: 1910-12, 1915-16.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,720 ft (NGVD 29). Prior to July 28, 1998, at site 38 ft upstream at different elevation.

REMARKS.--Records fair. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.5	5.0	4.1	3.9	3.5	4.0	5.5	19	16	12	9.8
2	6.0	5.5	5.0	4.1	3.9	3.6	3.9	5.6	19	16	12	10
3	6.0	5.5	5.0	4.0	3.9	3.5	3.9	6.4	18	16	13	9.6
4	6.0	5.5	4.9	3.8	3.8	3.5	3.9	7.7	19	16	13	9.4
5	6.0	5.4	4.9	3.4	3.8	3.4	3.7	9.2	23	15	12	9.4
6	6.1	5.2	5.0	3.6	3.7	3.4	3.8	9.8	31	15	12	9.3
7	5.9	5.1	5.0	3.7	3.8	3.5	3.9	9.5	27	15	13	9.2
8	6.0	5.0	4.8	3.5	3.7	3.8	4.4	10	20	15	12	9.0
9	6.0	5.0	4.7	3.5	3.7	3.8	4.5	9.8	18	14	12	9.0
10	6.0	5.1	4.7	3.6	3.7	3.8	4.3	9.7	20	14	12	9.0
11	6.0	5.5	4.7	3.6	3.7	3.7	4.3	10	31	14	12	8.8
12	6.0	5.2	4.7	3.5	3.7	3.6	4.2	8.6	30	14	12	9.8
13	6.0	5.2	4.7	3.5	3.6	3.6	4.2	8.1	25	14	11	10
14	6.0	5.2	4.8	3.5	3.5	3.5	4.7	7.5	22	13	11	10
15	6.0	5.1	4.7	3.6	3.5	3.6	4.9	7.2	21	13	11	11
16	6.0	5.2	4.6	3.7	3.5	3.6	4.8	7.7	19	13	11	10
17	6.0	5.2	4.5	3.7	3.6	3.7	4.9	7.9	19	13	11	10
18	6.0	5.2	4.5	3.7	3.9	3.8	4.7	8.2	18	13	12	12
19	6.0	5.2	4.5	3.7	3.8	4.0	4.6	8.8	19	14	11	13
20	6.0	5.0	4.5	3.7	3.7	3.9	4.9	9.4	18	14	11	13
21	5.8	5.0	4.5	3.7	3.6	3.8	4.6	11	17	13	11	12
22	5.9	5.0	4.5	3.7	3.5	3.9	4.4	13	18	13	11	12
23	5.7	5.0	4.3	3.8	3.5	3.9	4.2	16	19	13	13	11
24	5.7	5.0	4.3	3.9	3.5	3.9	4.1	14	19	13	12	11
25	5.7	5.0	4.3	3.8	3.6	3.9	4.3	13	21	13	12	11
26	5.7	5.0	4.3	3.8	3.7	4.0	4.3	13	21	13	13	10
27	5.7	5.0	4.3	3.8	3.6	3.8	4.6	13	19	13	12	10
28	5.9	5.0	4.3	3.9	3.5	3.6	5.5	16	18	13	11	10
29	5.9	5.0	4.1	3.9	3.5	3.5	5.6	19	18	13	10	10
30	5.7	5.0	4.1	4.1	---	3.6	5.6	18	17	13	10	10
31	5.5	---	4.1	3.9	---	3.6	---	18	---	12	9.7	---
TOTAL	183.2	154.8	142.3	115.8	106.4	114.3	133.7	330.6	623	429	360.7	308.3
MEAN	5.91	5.16	4.59	3.74	3.67	3.69	4.46	10.7	20.8	13.8	11.6	10.3
MAX	6.1	5.5	5.0	4.1	3.9	4.0	5.6	19	31	16	13	13
MIN	5.5	5.0	4.1	3.4	3.5	3.4	3.7	5.5	17	12	9.7	8.8
AC-FT	363	307	282	230	211	227	265	656	1,240	851	715	612
CFSM	0.86	0.75	0.67	0.54	0.53	0.54	0.65	1.55	3.02	2.01	1.69	1.49
IN.	0.99	0.84	0.77	0.63	0.58	0.62	0.72	1.79	3.37	2.32	1.95	1.67

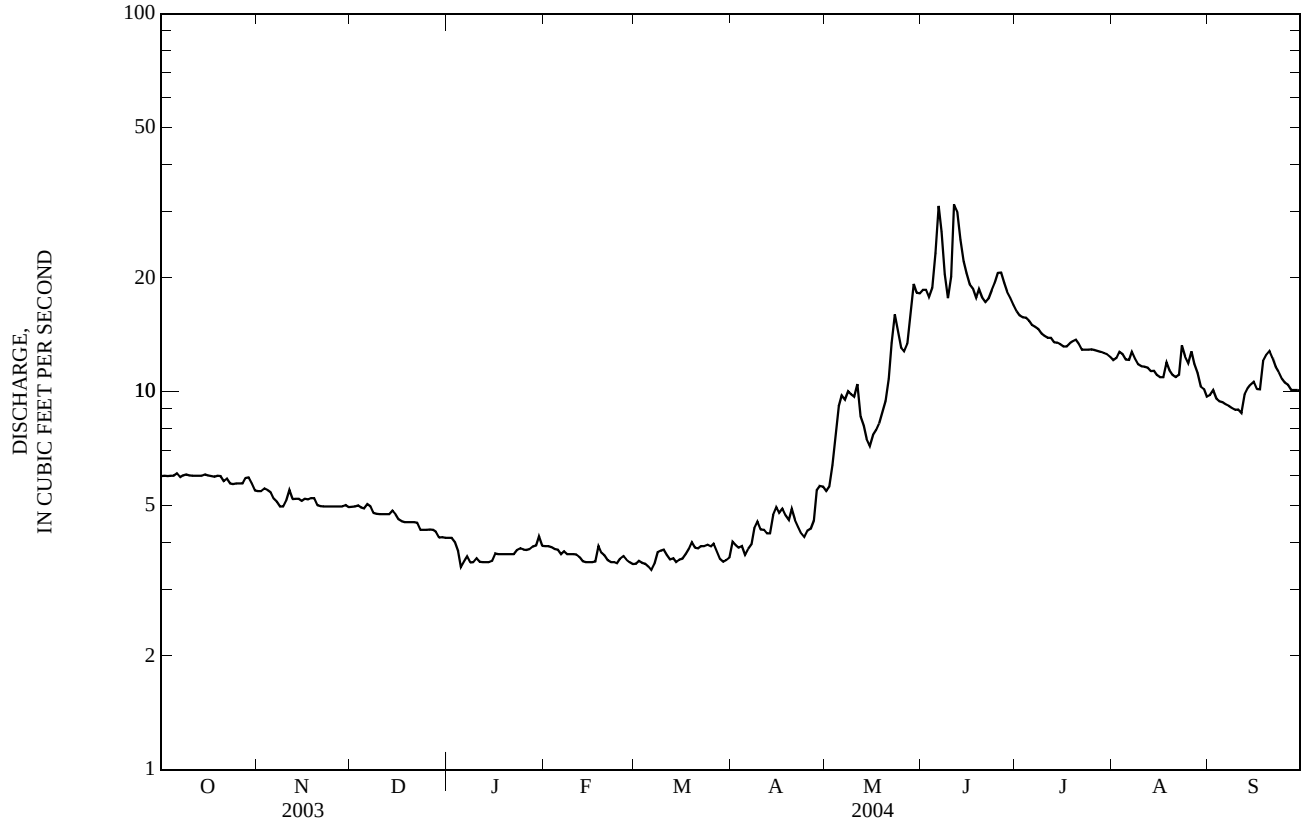
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)

MEAN	8.01	6.82	5.75	5.05	4.49	4.50	6.11	15.3	25.1	18.0	12.7	9.77
MAX	10.3	8.95	7.38	6.33	6.49	7.07	8.93	28.0	48.4	29.2	16.9	12.0
(WY)	(1983)	(1986)	(1985)	(1985)	(1986)	(1986)	(1986)	(1997)	(1997)	(1984)	(1983)	(1984)
MIN	5.27	4.47	4.05	3.65	2.96	2.96	3.92	9.23	8.49	9.60	8.06	6.55
(WY)	(1993)	(1993)	(1993)	(1989)	(1989)	(1989)	(1991)	(1995)	(1992)	(1992)	(1992)	(1992)

12383500 BIG KNIFE CREEK NEAR ARLEE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004	
ANNUAL TOTAL	3,075.8		3,002.1			
ANNUAL MEAN	8.43		8.20		10.2	
HIGHEST ANNUAL MEAN					14.6	1997
LOWEST ANNUAL MEAN					6.60	1992
HIGHEST DAILY MEAN	55	May 30	31	Jun 6	65	May 30, 1986
LOWEST DAILY MEAN	3.3	Feb 24	3.4	Jan 5	1.7	Feb 4, 1989
ANNUAL SEVEN-DAY MINIMUM	4.1	Feb 24	3.5	Feb 29	2.0	Feb 1, 1989
MAXIMUM PEAK FLOW			36	Jun 6	b78	Jun 30, 1916
MAXIMUM PEAK STAGE			5.70	Jun 6	5.91	Jun 29, 2002
INSTANTANEOUS LOW FLOW			a3.4	Jan 5	c1.3	Feb 4, 1989
ANNUAL RUNOFF (AC-FT)	6,100		5,950		7,360	
ANNUAL RUNOFF (CFSM)	1.22		1.19		1.48	
ANNUAL RUNOFF (INCHES)	16.63		16.23		20.06	
10 PERCENT EXCEEDS	14		16		20	
50 PERCENT EXCEEDS	5.9		5.6		7.5	
90 PERCENT EXCEEDS	4.5		3.6		4.1	

a--Also occurred Mar. 7.
b--Gage height, 3.65 ft; site and datum then in use.
c--Result of freezeup.



12387450 VALLEY CREEK NEAR ARLEE, MT

LOCATION.--Lat 47°10'13", long 114°13'47" (NAD 27), in NE¼SE¼SE¼ sec.3, T.16 N., R.21 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 1.4 mi upstream from East Fork, 6.7 mi west of Arlee, and 7.4 mi southwest of Ravalli.

DRAINAGE AREA.--15.3 mi^2.

PERIOD OF RECORD.--October 1982 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,450 ft (NGVD 29).

REMARKS.--Seasonal records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				7.3	e17	e27	14	10	9.2	8.8		
2				7.1	e20	e25	13	9.9	9.3	8.8		
3				7.0	e27	e27	13	9.9	9.2	8.7		
4				7.3	e28	e30	14	9.9	9.2	8.6		
5				8.1	e30	e33	14	9.8	9.2	8.4		
6				9.2	e28	e35	13	9.6	9.2	8.4		
7				9.6	e28	e30	13	9.8	9.0	8.6		
8				11	e30	e25	13	9.5	8.7	8.4		
9				11	e28	24	13	9.5	8.7	8.4		
10				e13	e27	24	13	9.4	8.6	8.4		
11				e12	e27	23	13	9.2	8.7	8.2		
12				e11	e23	22	13	9.2	9.1	8.0		
13				e14	e18	21	12	9.2	9.1	8.0		
14				e17	e17	20	12	9.1	9.2	8.0		
15				e16	e16	20	12	9.1	9.3	8.0		
16				e14	e18	19	12	9.1	9.2	8.4		
17				e13	e20	18	12	9.1	9.1	8.9		
18				e13	e22	18	11	11	12	8.9		
19				e12	e23	18	12	9.5	10	8.4		
20				e11	e25	17	13	9.6	10	8.4		
21				e11	e27	17	12	9.2	10	8.8		
22				e10	e33	17	11	9.2	9.6	8.7		
23				e9.0	e40	16	11	12	9.5	8.4		
24				e10	e34	16	11	9.9	9.2	8.6		
25				e10	e30	16	11	10	9.2	8.4		
26				e10	e30	16	11	12	9.2	8.4		
27				e15	e37	15	11	11	9.2	8.4		
28				e20	e43	15	11	10	9.2	8.4		
29				e18	e40	14	11	9.9	9.1	8.4		
30				e17	e33	14	10	9.5	9.0	8.4		
31				---	e30	---	10	9.2	---	8.4		
TOTAL				353.6	849	632	375	303.3	279.2	262.0		
MEAN				11.8	27.4	21.1	12.1	9.78	9.31	8.45		
MAX				20	43	35	14	12	12	8.9		
MIN				7.0	16	14	10	9.1	8.6	8.0		
AC-FT				701	1,680	1,250	744	602	554	520		
CFSM				0.77	1.79	1.38	0.79	0.64	0.61	0.55		
IN.				0.86	2.06	1.54	0.91	0.74	0.68	0.64		

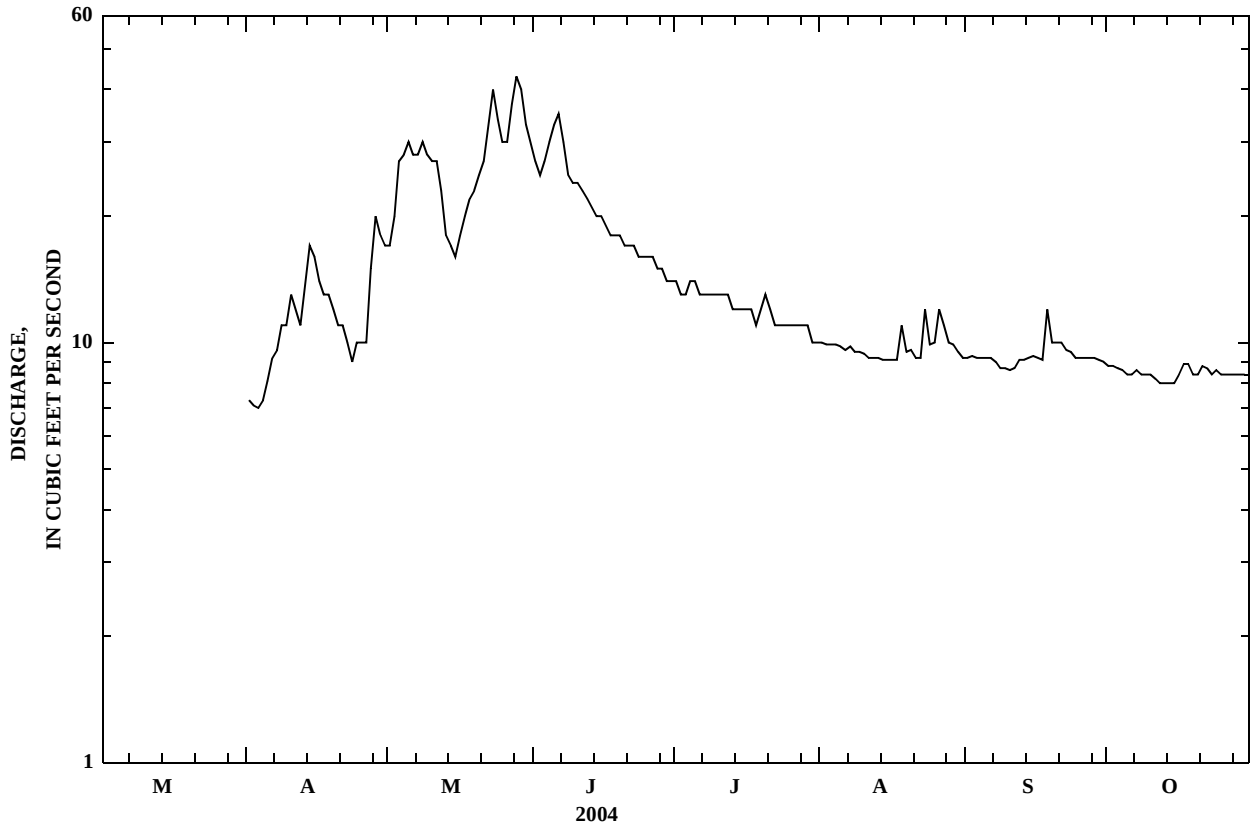
STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1983 - 2004

MEAN	7.70	14.3	32.0	28.1	14.4	10.5	9.03	8.48	8.22
MAX	8.67	30.3	75.5	66.7	31.8	19.6	14.0	12.2	11.5
(WY)	(1998)	(1996)	(1997)	(1997)	(1997)	(1997)	(1997)	(1998)	(1998)
MIN	6.37	6.27	21.5	11.6	8.47	6.72	6.21	5.97	5.85
(WY)	(1984)	(2002)	(1988)	(1987)	(2001)	(2001)	(2001)	(1989)	(2002)

SUMMARY STATISTICS	FOR 2004 SEASON		SEASONS 1983 - 2004	
HIGHEST DAILY MEAN	43	May 28	110	May 17, 1997
LOWEST DAILY MEAN	7.0	Apr 3	5.0	Nov 22, 1994
MAXIMUM PEAK FLOW	Unknown		116	May 16, 1997
MAXIMUM PEAK STAGE	Unknown		3.04	May 16, 1997

e--Estimated.

12387450 VALLEY CREEK NEAR ARLEE, MT—Continued



12388200 JOCKO RIVER AT DIXON, MT

LOCATION.--Lat 47°18'43", long 114°17'48" (NAD 27), in NW¼NW¼NE¼ sec. 20, T.18 N., R.21 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 38 ft downstream from State Highway 212 bridge, 0.8 mi east of Dixon, and at river mile 0.8.

DRAINAGE AREA.--380 mi^2.

PERIOD OF RECORD.--April 1990 to current year. Miscellaneous measurements made at this site 1977 and 1987 water years.

GAGE.--Water-stage recorder. Elevation of gage is 2,521.87 ft (NGVD 29).

REMARKS.--Records good. Some regulation and diversion upstream from gage for irrigation. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	e125	146	115	118	106	153	150	486	224	155	184
2	140	e140	147	116	113	106	152	151	463	210	156	192
3	139	e150	148	115	111	106	147	164	444	203	159	198
4	137	e155	145	121	109	105	146	198	445	207	159	193
5	136	157	143	e110	109	105	150	228	472	212	156	190
6	135	147	148	e100	108	105	157	241	532	199	155	186
7	134	138	151	e90	109	105	174	232	511	197	160	181
8	135	134	145	e94	109	105	198	226	449	201	162	178
9	135	134	142	e100	107	107	208	226	419	181	159	175
10	137	142	138	e98	107	110	196	214	457	173	159	177
11	138	151	138	e100	105	112	188	253	591	177	156	177
12	139	148	137	e100	102	112	186	221	641	172	151	186
13	139	143	139	e105	96	114	191	196	591	169	149	206
14	140	142	144	105	97	114	214	185	578	167	150	216
15	143	141	140	108	100	114	233	174	525	150	149	264
16	143	142	136	106	101	113	206	170	482	144	149	294
17	140	142	137	105	103	114	191	180	451	142	149	293
18	146	142	133	105	115	115	180	182	414	148	174	331
19	146	144	127	107	123	125	171	198	400	161	169	358
20	144	154	125	107	115	131	163	205	387	172	161	336
21	141	153	127	105	110	126	157	214	363	161	158	332
22	140	144	127	105	107	125	146	274	329	155	161	311
23	139	141	124	106	106	128	138	405	323	155	203	295
24	138	143	121	108	107	138	136	400	339	154	283	289
25	138	144	128	109	108	145	137	362	366	156	271	279
26	137	146	128	106	107	147	134	346	383	157	274	273
27	137	144	126	105	108	149	134	364	354	154	228	264
28	138	143	118	106	107	145	157	398	308	154	209	257
29	e130	149	117	111	107	141	174	453	267	152	199	250
30	e128	151	119	131	---	140	161	469	245	150	190	244
31	e120	---	112	127	---	145	---	494	---	153	185	---
TOTAL	4,271	4,329	4,156	3,326	3,124	3,753	5,078	8,173	13,015	5,310	5,498	7,309
MEAN	138	144	134	107	108	121	169	264	434	171	177	244
MAX	146	157	151	131	123	149	233	494	641	224	283	358
MIN	120	125	112	90	96	105	134	150	245	142	149	175
AC-FT	8,470	8,590	8,240	6,600	6,200	7,440	10,070	16,210	25,820	10,530	10,910	14,500

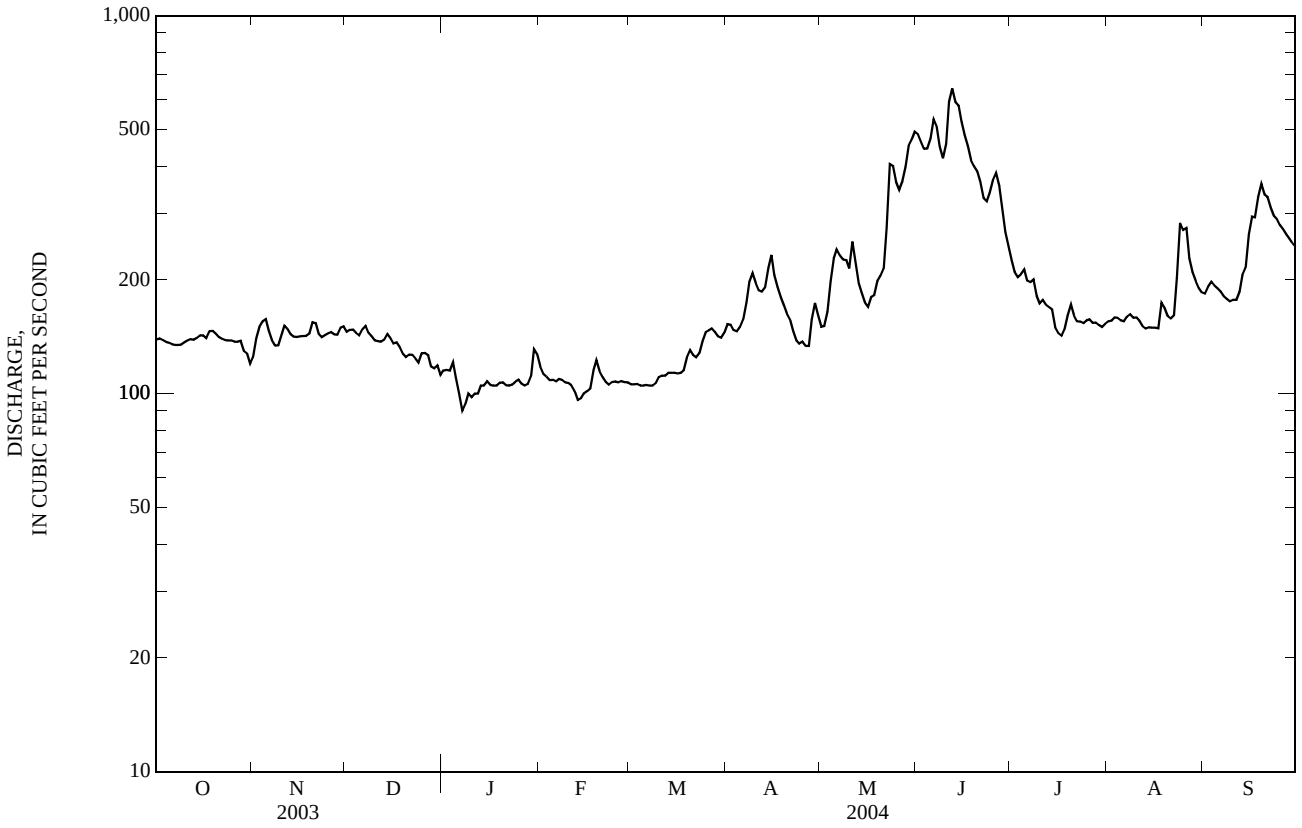
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2004, BY WATER YEAR (WY)

MEAN	181	172	156	131	129	146	210	409	522	254	167	181
MAX	227	227	265	188	208	246	390	1,303	1,537	512	222	244
(WY)	(1998)	(1996)	(1996)	(1996)	(1996)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(2004)
MIN	138	138	123	102	108	118	130	203	149	140	131	137
(WY)	(2004)	(1995)	(1993)	(1995)	(1993)	(1994)	(1995)	(1992)	(1992)	(1994)	(1994)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1991 - 2004	
ANNUAL TOTAL	64,551		67,342			
ANNUAL MEAN	177		184		222	
HIGHEST ANNUAL MEAN					445	1997
LOWEST ANNUAL MEAN					157	1992
HIGHEST DAILY MEAN	1,030	May 31	641	Jun 12	2,540	May 18, 1997
LOWEST DAILY MEAN	98	Feb 26	90	Jan 7	74	Feb 2, 1996
ANNUAL SEVEN-DAY MINIMUM	106	Feb 24	97	Jan 6	82	Jan 3, 1995
MAXIMUM PEAK FLOW			668	Jun 11	2,710	May 17, 1997
MAXIMUM PEAK STAGE			2.49	Jun 11	4.68	May 17, 1997
ANNUAL RUNOFF (AC-FT)	128,000		133,600		160,600	
10 PERCENT EXCEEDS	252		333		354	
50 PERCENT EXCEEDS	140		148		166	
90 PERCENT EXCEEDS	122		107		120	

e--Estimated.

12388200 JOCKO RIVER AT DIXON, MT—Continued



12388400 REVAIS CREEK BELOW WEST FORK, NEAR DIXON, MT

LOCATION.--Lat 47°15'59", long 114°24'21" (NAD 27), in SE¼NE¼NW¼ sec.4, T.17 N., R.22 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank, 0.3 mi downstream from West Fork, 7.3 mi southwest of Dixon, and at river mile 5.2.

DRAINAGE AREA.--23.4 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,420 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversion upstream from station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	e3.8	4.0	e3.8	3.6	3.6	8.9	27	69	19	9.0	7.9
2	3.7	4.0	4.2	e3.9	e3.7	3.6	8.1	33	66	18	8.8	8.0
3	3.7	4.2	e4.0	e3.7	e3.5	3.5	7.8	63	67	17	8.7	7.9
4	3.7	e3.9	e3.9	e3.6	e3.6	3.5	8.1	61	73	19	8.7	7.9
5	3.6	e3.8	4.0	e3.3	3.5	3.5	10	66	81	18	8.4	7.6
6	3.6	e3.6	e3.8	e2.7	3.6	3.5	13	63	86	16	8.3	7.5
7	3.6	e3.5	e3.8	e3.0	3.4	3.5	15	60	71	16	9.1	7.4
8	3.7	e3.1	e4.0	e3.2	3.4	4.0	17	63	62	15	8.3	7.2
9	3.7	e3.5	e3.9	e3.3	3.4	4.9	20	57	55	15	8.1	7.1
10	3.7	e3.9	e3.8	e3.4	3.4	5.7	18	52	54	14	7.9	7.0
11	3.7	e3.8	e4.0	e3.6	3.4	5.0	17	51	50	14	7.8	7.0
12	3.9	e4.0	e3.9	3.6	e3.5	4.9	17	40	46	14	7.7	7.4
13	3.8	4.0	e4.0	3.6	e3.4	5.3	21	35	42	13	7.4	7.5
14	3.9	4.0	4.2	3.6	e3.3	4.9	28	33	39	13	7.3	7.7
15	4.1	4.0	3.9	3.6	e3.1	4.7	27	32	36	12	7.1	7.8
16	4.3	4.1	3.8	3.6	3.4	5.0	23	36	33	12	7.0	7.9
17	4.1	4.2	3.8	3.6	3.5	5.4	20	44	31	12	7.0	7.6
18	3.9	4.4	3.9	3.6	e3.4	6.2	19	48	29	12	7.6	9.1
19	3.8	e4.2	e3.8	3.6	e3.4	9.3	17	50	27	13	7.6	8.2
20	3.8	e4.1	e3.6	3.6	e3.4	6.5	16	55	26	14	7.7	8.9
21	3.8	e4.0	e3.8	3.6	e3.6	5.7	16	59	25	12	7.3	8.9
22	3.8	e3.9	e3.8	3.6	3.7	5.7	15	76	25	12	7.0	8.3
23	3.8	e3.8	e3.7	3.6	e3.8	6.7	14	100	24	11	9.3	8.3
24	3.8	e3.7	e3.9	3.7	3.6	8.3	15	88	23	11	8.0	8.0
25	3.8	4.0	e4.0	3.6	3.6	7.6	15	76	23	11	8.2	8.0
26	3.8	4.1	e3.9	3.5	3.7	7.4	15	73	23	10	9.5	8.0
27	3.8	4.0	3.8	3.6	3.7	7.0	21	85	22	10	9.3	7.9
28	4.1	4.0	e3.8	3.6	3.6	6.5	35	106	21	9.9	8.6	7.9
29	e3.8	e4.0	e3.7	3.7	3.6	6.2	31	100	21	9.7	8.2	7.8
30	e3.5	e4.0	e3.8	e3.6	---	6.4	27	82	20	9.5	8.1	7.8
31	e3.3	---	e3.9	e3.5	---	8.4	---	76	---	9.2	7.9	---
TOTAL	117.4	117.6	120.4	109.5	101.8	172.4	534.9	1,890	1,270	411.3	250.9	235.5
MEAN	3.79	3.92	3.88	3.53	3.51	5.56	17.8	61.0	42.3	13.3	8.09	7.85
MAX	4.3	4.4	4.2	3.9	3.8	9.3	35	106	86	19	9.5	9.1
MIN	3.3	3.1	3.6	2.7	3.1	3.5	7.8	27	20	9.2	7.0	7.0
AC-FT	233	233	239	217	202	342	1,060	3,750	2,520	816	498	467
CFSM	0.16	0.17	0.17	0.15	0.15	0.24	0.76	2.61	1.81	0.57	0.35	0.34
IN.	0.19	0.19	0.19	0.17	0.16	0.27	0.85	3.00	2.02	0.65	0.40	0.37

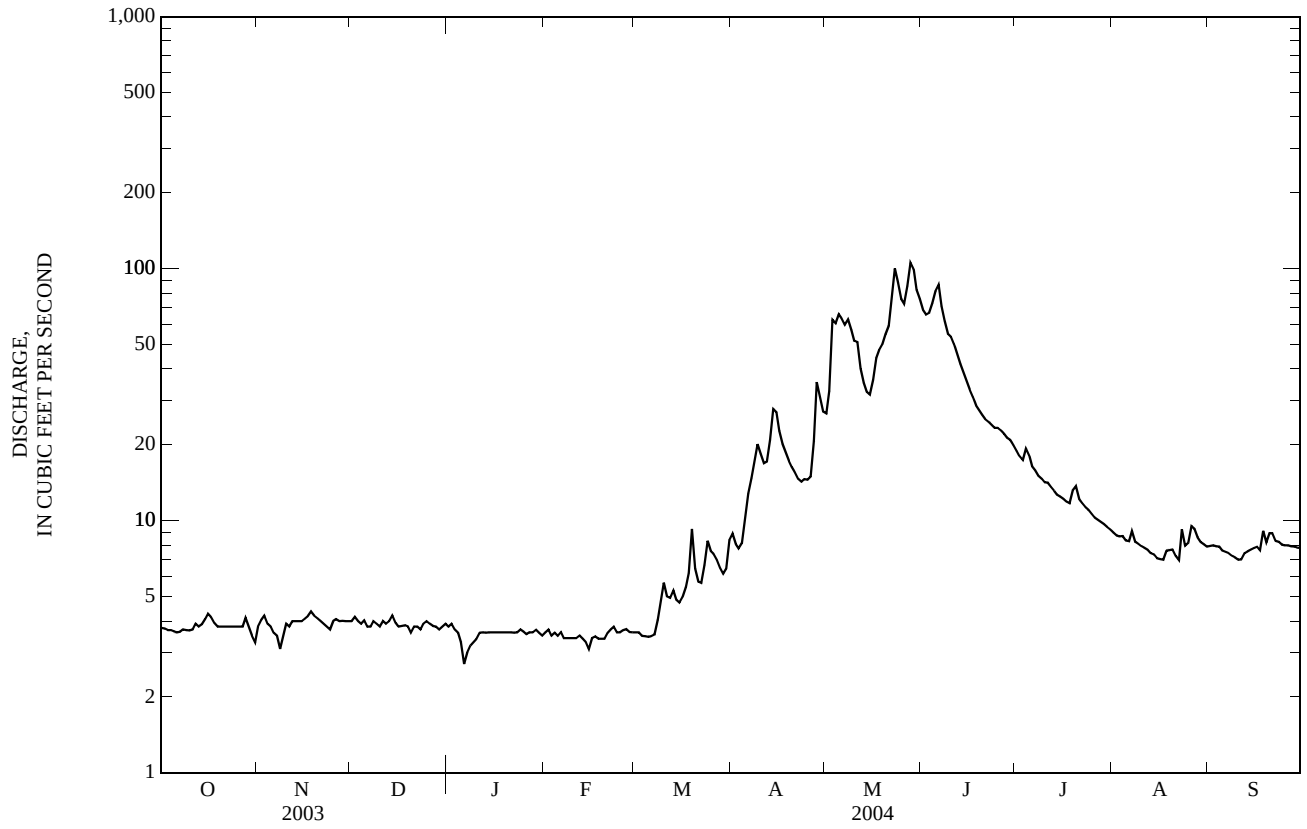
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2004, BY WATER YEAR (WY)

MEAN	6.22	6.62	6.44	5.28	5.57	7.80	22.7	66.6	55.1	16.2	7.96	6.35
MAX	12.5	14.8	27.9	12.3	19.9	23.7	56.4	165	134	25.9	11.0	10.9
(WY)	(1986)	(1986)	(1996)	(1996)	(1996)	(1986)	(1996)	(1997)	(1997)	(1991)	(1997)	(1985)
MIN	3.79	3.92	3.82	3.53	3.49	3.97	9.07	44.9	18.6	10.2	5.47	4.19
(WY)	(2004)	(2004)	(2002)	(2004)	(1993)	(2001)	(2001)	(1992)	(1987)	(1986)	(1988)	(1988)

12388400 REVAIS CREEK BELOW WEST FORK, NEAR DIXON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1983 - 2004	
ANNUAL TOTAL	4,962.0		5,331.7			
ANNUAL MEAN	13.6		14.6		17.8	
HIGHEST ANNUAL MEAN					35.2	1997
LOWEST ANNUAL MEAN					11.6	1992
HIGHEST DAILY MEAN	157	May 29	106	May 28	316	Jun 1, 1997
LOWEST DAILY MEAN	3.0	Feb 25	2.7	Jan 6	2.5	Feb 4, 1989
ANNUAL SEVEN-DAY MINIMUM	3.3	Feb 23	3.2	Jan 4	2.7	Feb 2, 1989
MAXIMUM PEAK FLOW			111	May 28	a382	Jun 1, 1997
MAXIMUM PEAK STAGE			3.79	May 28	b6.93	Dec 5, 1984
ANNUAL RUNOFF (AC-FT)	9,840		10,580		12,880	
ANNUAL RUNOFF (CFSM)	0.581		0.623		0.760	
ANNUAL RUNOFF (INCHES)	7.89		8.48		10.32	
10 PERCENT EXCEEDS	31		43		47	
50 PERCENT EXCEEDS	4.7		7.1		7.3	
90 PERCENT EXCEEDS	3.7		3.6		4.0	

a--Gage height, 4.36 ft.
b--Backwater from ice.
e--Estimated.



12388700 FLATHEAD RIVER AT PERMA, MT

LOCATION.--Lat 47°22'03", long 114°35'03" (NAD 27), in SE¼NE¼NE¼ sec.36, T.19 N., R.24 W., Sanders County, Hydrologic Unit 17010212, Flathead Indian Reservation, on right bank 0.3 mi north of Perma, 0.4 mi downstream from Camas Creek, and at river mile 10.9.

DRAINAGE AREA.--8,795 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,469.31 ft (NGVD 29).

REMARKS.--Records excellent. Flow affected by regulation from Hungry Horse Reservoir (station no. 12362000) and by Flathead Lake (station no. 12371500). Diversions for irrigation of about 160,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,980	5,920	9,500	9,590	6,520	8,590	6,410	5,660	22,500	18,900	9,030	12,400
2	3,990	6,940	9,540	9,720	6,450	8,640	5,470	6,090	20,000	18,000	8,990	11,600
3	3,960	8,070	9,510	9,850	6,430	8,570	5,220	6,610	17,700	18,000	9,060	11,300
4	3,960	8,420	9,370	e9,000	6,420	8,600	5,260	7,460	15,500	17,700	9,090	9,800
5	3,920	9,120	9,370	e9,220	6,470	8,600	5,240	8,050	15,200	17,600	8,560	9,430
6	3,910	9,210	9,470	e9,480	6,520	8,620	5,180	8,610	15,300	17,500	8,170	9,320
7	3,900	9,190	9,600	e9,530	6,530	8,510	4,910	9,220	15,300	16,600	8,260	9,310
8	3,900	9,200	9,460	e9,530	6,580	8,500	4,370	9,690	15,000	16,200	8,230	8,580
9	3,910	9,190	9,540	e9,500	6,520	8,560	4,130	10,700	15,100	16,100	8,200	8,350
10	3,940	9,220	9,480	e9,320	6,500	8,560	4,030	11,500	15,200	16,100	8,310	7,630
11	3,950	9,450	9,560	e8,530	7,190	8,500	4,000	12,500	15,300	15,600	8,260	7,340
12	3,980	9,390	9,560	e7,730	8,160	8,540	4,000	14,100	15,300	15,100	8,230	7,360
13	3,990	9,320	9,550	e7,150	8,470	8,190	3,990	16,600	15,200	14,600	8,150	7,430
14	3,960	9,350	9,540	e6,040	8,490	8,050	4,090	18,600	15,200	14,100	8,050	7,460
15	3,970	9,390	9,570	e5,770	8,510	8,000	4,130	18,600	15,100	13,800	8,090	7,490
16	4,010	9,360	9,460	e5,850	8,460	8,030	4,090	18,700	17,000	13,100	8,280	7,590
17	3,960	9,530	9,570	e5,860	8,480	7,250	4,070	17,000	18,500	12,200	8,470	7,560
18	3,950	9,480	9,540	e5,840	8,540	7,230	4,190	15,000	18,900	12,100	8,260	8,310
19	3,950	9,580	9,540	e6,100	8,650	7,140	4,320	15,000	18,200	12,200	8,210	9,370
20	3,930	9,470	9,540	e6,270	8,630	6,870	4,350	15,000	16,000	11,600	8,200	11,900
21	3,930	9,410	9,550	e6,440	8,600	7,140	4,470	15,200	14,900	11,400	8,180	12,300
22	3,970	9,450	9,560	e6,440	8,590	7,210	4,610	16,900	14,900	10,400	8,230	12,300
23	4,080	9,440	9,390	e6,450	8,400	7,170	4,760	19,600	14,800	10,400	8,380	10,200
24	3,970	9,510	9,350	e6,410	8,430	7,080	4,840	21,100	14,800	10,200	8,520	10,400
25	3,990	9,510	9,430	6,430	8,620	6,940	4,960	21,300	14,900	10,200	8,540	11,600
26	4,000	9,390	9,460	6,340	8,770	6,950	5,090	21,300	17,100	10,200	8,550	11,600
27	4,020	9,340	9,460	6,350	8,660	6,980	5,250	21,200	19,500	10,000	9,170	11,600
28	4,020	9,320	9,380	6,470	8,640	7,100	5,380	21,300	19,800	9,940	14,800	11,600
29	4,380	9,450	9,390	6,430	8,650	7,170	5,450	21,600	19,400	9,320	15,400	11,700
30	4,790	9,480	9,300	6,530	---	7,300	5,470	21,500	19,100	9,230	15,300	11,700
31	5,130	---	9,350	6,590	---	7,140	---	21,500	---	9,130	13,200	---
TOTAL	125,300	273,100	293,890	230,760	225,880	241,730	141,730	467,190	500,700	417,520	286,370	294,530
MEAN	4,042	9,103	9,480	7,444	7,789	7,798	4,724	15,070	16,690	13,470	9,238	9,818
MAX	5,130	9,580	9,600	9,850	8,770	8,640	6,410	21,600	22,500	18,900	15,400	12,400
MIN	3,900	5,920	9,300	5,770	6,420	6,870	3,990	5,660	14,800	9,130	8,050	7,340
AC-FT	248,500	541,700	582,900	457,700	448,000	479,500	281,100	926,700	993,100	828,200	568,000	584,200

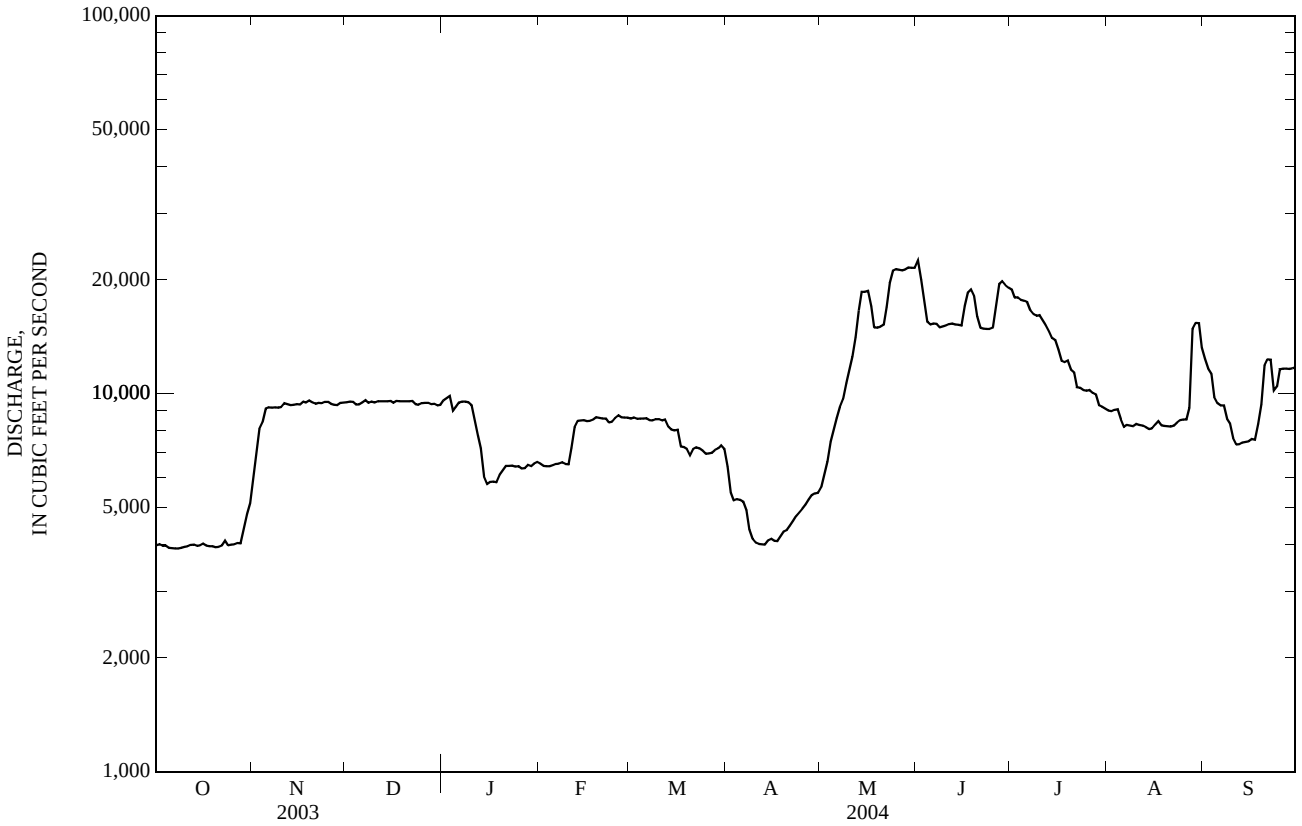
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)

MEAN	8,447	10,500	10,990	10,290	9,658	9,210	10,140	15,480	22,600	13,170	8,124	8,038
MAX	12,070	13,150	17,260	15,200	18,340	23,420	23,370	36,930	45,490	22,780	12,690	13,090
(WY)	(1992)	(2000)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1997)	(1991)	(1996)	(1989)
MIN	4,042	4,052	6,160	4,626	4,234	4,121	4,397	5,877	9,092	6,279	4,164	3,987
(WY)	(2004)	(2002)	(2002)	(2003)	(2001)	(2001)	(2001)	(1995)	(1987)	(1994)	(1994)	(2003)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004	
ANNUAL TOTAL	3,245,440		3,498,700			
ANNUAL MEAN	8,892		9,559		11,380	
HIGHEST ANNUAL MEAN					18,030	1996
LOWEST ANNUAL MEAN					7,040	2001
HIGHEST DAILY MEAN	27,000	Jun 5	22,500	Jun 1	53,400	Jun 6, 1997
LOWEST DAILY MEAN	3,860	Sep 6	3,900	Oct 7	2,670	May 29, 1984
ANNUAL SEVEN-DAY MINIMUM	3,910	Sep 5	3,920	Oct 5	3,110	May 25, 1984
MAXIMUM PEAK FLOW			22,800	Jun 1	54,700	Jun 7, 1997
MAXIMUM PEAK STAGE			14.05	Jun 1	21.65	Jun 7, 1997
ANNUAL RUNOFF (AC-FT)	6,437,000		6,940,000		8,247,000	
10 PERCENT EXCEEDS	16,000		16,100		17,000	
50 PERCENT EXCEEDS	7,600		8,660		10,200	
90 PERCENT EXCEEDS	3,960		4,130		5,370	

e--Estimated.

12388700 FLATHEAD RIVER AT PERMA, MT—Continued



12389000 CLARK FORK NEAR PLAINS, MT

LOCATION.--Lat 47°25'47", long 114°51'18" (NAD 27), in E½SW¼ sec.1, T.19 N., R.26 W., Sanders County, Hydrologic Unit 17010213, on right bank 2.4 mi southeast of Plains, 6.0 mi downstream from Flathead River, and at river mile 239.0.

DRAINAGE AREA.--19,958 mi^2.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1316.

REVISED RECORDS.--WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,449.11 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to Nov. 28, 1911, nonrecording gage at site 50 ft upstream at same elevation.

REMARKS.--Records good. Flow partly regulated by Hungry Horse Reservoir (station number 12362000) and by Flathead Lake (station number 12371500). Diversions for irrigation of about 335,000 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,620	8,340	11,500	10,800	8,440	10,400	11,800	15,300	40,100	27,600	11,000	15,200
2	5,640	8,970	11,600	10,600	8,350	10,400	11,400	15,200	36,700	26,400	10,900	14,200
3	5,630	9,930	11,500	10,600	8,190	10,400	11,200	16,400	33,300	25,800	10,900	13,800
4	5,670	10,500	11,500	9,020	8,090	10,300	11,200	18,900	30,700	25,200	10,900	12,600
5	5,630	11,100	11,400	e8,500	8,050	10,300	11,300	21,600	30,700	24,700	10,700	11,900
6	5,630	11,200	11,500	e8,000	8,110	10,300	11,700	23,600	32,600	24,300	10,000	11,800
7	5,630	11,000	11,600	e8,200	8,130	10,300	12,600	25,000	34,100	23,100	10,000	11,700
8	5,600	10,900	11,600	e8,600	8,080	10,200	13,100	25,300	33,200	22,300	10,000	11,100
9	5,640	11,000	11,700	8,880	8,080	10,300	13,700	26,100	31,100	22,000	10,000	10,600
10	5,610	11,000	11,600	9,670	8,040	10,700	13,800	26,500	30,000	21,600	10,000	10,000
11	5,660	11,400	11,600	10,700	8,560	11,400	13,500	27,100	30,000	20,900	10,100	9,540
12	5,690	11,600	11,500	10,500	9,480	11,800	13,000	27,900	31,000	20,200	9,980	9,430
13	5,700	11,600	11,500	9,610	9,930	11,600	12,800	29,700	30,400	19,500	9,870	9,490
14	5,770	11,500	11,500	8,860	9,870	11,100	13,500	30,500	29,300	18,600	9,710	9,620
15	5,810	11,500	11,500	8,180	9,770	11,200	14,600	29,700	28,600	18,100	9,620	10,100
16	5,880	11,400	11,500	7,810	9,700	11,100	14,900	28,900	29,600	16,900	9,630	10,600
17	5,900	11,300	11,500	7,890	9,910	10,500	14,200	27,000	30,400	15,800	9,730	10,800
18	5,890	11,400	11,400	8,070	10,100	10,300	13,500	25,000	30,300	15,300	9,660	11,100
19	5,830	11,600	11,400	7,950	10,300	10,700	12,900	24,600	29,200	15,400	9,660	12,200
20	5,830	11,700	11,300	7,880	10,400	10,900	12,500	25,700	27,200	14,800	9,650	14,800
21	5,780	11,600	11,100	8,290	10,500	11,200	12,100	26,900	25,900	14,500	9,650	16,300
22	5,840	11,600	11,100	8,920	10,400	11,200	11,800	29,700	25,100	13,800	9,670	16,500
23	5,770	11,600	11,200	8,770	10,300	11,100	11,500	34,200	24,700	13,400	9,700	14,600
24	5,790	11,400	11,200	8,400	10,100	11,400	11,400	37,000	24,500	13,200	9,790	14,000
25	5,800	11,300	11,000	8,140	10,300	11,900	11,400	37,000	24,400	12,800	9,930	15,200
26	5,800	11,400	11,000	8,050	10,500	12,400	11,700	35,800	26,400	12,700	10,100	15,400
27	5,810	11,300	11,300	8,010	10,500	12,500	12,000	35,700	29,300	12,600	10,500	15,200
28	5,840	11,300	11,200	8,060	10,500	12,500	13,100	37,700	29,400	12,400	17,200	15,100
29	6,070	11,300	11,100	8,050	10,500	12,400	14,700	40,400	28,900	11,800	19,100	15,000
30	6,800	11,400	10,800	8,160	---	12,300	15,700	40,300	28,200	11,400	18,900	15,000
31	7,810	---	10,800	8,430	---	12,100	---	39,400	---	11,200	16,600	---
TOTAL	181,370	333,140	352,000	271,600	273,180	345,200	382,600	884,100	895,300	558,300	343,150	382,880
MEAN	5,851	11,100	11,350	8,761	9,420	11,140	12,750	28,520	29,840	18,010	11,070	12,760
MAX	7,810	11,700	11,700	10,800	10,500	12,500	15,700	40,400	40,100	27,600	19,100	16,500
MIN	5,600	8,340	10,800	7,810	8,040	10,200	11,200	15,200	24,400	11,200	9,620	9,430
AC-FT	359,700	660,800	698,200	538,700	541,900	684,700	758,900	1,754,000	1,776,000	1,107,000	680,600	759,400
CFSM	0.29	0.56	0.57	0.44	0.47	0.56	0.64	1.43	1.50	0.90	0.55	0.64
IN.	0.34	0.62	0.66	0.51	0.51	0.64	0.71	1.65	1.67	1.04	0.64	0.71

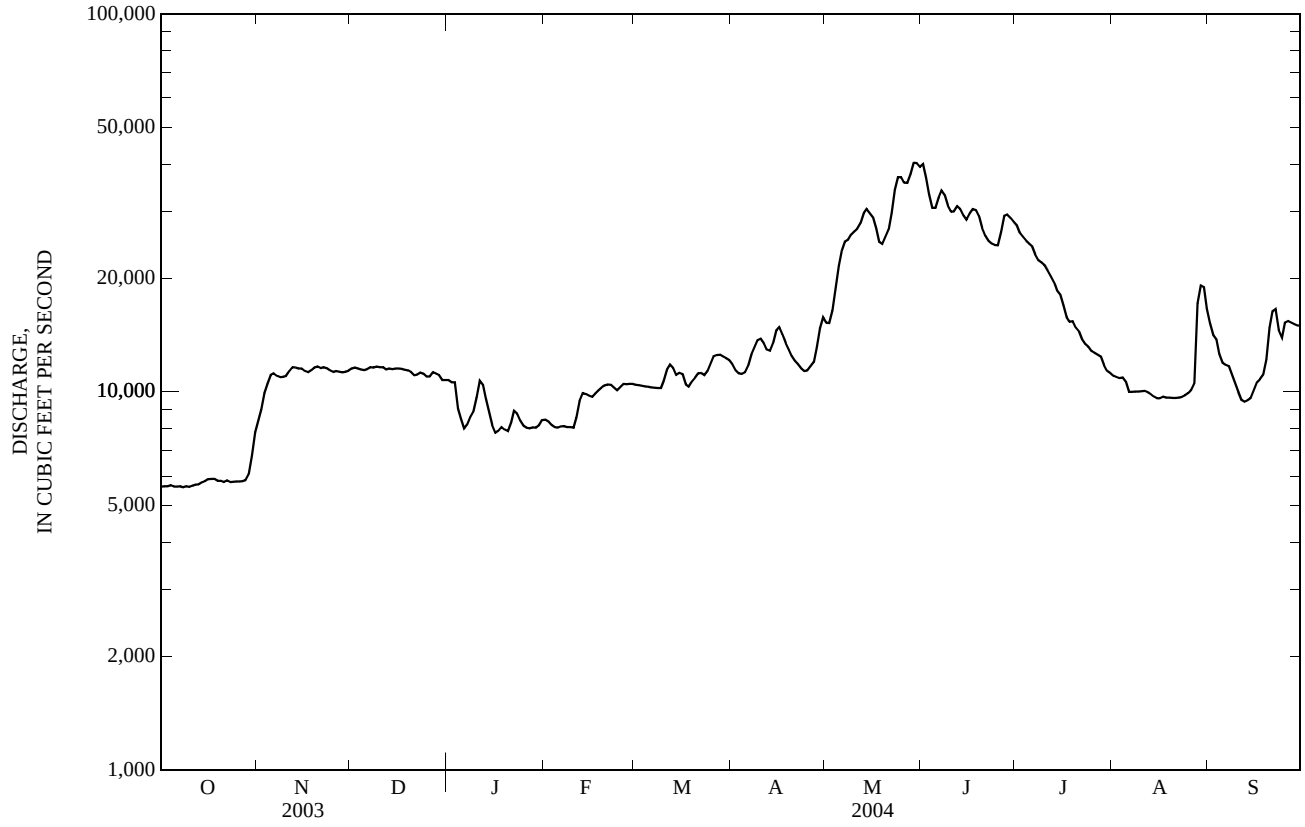
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2004, BY WATER YEAR (WY)

MEAN	10,490	11,460	12,020	11,950	11,800	11,890	19,330	44,210	54,510	25,660	11,010	9,650
MAX	23,550	21,170	27,630	22,320	30,070	31,390	47,830	89,760	101,600	76,930	24,840	16,920
(WY)	(1960)	(1928)	(1996)	(1934)	(1996)	(1996)	(1934)	(1928)	(1948)	(1916)	(1916)	(1985)
MIN	4,760	4,588	4,075	3,344	3,940	4,636	6,112	13,010	13,560	7,843	5,656	4,768
(WY)	(1932)	(1937)	(1937)	(1937)	(1937)	(1937)	(1937)	(1941)	(1977)	(1940)	(1988)	(1931)

12389000 CLARK FORK NEAR PLAINS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1911 - 2004	
ANNUAL TOTAL	5,452,350		5,202,820			
ANNUAL MEAN	14,940		14,220		19,510	
HIGHEST ANNUAL MEAN					29,420	1996
LOWEST ANNUAL MEAN					8,845	1941
HIGHEST DAILY MEAN	65,600	Jun 1	40,400	May 29	133,000	May 31, 1948
LOWEST DAILY MEAN	5,500	Sep 7	5,600	Oct 8	b3,200	Feb 8, 1936
ANNUAL SEVEN-DAY MINIMUM	5,540	Sep 5	5,630	Oct 5	3,250	Jan 11, 1937
MAXIMUM PEAK FLOW			40,800	May 30	134,000	Jun 5, 1948
MAXIMUM PEAK STAGE			9.85	May 30	19.17	Jun 5, 1948
INSTANTANEOUS LOW FLOW			a5,570	Oct 8	c3,200	Dec 10, 1940
ANNUAL RUNOFF (AC-FT)	10,810,000		10,320,000		14,130,000	
ANNUAL RUNOFF (CFSM)	0.748		0.712		0.978	
ANNUAL RUNOFF (INCHES)	10.16		9.70		13.28	
10 PERCENT EXCEEDS	30,900		28,300		44,200	
50 PERCENT EXCEEDS	11,200		11,400		13,100	
90 PERCENT EXCEEDS	5,720		8,010		6,500	

a--Gage height, 3.44 ft.
b--Estimated during period of ice-affected gage-height record.
c--Gage height, 2.85 ft.
e--Estimated.



12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT

LOCATION.--Lat 47°35'31", long 115°13'43" (NAD 27), in NW¼NE¼SE¼ sec.7, T.21 N., R.28 W., Sanders County, Hydrologic Unit 17010213, Lolo National Forest, on right bank 1.2 mi upstream from mouth and 5.5 mi east of Thompson Falls.

DRAINAGE AREA.--642 mi^2.

PERIOD OF RECORD.--March to September 1911, October 1911 to September 1916 (occasional gage heights, discharges, and discharge measurements), April 1956 to current year. Records for January and February 1911, published in WSP 916, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1246: 1911. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 2,429.97 ft (NGVD 29) (Bureau of Public Roads bench mark). October 1911 to September 1916, nonrecording gage at site 0.2 mi upstream at different elevation.

REMARKS.--Records good. Minor diversions upstream from station for irrigation, acreage unknown. Diversion from headwaters of Alder Creek in SW¼ sec.16, T.23 N., R.25 W., to supplement water supply for storage in Upper Dry Fork Reservoir in Little Bitterroot River basin. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a discharge of 6,190 ft^3/s, by slope-area measurement of peak flow at site 0.2 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	110	132	e95	148	129	400	552	1,120	340	178	152
2	117	122	131	e95	141	134	382	578	1,030	323	174	153
3	117	120	132	e90	133	131	363	690	957	308	173	153
4	117	114	122	e90	137	129	370	810	918	307	175	153
5	115	91	129	e80	140	127	428	838	917	303	172	151
6	115	98	146	e70	132	127	491	796	932	286	171	148
7	113	111	146	e80	138	122	570	733	892	287	179	146
8	114	111	135	e95	135	126	626	720	830	282	177	144
9	119	114	132	e105	132	157	653	739	758	273	171	142
10	117	120	114	e115	135	181	616	702	697	262	167	141
11	117	133	126	117	133	187	566	742	658	253	163	141
12	123	124	129	114	123	194	556	702	623	244	161	143
13	128	115	129	109	117	207	607	597	591	238	158	145
14	123	112	137	110	127	208	775	543	570	235	155	151
15	122	113	130	110	127	206	873	504	537	228	153	151
16	131	115	125	110	120	207	798	484	506	221	152	156
17	132	121	124	109	121	217	698	479	480	215	151	153
18	126	131	115	109	122	255	614	482	460	214	157	154
19	123	157	98	109	127	359	552	497	443	227	163	155
20	120	150	105	111	129	339	513	528	432	234	165	155
21	119	138	122	111	127	302	481	598	415	220	160	152
22	117	122	121	111	122	289	450	747	396	209	154	149
23	117	119	112	113	120	319	428	1,050	386	202	156	147
24	115	125	116	117	126	366	423	1,060	376	198	162	144
25	115	123	116	115	127	373	422	989	370	196	173	142
26	115	124	115	113	127	364	422	972	400	191	176	139
27	115	120	113	114	129	352	462	1,170	367	188	166	137
28	129	119	108	120	129	330	603	1,250	351	186	164	136
29	156	138	96	126	129	311	640	1,210	336	184	162	136
30	136	141	89	154	---	314	582	1,130	328	185	157	134
31	120	---	e100	159	---	370	---	1,170	---	182	153	---
TOTAL	3,760	3,651	3,745	3,376	3,753	7,432	16,364	24,062	18,076	7,421	5,098	4,403
MEAN	121	122	121	109	129	240	545	776	603	239	164	147
MAX	156	157	146	159	148	373	873	1,250	1,120	340	179	156
MIN	113	91	89	70	117	122	363	479	328	182	151	134
AC-FT	7,460	7,240	7,430	6,700	7,440	14,740	32,460	47,730	35,850	14,720	10,110	8,730
CFSM	0.19	0.19	0.19	0.17	0.20	0.37	0.85	1.21	0.94	0.37	0.26	0.23
IN.	0.22	0.21	0.22	0.20	0.22	0.43	0.95	1.39	1.05	0.43	0.30	0.26

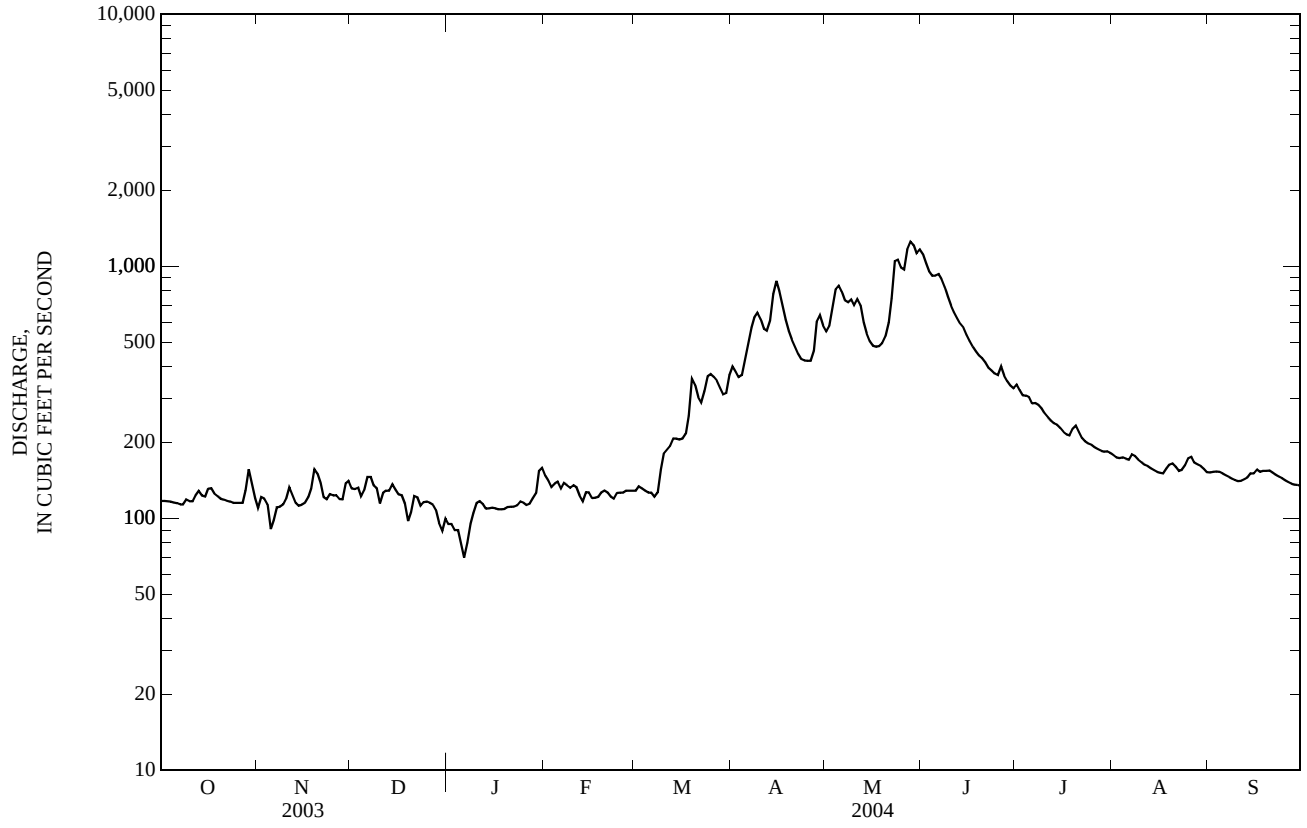
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	181	197	206	205	250	351	761	1,295	1,011	401	236	192
MAX	343	501	880	719	1,226	1,344	1,674	3,154	2,369	724	382	288
(WY)	(1960)	(1996)	(1996)	(1974)	(1996)	(1972)	(1996)	(1997)	(1974)	(1974)	(1997)	(1997)
MIN	112	115	101	109	103	120	238	374	244	140	113	105
(WY)	(1995)	(1988)	(1993)	(2004)	(1994)	(1964)	(1977)	(1977)	(1977)	(1977)	(1977)	(1994)

12389500 THOMPSON RIVER NEAR THOMPSON FALLS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	105,424		101,141			
ANNUAL MEAN	289		276		441	
HIGHEST ANNUAL MEAN					804	1997
LOWEST ANNUAL MEAN					176	1977
HIGHEST DAILY MEAN	1,270	May 26	1,250	May 28	5,360	Jun 9, 1964
LOWEST DAILY MEAN	89	Dec 30	70	Jan 6	67	Nov 24, 1993
ANNUAL SEVEN-DAY MINIMUM	105	Dec 25	86	Jan 1	73	Dec 31, 1994
MAXIMUM PEAK FLOW			1,260	May 28	6,080	Jun 9, 1964
MAXIMUM PEAK STAGE			4.26	May 28	8.53	Jun 9, 1964
INSTANTANEOUS LOW FLOW					a48	Dec 4, 1992
INSTANTANEOUS LOW STAGE					b1.01	Dec 17, 1964
ANNUAL RUNOFF (AC-FT)	209,100		200,600		319,300	
ANNUAL RUNOFF (CFSM)	0.450		0.430		0.687	
ANNUAL RUNOFF (INCHES)	6.11		5.86		9.33	
10 PERCENT EXCEEDS	694		644		1,070	
50 PERCENT EXCEEDS	164		153		235	
90 PERCENT EXCEEDS	117		113		132	

a--Gage height, 2.02 ft, result of freezeup.
b--Result of freezeup.
e--Estimated.



12390000 THOMPSON FALLS RESERVOIR AT THOMPSON FALLS

LOCATION--Lat 47°35'42", long 115°21'36" (NAD 27), in NE$^{1}/_{4}$ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork at Thompson Falls, at river mile 208.0.

DRAINAGE AREA.--20,968 mi^{2}.

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

REMARKS.--Reservoir is formed by two concrete dams, first generator installed July 1915. Usable capacity, 14,970 acre-ft between elevation 2,380.0 ft, spillway crest, and 2,396.0 ft, top of flashboards. Dead storage unknown. Elevation of gage is 2,380 ft (NGVD29). Figures given herein represent usable contents. Nonrecording gage is read several times daily but only midnight readings supplied. Water is used for power development and recreation. Records furnished by PPL EnergyPlus, LLC.

EXTREMES FOR PERIOD OF RECORD.--Maximum monthend contents observed, 16,420 acre-ft, May 12, 1997, elevation, 2,396.95 ft; no storage July 31, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 15,680 acre-ft, Sept. 19, 21, elevation, 2,396.47 ft; minimum observed, 3,680 acre-ft, Nov. 23, elevation, 2,385.82 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	2,395.76	14,620	--
October 31	2,395.97	14,930	+310
November 30	2,395.97	14,930	0
December 31	2,395.62	14,420	-510
Calendar Year 2003	--	--	-200
January 31	2,395.86	14,770	350
February 29	2,395.89	14,810	+40
March 31	2,395.88	14,800	-10
April 30	2,395.74	14,590	-210
May 31	2,395.96	14,910	+320
June 30	2,395.86	14,770	-140
July 31	2,395.74	14,590	-180
August 31	2,395.70	14,540	-50
September 30	2,396.31	15,440	+900
Water Year 2004	--	--	-820

12390700 PROSPECT CREEK AT THOMPSON FALLS, MT

LOCATION.--Lat 47°35'10", long 115°21'15" (NAD 27), in lot 12, SE¼SE¼SE¼ sec.7, T.21 N., R.29 W., Sanders County, Hydrologic Unit 17010213, on right bank 500 ft downstream from Dry Creek, 0.5 mi upstream from mouth, and 0.7 mi south of Thompson Falls.

DRAINAGE AREA.--182 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 2,382.40 ft (NGVD 29).

REMARKS.--Records good. No known regulation or diversions upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	31	33	42	45	62	318	366	470	154	74	60
2	37	31	33	42	44	64	300	406	441	145	73	59
3	36	31	34	42	44	66	287	503	426	138	76	58
4	36	31	33	40	43	69	290	576	425	137	75	57
5	35	30	34	34	44	70	330	577	438	132	72	56
6	35	30	38	e25	44	70	383	531	466	126	71	55
7	35	30	37	e35	44	71	441	487	438	125	74	54
8	35	30	36	41	44	75	489	500	395	120	72	54
9	35	29	35	44	44	80	487	509	362	117	70	53
10	34	30	35	44	45	88	448	481	343	114	68	53
11	33	37	36	43	45	98	416	488	332	111	67	53
12	34	33	36	43	45	104	407	436	315	108	66	53
13	34	31	37	42	45	119	441	394	303	106	65	53
14	33	30	40	42	45	175	548	363	291	103	64	53
15	33	30	39	42	46	191	594	334	275	101	64	53
16	34	31	39	42	46	194	523	325	261	97	63	55
17	33	34	39	42	47	200	448	325	247	96	63	53
18	32	36	39	41	50	222	392	335	236	95	64	53
19	32	36	39	41	51	278	352	349	228	100	62	52
20	32	35	40	41	51	295	324	389	220	94	62	51
21	32	33	40	41	51	275	300	434	210	92	61	51
22	31	31	40	41	51	266	278	519	202	89	61	51
23	31	31	40	41	51	284	265	563	194	87	61	51
24	31	31	41	42	52	330	264	538	187	85	62	51
25	31	31	41	41	54	347	265	496	180	84	62	51
26	31	32	41	40	55	329	270	488	176	82	69	51
27	31	31	41	40	57	311	306	552	175	81	62	50
28	35	31	42	42	58	288	404	578	166	80	61	50
29	35	36	41	43	60	270	411	568	165	78	61	50
30	32	35	40	51	---	265	378	527	156	76	60	49
31	31	---	41	48	---	296	---	506	---	75	60	---
TOTAL	1,036	958	1,180	1,278	1,401	5,852	11,359	14,443	8,723	3,228	2,045	1,593
MEAN	33.4	31.9	38.1	41.2	48.3	189	379	466	291	104	66.0	53.1
MAX	37	37	42	51	60	347	594	578	470	154	76	60
MIN	31	29	33	25	43	62	264	325	156	75	60	49
AC-FT	2,050	1,900	2,340	2,530	2,780	11,610	22,530	28,650	17,300	6,400	4,060	3,160
CFSM	0.18	0.18	0.21	0.23	0.27	1.04	2.08	2.56	1.60	0.57	0.36	0.29
IN.	0.21	0.20	0.24	0.26	0.29	1.20	2.32	2.95	1.78	0.66	0.42	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	54.2	79.6	112	115	159	220	477	782	533	160	83.2	61.4
MAX	168	469	701	735	875	828	877	1,425	1,468	317	109	79.9
(WY)	(1960)	(1996)	(1996)	(1974)	(1996)	(1972)	(1969)	(1997)	(1974)	(1997)	(1982)	(1959)
MIN	28.7	28.8	29.9	29.1	26.4	31.8	84.5	297	142	73.7	48.5	35.8
(WY)	(2002)	(2002)	(1988)	(2001)	(2001)	(2001)	(2001)	(1977)	(1987)	(1977)	(1977)	(2001)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	59,190		53,096			
ANNUAL MEAN	162		145		236	
HIGHEST ANNUAL MEAN					441	1974
LOWEST ANNUAL MEAN					85.8	2001
HIGHEST DAILY MEAN	797	May 26	594	Apr 15	4,960	Jan 16, 1974
LOWEST DAILY MEAN	29	Nov 9	25	Jan 6	25	Feb 19, 2001
ANNUAL SEVEN-DAY MINIMUM	30	Nov 4	30	Nov 4	25	Feb 27, 2001
MAXIMUM PEAK FLOW			612	Apr 15	5,490	Jan 16, 1974
MAXIMUM PEAK STAGE			3.39	Apr 15	9.86	Jan 16, 1974
INSTANTANEOUS LOW FLOW					22	Feb 8, 2001
ANNUAL RUNOFF (AC-FT)	117,400		105,300		171,200	
ANNUAL RUNOFF (CFSM)	0.891		0.797		1.30	
ANNUAL RUNOFF (INCHES)	12.10		10.85		17.65	
10 PERCENT EXCEEDS	446		425		644	
50 PERCENT EXCEEDS	69		60		100	
90 PERCENT EXCEEDS	33		33		43	

e--Estimated.

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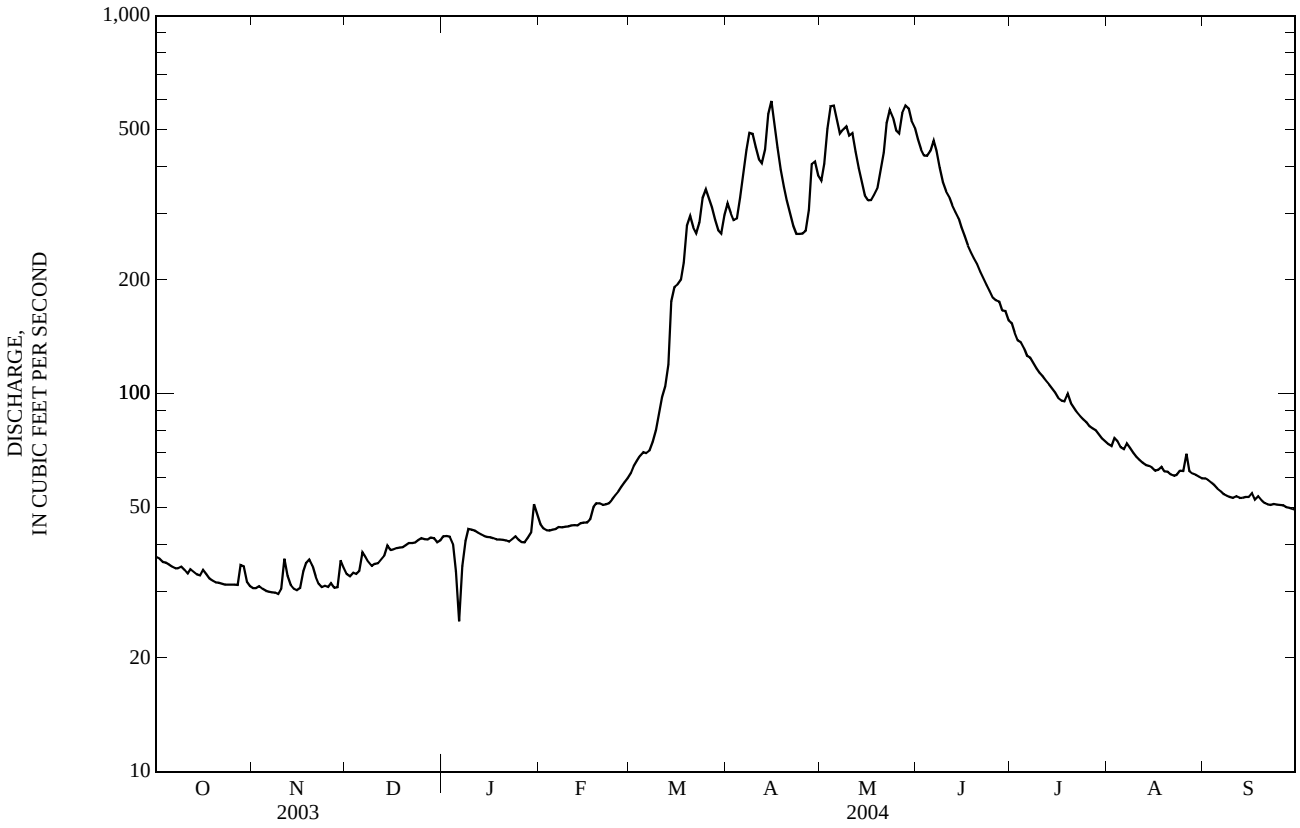
12390700 PROSPECT CREEK AT THOMPSON FALLS, MT—Continued



12391300 NOXON RAPIDS RESERVOIR NEAR NOXON

LOCATION.--Lat 47°57'38", long 115°44'00" (NAD 27), in $NE^1/_4SW^1/_4SW^1/_4$ sec.33, T.26 N., R.32 W., Sanders County, Hydrologic Unit 17010213, at dam on Clark Fork, 3 mi southeast of Noxon, 7.2 mi upstream from Bull River, and at river mile 169.7.

DRAINAGE AREA.--21,833 mi^2.

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

REMARKS.--Reservoir is formed by concrete and earthfill dam, construction began in 1955, completed in 1959. Storage began Apr. 3, 1959. Usable capacity, 334,600 acre-ft between elevation 2,270.00 ft, minimum operating level, and 2,331.00 ft. Prior to October 1962, published as "Noxon Reservoir." Record of daily elevation on file in Helena district office. Water-stage recorder, midnight readings. Elevation of gage is 2,270 ft (NGVD29). Figures given herein represent usable contents. Water is used for power production, flood control, and recreation. Records furnished by the Avista Corporation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 335,400 acre-ft, Apr. 7, 1960, elevation, 2,331.10 ft; minimum since first filling, 26,380 acre-ft, May 10, 1967, elevation, 2,277.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,600 acre-ft, Oct. 14, elevation, 2,330.49 ft; minimum, 286,600 acre-ft, Jan. 6, elevation, 2,324.70 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, SEPTEMBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	2,330.30	329,100	--
October 31	2,330.31	329,100	0
November 30	2,329.52	323,000	-6,100
December 31	2,327.95	310,800	-12,200
Calendar Year 2003	--	--	-12,600
January 31	2,330.05	327,100	+16,300
February 29	2,329.99	326,600	-500
March 31	2,328.73	316,900	-9,700
April 30	2,327.56	307,900	-9,000
May 31	2,329.40	322,000	+14,100
June 30	2,329.02	319,100	-2,900
July 31	2,329.23	320,700	+1,600
August 31	2,329.83	325,400	+4,700
September 30	2,328.28	313,400	-12,000
Water Year 2004	--	--	-15,700

12391400 CLARK FORK BELOW NOXON RAPIDS DAM, NEAR NOXON, MT

LOCATION.--Lat 47°57'40", long 115°43'58" (NAD 27), in SW$^1/_4$ sec.33, T.26 N., R. 32 W., Sanders County, Hydrologic Unit 17010213, at Noxon Rapids Dam, 1 mi upstream from Rock Creek, 3 mi southeast of Noxon, and at river mile 169.7.

DRAINAGE AREA.--21,833 mi^2.

PERIOD OF RECORD.--May 1960 to current year.

GAGE.--Plant generator rating or discharge through powerplant. Water-stage recorder on reservoir determines head on taintor gates. Elevation of gage is 2,320 ft (NGVD 29) (levels by The Washington Water Power Co.).

REMARKS.--Records good. Flow regulated by Hungry Horse Reservoir (station 12362000) and Flathead Lake (station 12371500). Diversions for irrigation of about 350,000 acres upstream from station. Some sub-surface flow indicated by comparison with records for adjacent gaging stations. Figures of discharge given herein are combined flows through turbines and spillway. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Records collected by the Avista Corporation., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

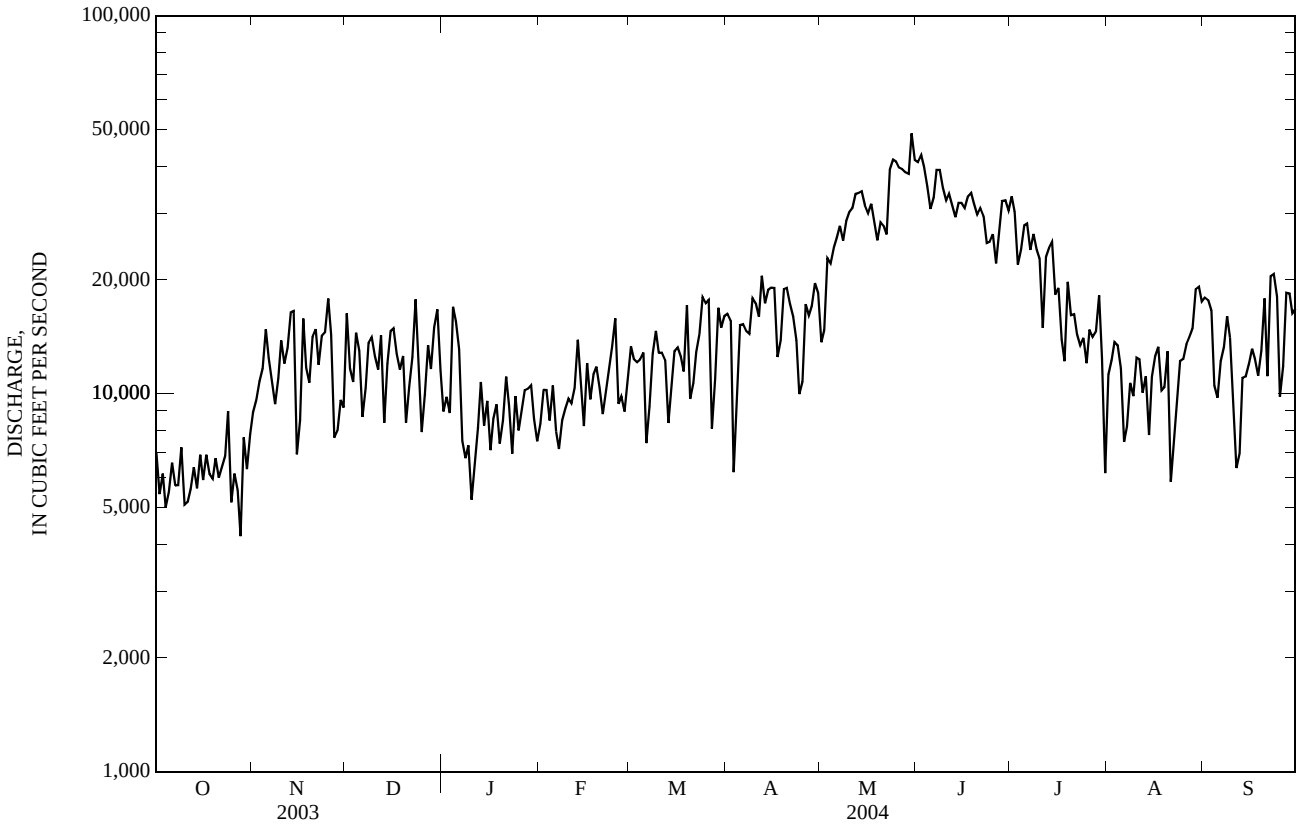
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,970	8,920	16,300	8,980	8,340	13,300	16,300	13,700	40,900	33,200	11,200	18,000
2	5,430	9,600	11,700	9,820	10,200	12,300	15,600	14,700	42,700	30,300	12,200	17,700
3	6,150	10,700	10,700	8,890	10,200	12,100	6,190	22,800	39,800	21,900	13,700	16,600
4	5,010	11,600	14,500	17,000	8,490	12,300	9,580	22,100	35,400	24,000	13,400	10,500
5	5,500	14,800	13,000	15,500	10,500	12,800	15,200	24,300	30,800	27,800	11,700	9,750
6	6,560	12,400	8,690	13,100	7,950	7,400	15,300	25,800	33,000	28,200	7,460	12,200
7	5,720	10,900	10,400	7,500	7,140	9,250	14,600	27,800	39,000	24,000	8,180	13,300
8	5,730	9,380	13,600	6,760	8,490	12,800	14,400	25,400	39,100	26,500	10,700	16,000
9	7,210	11,000	14,100	7,300	9,130	14,700	17,900	28,700	34,900	24,000	9,850	14,100
10	5,090	13,800	12,500	5,240	9,690	12,800	17,300	30,100	32,400	22,700	12,400	9,140
11	5,180	12,000	11,600	6,550	9,430	12,800	16,000	30,900	33,700	14,900	12,300	6,360
12	5,580	13,200	14,300	8,140	10,400	12,300	20,500	33,800	31,400	23,000	10,100	6,950
13	6,390	16,400	8,360	10,700	13,900	8,370	17,300	33,900	29,300	24,300	11,100	11,000
14	5,620	16,600	12,000	8,230	10,700	10,100	18,800	34,300	31,900	25,200	7,760	11,100
15	6,890	6,910	14,700	9,580	8,200	13,000	19,100	31,500	32,000	18,300	11,100	12,000
16	5,910	8,520	14,900	7,080	12,000	13,200	19,000	30,100	31,000	19,000	12,500	13,200
17	6,900	15,800	12,700	8,570	9,670	12,500	12,500	31,800	33,200	13,900	13,300	12,300
18	6,130	11,700	11,600	9,360	11,300	11,400	13,900	28,400	33,900	12,200	10,200	11,200
19	5,960	10,700	12,600	7,380	11,800	17,100	18,900	25,400	31,800	19,800	10,400	13,000
20	6,750	14,100	8,380	8,500	10,400	9,680	19,000	28,400	29,700	16,100	12,900	17,900
21	5,990	14,800	10,400	11,100	8,840	10,700	17,300	27,700	31,000	16,200	5,840	11,100
22	6,400	11,900	12,500	9,310	10,300	12,900	16,000	26,400	29,500	14,300	7,420	20,400
23	6,840	14,200	17,700	6,930	11,700	14,400	13,900	39,100	25,000	13,400	9,390	20,700
24	8,990	14,500	12,500	9,860	13,300	18,000	9,980	41,600	25,200	14,000	12,200	18,100
25	5,160	17,800	7,910	8,000	15,800	17,400	10,800	41,100	26,400	12,000	12,300	9,810
26	6,150	14,400	9,970	8,980	9,400	17,700	17,200	39,600	22,100	14,800	13,500	11,800
27	5,560	7,650	13,400	10,200	9,840	8,080	16,100	39,200	26,900	14,100	14,100	18,500
28	4,200	7,980	11,600	10,300	8,980	10,900	17,000	38,400	32,300	14,600	14,900	18,400
29	7,670	9,620	15,000	10,500	10,900	16,900	19,600	38,100	32,500	18,200	18,900	16,300
30	6,310	9,180	16,700	8,590	---	14,900	18,400	48,800	30,500	12,400	19,200	16,800
31	7,810	---	11,500	7,490	---	16,000	---	41,500	---	6,160	17,500	---
TOTAL	191,760	361,060	385,810	285,440	296,990	398,080	473,650	965,400	967,300	599,460	367,700	414,210
MEAN	6,186	12,040	12,450	9,208	10,240	12,840	15,790	31,140	32,240	19,340	11,860	13,810
MAX	8,990	17,800	17,700	17,000	15,800	18,000	20,500	48,800	42,700	33,200	19,200	20,700
MIN	4,200	6,910	7,910	5,240	7,140	7,400	6,190	13,700	22,100	6,160	5,840	6,360
AC-FT	380,400	716,200	765,300	566,200	589,100	789,600	939,500	1,915,000	1,919,000	1,189,000	729,300	821,600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2004, BY WATER YEAR (WY)

MEAN	11,520	13,070	14,110	14,160	14,930	16,200	22,540	40,270	50,160	23,050	10,610	10,240
MAX	16,160	19,890	31,480	22,230	34,640	33,700	46,450	88,150	92,590	40,730	17,720	16,410
(WY)	(1976)	(1996)	(1996)	(1974)	(1996)	(1996)	(1996)	(1997)	(1974)	(1982)	(1997)	(1985)
MIN	6,172	6,830	8,606	7,141	6,185	6,925	4,873	14,460	13,400	8,330	5,350	4,838
(WY)	(1961)	(2002)	(2002)	(2003)	(2001)	(2001)	(1977)	(1973)	(1977)	(1977)	(1988)	(1973)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1960 - 2004	
ANNUAL TOTAL	5,899,230		5,706,860			
ANNUAL MEAN	16,160		15,590		20,070	
HIGHEST ANNUAL MEAN					31,870	1996
LOWEST ANNUAL MEAN					11,170	1977
HIGHEST DAILY MEAN	70,200	Jun 2	48,800	May 30	125,000	Jun 12, 1964
LOWEST DAILY MEAN	3,580	Mar 1	4,200	Oct 28	60	Jan 29, 1989
ANNUAL SEVEN-DAY MINIMUM	5,330	Sep 5	5,730	Oct 2	2,250	Aug 30, 1963
ANNUAL RUNOFF (AC-FT)	11,700,000		11,320,000		14,540,000	
10 PERCENT EXCEEDS	33,300		30,800		40,200	
50 PERCENT EXCEEDS	11,700		12,800		15,000	
90 PERCENT EXCEEDS	5,820		6,960		7,250	

12391400 CLARK FORK BELOW NOXON RAPIDS DAM, NEAR NOXON, MT—Continued



SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA

All elevations listed for the following reservoirs are referenced to the National Geodetic Vertical Datum of 1929.

CAMAS RESERVOIRS.--A group of four reservoirs in the Little Bitterroot River basin operated for irrigation and recreation. Nonrecording gages are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. May to July 1948 scattered daily contents for individual reservoirs, published in WSP 1080.

12372500 LITTLE BITTERROOT LAKE.

LOCATION.--Lat 48°05'34", long 114°41'51" (NAD 27), in $SE^1/_4SE^1/_4SW^1/_4$ sec.16, T.27 N., R.24 W., Flathead County, Hydrologic Unit 17010212, at dam on Little Bitterroot River, 2 mi southwest of Marion and at river mile 70.3.

DRAINAGE AREA.--31.8 mi^2.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1918. Usable capacity, 26,400 acre-ft between elevation 3,897.98 ft and 3,906.48 ft. Dead storage is unknown; reservoir was a natural lake. Prior to 1960, usable capacity, 24,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 27,570 acre-ft, Apr. 30, 1997, elevation, 3,906.74 ft; no storage at times in 1939-46.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 5,600 acre-ft, Apr. 30, elevation, 3,900.37 ft; minimum observed, 3,500 acre-ft, Sept. 30, elevation, 3,899.58 ft.

12373500 HUBBART RESERVOIR

LOCATION.--Lat 47°55'43", long 114°43'53" (NAD 27), in $SE^1/_4NE^1/_4$ sec.18, T.25 N., R.24 W., Flathead County, Hydrologic Unit 17010212, at dam on Little Bitterroot River, 9 mi northwest of Niarada and at river mile 55.8.

DRAINAGE AREA.--114 mi^2.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by concrete variable-radius dam; storage began in 1924. Usable capacity, 12,120 acre-ft between elevation 3,140.0 ft and 3,210.0 ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 13,050 acre-ft, May 31, 1959, elevation, 3,220.92 ft; no storage September to December 1959, Sept. 30, Oct. 1, 1973, October through November 1987.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,540 acre-ft, May 31, elevation, 3,193.82 ft; minimum observed, 199 acre-ft, Sept. 30, elevation, 3,160.80 ft.

12375000 UPPER DRY FORK RESERVOIR

LOCATION.--Lat 47°44'55", long 114°40'53" (NAD 27), in $SE^1/_4SE^1/_4SW^1/_4$ sec. 16, T.23 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 4 mi northwest of Lonepine.

DRAINAGE AREA.--8.53 mi^2.

PERIOD OF RECORD. --April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1940. Usable capacity, 2,810 acre-ft between elevation 2,900.0 ft and 2,928.5 ft. No dead storage. Prior to 1960, usable capacity, 2,700 acre-ft. Natural flow of Alder Creek in Thompson River basin is diverted in $SW^1/_4$ sec 16, T.23 N., R.25 W., and carried by transbasin canal to upper Dry Fork Creek for storage in this reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,140 acre-ft, May 31, 1980, elevation, 2,929.5 ft; no storage at times in 1940, 1942, 1943.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 2,430 acre-ft, July 31, elevation, 2,927.20 ft; minimum, 437 acre-ft, Sept. 30, elevation, 2,915.30 ft.

12375500 LOWER DRY FORK RESERVOIR

LOCATION.--Lat 47°42'00", long 114°40'02" (NAD 27), in $SW^1/_4NW^1/_4NW^1/_4$ sec.3, T.22 N., R.24 W., Sanders County, Hydrologic Unit 17010212, at dam on Dry Fork Creek, 1 mi west of Lonepine.

DRAINAGE AREA.--17.8 mi^2.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year. Records published in WSP 1316 were listed in error and should not be used.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1921. Usable capacity, 3,890 acre-ft, between elevation 2,830.5 ft and 2,856.3 ft. Prior to 1960, usable capacity, 4,000 acre-ft. Water also supplied by transbasin diversion from Little Bitterroot River and Mill Creek. No dead storage. Reservoir is also known as Lonepine Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 4,270 acre-ft, May 31, 1980, elevation, 2,857.4 ft; no storage Aug. 31, 1944, Aug. 31, Sept. 30, 1946, Oct. 31, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 2,380 acre-ft, June 30, elevation, 2,851.50 ft; minimum observed, 604 acre-ft, Sept. 30, elevation, 2,841.70 ft.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA—Continued

CAMAS RESERVOIRS MONTHEND CONTENTS, IN ACRE-FEET
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Little Bitterroot	Hubbert	Upper Dry Fork	Dry Fork	Total of 4
Oct. 31	4,800	723	557	729	6,810
Nov. 30*	4,000	849	576	729	6,150
Dec. 30	4,000	1,050	649	729	6,430
Jan. 31	4,100	1,270	671	752	6,790
Feb. 29	4,600	e1,670	671	752	e7,690
Mar. 31	5,300	2,160	864	1,160	9,480
Apr. 30.	5,600	3,410	1,180	1,570	11,760
May 31*	5,300	3,540	1,830	1,840	12,510
June 30	4,500	3,380	2,320	2,380	12,580
July 31	4,200	1,050	2,430	1,320	9,000
Aug. 31	4,200	323	912	712	6,150
Sept. 30	3,500	199	437	604	4,740

*--Measured 1-2 days after the end of the month.
e--Estimated.

MISSION VALLEY RESERVOIRS.--A group of eight reservoirs, in an area east of and tributary to Flathead River and between Flathead Lake and Jocko River, Lake County, Hydrologic Unit 17010212, is operated for irrigation. Nonrecording gages are read on the last day of the month. Figures given herein represent usable contents. Records furnished by Bureau of Indian Affairs. April to July 1948 monthend contents and daily maximum for individual reservoirs, published in WSP 1080.

12371000 TURTLE LAKE

LOCATION.--Lat 47°40'19", long 114°04'32" (NAD 27), in $SW^1/_4NW^1/_4NE^1/_4$ sec.18, T.22 N., R.19 W., at outlet works 4 mi southeast of Polson.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1932. Prior to October 1968, published as "Twin Reservoir." Usable capacity, 899 acre-ft between elevation 3,061.0 ft and 3,090.5 ft. Dead storage is unknown; reservoir was a natural lake. Reservoir has a natural watershed and fed by Hell Roaring Creek and Bisson Creek.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,000 acre-ft, June 30, 1996, elevation, 3,092.02 ft; no storage at times in July 1941, August and September 1944, October 1957, July, August and September 1977, July through October 1992, March 1994, October through December 1994, August 2001, August 2003, and July through August 2004.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 268 acre-ft, Nov. 30, elevation, 3,076.20 ft; no storage, July 31 and Aug. 31.

12376700 LOWER CROW RESERVOIR

LOCATION.--Lat 47°30'09", long 114°13'35" (NAD 27), in $SW^1/_4SE^1/_4SE^1/_4$ sec.11, T.20 N., R.21 W., at outlet works on Crow Creek, 5.2 mi northwest of Charlo, at river mile 3.44.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1933. Usable capacity 10,350 acre-ft between elevation 2,800 ft and 2,877.0 ft. No dead storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 10,770 acre-ft, May 21, 22, 1948, elevation, 2,878.2 ft; no storage Sept. 30, 1963, Oct. 31, Nov. 30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 9,480 acre-ft, Sept. 30, elevation, 2,874.40 ft; minimum observed, 2,560 acre-ft, Oct. 31, elevation 2,843.00 ft.

12377200 MISSION RESERVOIR

LOCATION.--Lat 47°18'54", long 114°01'15" (NAD 27), in $NW^1/_4SW^1/_4SE^1/_4$ sec.15, T.18 N., R.19 W., at outlet works on Mission Creek, 4 mi east of St. Ignatius and at river mile 16.7.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1935. Usable capacity 8,130 acre-ft between elevation 3,340.7 ft and 3,406.0 ft. Prior to 1993, usable capacity, 7,250 acre-ft. No dead storage.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA—Continued

EXTREMES FOR PERIOD OF RECORD.-- Maximum contents observed, 8,400 acre-ft, June 30, 2002, elevation, 3,409.86 ft; no storage at times during September 1949, February, March, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 8,220 acre-ft, June 30, elevation, 3,410.25 ft; minimum observed, 918 acre-ft, Feb. 29, elevation, 3,378.33 ft.

12377300 ST. MARYS LAKE

LOCATION.--Lat 47°15'58", long 113°56'08" (NAD 27), in $SW^1/_4NE^1/_4NE^1/_4$ sec.6, T.17 N., R.18 W., at outlet works on Dry Creek, 8 mi southwest of St. Ignatius.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1919. Prior to October 1968, published as "Tabor Reservoir." Usable capacity, 23,500 acre-ft between elevation 3,911.5 ft and 4,025.0 ft, not including contents of natural lake., Prior to 1993, usable capacity, 23,300 acre-ft. Reservoir is fed by Dry Creek and also by a transbasin diversion from Jocko River.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 23,510 acre-ft, June 30, 1976, June 30, 1978, elevation, 4,025.7 ft; no storage Sept. 30, 1969, Feb. 28, 1995, and December 2001 through March, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 23,060 acre-ft, June 30, elevation, 4,024.10 ft; minimum observed, 150 acre-ft, Jan. 31, elevation, 3,912.50 ft, estimated.

12377900 PABLO RESERVOIR

LOCATION.--Lat 47°38'25", long 114°08'33" (NAD 27), in $SW^1/_4SW^1/_4NE^1/_4$ sec.27, T.22 N., R.20 W., at outlet works 3 mi south of Polson, 3 mi northwest of Pablo.

DRAINAGE AREA.--Off-channel storage reservoir.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1914. Usable capacity, 28,400 acre-ft between elevation 3,179 ft, gate sill, and 3,210.2 ft. Prior to 1994 water year, published as usable capacity, 27,100 acre-ft. No dead storage. Reservoir is fed entirely by Pablo feeder canal, some water supplied by Flathead pumping plant.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 28,760 acre-ft, June 30, 1998, elevation, 3,211.07 ft; no storage at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 14,110 acre-ft, May 31, elevation, 3,202.60 ft; no contents, Sept. 30, reservoir under repair.

12378200 McDONALD RESERVOIR

LOCATION.--Lat 47°25'31", long 113°59'27" (NAD 27), in $SE^1/_4NE^1/_4NE^1/_4$ sec.10, T.19 N., R.19 W., at outlet works on Post Creek, 9 mi east of Charlo, and at river mile 12.4.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1919. Usable capacity, 8,220 acre-ft (revised), not including contents of natural lake. Prior to 1993, usable capacity, 8,220 acre-ft and 7,2000 ac-ft from 1993 to 2002. Dead storage unknown.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 8,330 acre-ft, June 30, 1983, elevation, 3,598.5 ft; no storage Aug. 31, 1961, Aug. 30, 1966, Oct. 31, 1971, Apr. 30, 1972, October 1994 through April 1995, August 1999 to Apr. 30, 2000, December 2001 through February 2002.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 8,020 acre-ft, June 30, elevation, 3,597.00 ft; minimum observed, 200 acre-ft, Jan. 31, elevation, 3,547.20 ft., estimated.

12378300 KICKING HORSE RESERVOIR

LOCATION.--Lat 47°27'25", long 114°04'35" (NAD 27), in $SE^1/_4NE^1/_4NE^1/_4$ sec.36, T.20 N., R.20 W., at outlet works 4 mi northeast of Charlo.

DRAINAGE AREA.--Off channel storage reservoir.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1930. Usable capacity, 9,200 acre-ft between elevation 3,042.00 ft and 3,061.94 ft. Prior to 1993, usable capacity, 8,350 acre-ft. Dead storage, 70 acre-ft below elevation 3,042.0 ft. Reservoir is fed entirely by canals leading from South Crow Creek and Post Creek. Formerly published as 12379700 Kicking Horse Reservoir prior to 1988 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 10,320 acre-ft, June 30, 1976, May 31, 1980, elevation, 3,064.4 ft; no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 8,560 acre-ft, June 30, elevation, 3,062.20 ft; minimum observed, 1,640 acre-ft, Oct. 31, elevation, 3,050.39 ft.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA—Continued

12378400 NINEPIPE RESERVOIR

LOCATION.--Lat 47°27'20", long 114°08'08" (NAD 27), in $NE^1/_4NW^1/_4NW^1/_4$ sec.34, T.20 N., R.20 W., at outlet works 2 mi northeast of Charlo.

DRAINAGE AREA.--Off channel storage reservoir.

PERIOD OF RECORD.--December 1939, April 1940, September 1940 to current year.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1911. Usable capacity 15,000 acre-ft between elevation 2,895.4 ft and 3,010.0 ft. Prior to 1993, usable capacity, 14,870 acre-ft. No dead storage. Reservoir is fed entirely from Kicking Horse Reservoir and water can be pumped from Crow Creek by the Crow pump. Formerly published as 12380000 Ninepipe Reservoir prior to 1988 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 16,950 acre-ft, June 30, 1974, elevation, 3,012.3 ft; no storage Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 14,080 acre-ft, June 30, elevation, 3,009.50 ft; minimum observed, 1,220 acre-ft, Oct. 31, elevation, 2,996.33 ft.

MISSION VALLEY RESERVOIRS MONTHEND CONTENTS, IN ACRE-FEET,
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Turtle	Lower Crow	Mission	St. Mary's	Pablo	McDonald	Kicking Horse	Ninepipe	Total of 8
Oct. 31	147	2,560	1,080	2,550	12,730	345	1,640	1,220	22,270
Nov. 30*	268	3,320	1,080	192	12,800	314	2,610	1,810	22,390
Dec. 30	137	4,390	1,040	183	12,820	285	2,120	2,450	23,430
Jan. 31	140	5,640	e1,000	e150	12,850	e200	1,860	2,460	e24,300
Feb. 29	110	6,780	918	e250	12,400	335	2,110	2,630	e25,530
Mar. 31	86	7,950	967	610	12,920	406	2,060	2,660	27,660
Apr. 30.	76	9,260	1,690	5,340	11,400	898	2,590	3,440	34,690
May 31*	118	9,130	5,640	18,680	14,110	4,980	3,820	3,670	60,150
June 30	194	8,700	8,220	23,060	13,200	8,020	8,560	14,080	84,030
July 31	0	7,370	6,620	16,660	3,440	6,840	5,980	9,620	56,530
Aug. 31	0	7,340	4,050	8,140	1,670	4,280	2,710	4,160	32,350
Sept. 30	135	9,480	5,760	5,260	*0	5,780	4,550	4,200	35,160

*--Measured 1-2 days after the end of the month.
e--Estimated.
*--Under repair.

12380000 UPPER JOCKO LAKE

LOCATION.--Lat 47°11'34", long 113°42'44" (NAD 27), in $NE^1/_4NW^1/_4$ sec. 36, T. 17 N., R. 17 W., Missoula County, Hydrologic Unit 17010212, at dam on Jocko River, 17.3 mi southeast of Arlee, and at river mile 41.8.

DRAINAGE AREA.--2.99 mi^2.

PERIOD OF RECORD.--April 1968 to current year. Nonrecording gage read at end of month. U.S. Geological Survey began publishing data October 1988.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1967. Was previously known as "Black Lake" prior to dam construction. Usable capacity, 5,200 acre-ft, between elevation 4,390.0 ft, outlet sill, and 4,440.0 ft, spillway elevation. Prior to 1993, usable capacity, 4,440 acre-ft. Dead storage, 763 acre-ft. Transbasin diversion takes water from Placid Creek in Clearwater River basin in $SW^1/_4$ sec. 29, T. 17 N., R. 16 W., to Upper Jocko Lake, thence to Lower Jocko Lake. The emergency spillway returns water to the Clear Water River Basin over the basin divide. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 4,290 acre-ft, May 31, 1971, elevation, 4,439.1 ft; no storage at times each year.

EXTREMES FOR CURRENT YEAR.-- Maximum contents observed, 1,690 acre-ft, May 31, elevation, 4,416.35 ft; no storage most of year.

12380500 LOWER JOCKO LAKE

LOCATION.--Lat 47°12'10", long 113°45'35" (NAD 27), in $NW^1/_4SW^1/_4NW^1/_4$ sec.27, T.17 N., R.17 W., Missoula County, Hydrologic Unit 17010212, at dam on Jocko River, 15 mi east of Arlee, and at river mile 39.3.

DRAINAGE AREA.--7.39 mi^2.

PERIOD OF RECORD.--December 1939, April 1940, September, 1940, to current year (no winter records most years since 1947). Records for November 1957, published only in WSP 1736. May to July 1948 scattered daily contents, published in WSP 1080. Nonrecording gage read at end of month.

REMARKS.--Reservoir is formed by earthfill dam; storage began in 1937. Usable capacity, 6,380 acre-ft between elevation 4,267.0 ft and 4,340.0 ft. Prior to 1960, usable capacity, 7,600 acre-ft at elevation 4,350 ft and 1960-1992, usable capacity, 5,380 acre-ft. Dead storage unknown below elevation 4,267 ft, sill of outlet conduit. Some water may then be diverted to St. Mary's Lake for use in the Mission Valley. Figures given herein represent usable contents. Water is used for irrigation and recreation. Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 6,700 acre-ft, June 9, 1948, elevation, 4,342.7 ft; no storage at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,740 acre-ft, June 30, elevation, 4,315.00 ft; no storage most of year.

SMALLER RESERVOIRS IN PEND OREILLE RIVER BASIN IN MONTANA—Continued

UPPER AND LOWER JOCKO RESERVOIR MONTHEND CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Upper Jocko Lake	Lower Jocko Lake
Oct. 31	0	0
Nov. 30	0	0
Dec. 30	0	0
Jan. 31	0	0
Feb. 29	0	0
Mar. 31	0	0
Apr. 30.	1,610	1,360
May 31	1,690	3,740
June 30	1,390	3,500
July 31	e0	2,550
Aug. 31	0	446
Sept. 30	0	0

e--Estimated.

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID

LOCATION.--Lat 48°05'17", long 116°04'22", revised, (NAD 83), in SW¼SW¼NW¼ sec.27, T.55 N., R.3 E., Cabinet Quad., Bonner County, Hydrologic Unit 17010213, on right bank 0.7 mi downstream from Cabinet Gorge Dam at cableway, 2.1 mi downstream from Blue Creek, 6.1 mi southeast of Clark Fork, and at mile 149.2.

DRAINAGE AREA.--22,067 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 2,060.00 ft (NGVD 29) (levels by Washington Water Power Co). See WSP 1933 for history of changes made prior to Sept. 30, 1952. Water-stage recorder at site 0.4 mi upstream at elevation 60.00 ft lower Oct. 1, 1952, to Sept. 30, 1964, and at present elevation Oct. 1, 1964, to May 21, 1973.

REMARKS.--Records good. Flow regulated by Hungry Horse Reservoir, Flathead Lake, and Noxon Rapids Reservoir. Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 134,000 ft^3/s, May 18, 1997, gage height, 29.14 ft; minimum daily, 3,330 ft^3/s, Feb. 8, 1998.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 61,100 ft^3/s, May 27, gage height, 19.04 ft; minimum daily, 5,180 ft^3/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,530	9,030	16,300	8,460	8,640	13,200	18,400	15,800	44,700	34,200	11,100	16,400
2	5,470	9,020	11,500	9,760	10,400	14,000	16,100	16,800	46,800	31,800	12,600	18,500
3	6,230	11,400	11,300	9,050	10,200	12,000	7,370	25,700	42,000	23,900	12,900	17,700
4	5,470	10,700	14,300	17,200	9,260	12,600	10,800	24,500	39,100	26,500	14,100	10,800
5	5,450	15,100	13,400	17,300	10,800	13,300	17,100	28,400	35,100	28,800	10,700	9,500
6	5,500	13,000	8,700	12,700	7,850	7,790	16,600	28,400	36,500	28,700	8,120	12,000
7	5,660	11,900	9,550	6,700	6,640	9,540	16,400	29,500	42,400	26,700	7,390	13,700
8	5,940	8,180	14,500	6,600	9,700	13,600	15,300	27,800	41,500	26,900	10,800	17,200
9	6,970	11,700	13,900	6,750	8,030	14,900	20,100	31,600	39,100	26,000	10,000	13,400
10	5,590	14,400	12,900	5,540	10,200	13,500	19,600	33,500	34,800	24,800	13,300	9,430
11	5,490	13,400	11,400	7,140	10,800	12,400	18,400	33,500	36,500	14,400	12,100	5,180
12	5,450	13,300	14,000	7,650	9,900	13,300	22,100	36,100	35,000	24,400	9,760	7,420
13	5,870	15,800	8,850	10,600	13,000	9,070	19,900	36,300	32,000	25,400	10,900	11,600
14	6,480	15,400	12,300	7,610	11,400	10,800	21,800	36,300	34,100	26,600	6,870	11,100
15	6,040	7,820	14,700	11,300	8,870	14,100	21,500	34,900	34,300	20,500	11,600	11,500
16	6,490	8,110	14,500	5,850	12,800	13,500	22,000	31,800	33,700	18,900	11,800	13,400
17	6,890	16,300	13,400	9,250	10,700	13,000	13,600	33,200	35,500	15,000	14,200	13,600
18	6,150	11,500	11,500	8,610	10,500	12,200	15,800	31,400	36,300	12,400	10,100	11,100
19	6,090	11,300	11,700	7,530	12,200	18,600	20,900	28,800	36,200	20,900	10,400	13,300
20	6,400	13,800	9,820	9,160	11,300	10,100	20,200	30,600	30,500	15,800	12,900	21,900
21	6,680	14,600	9,360	11,000	8,880	11,600	18,400	30,600	34,100	16,800	6,400	8,110
22	6,390	11,800	12,400	8,460	10,300	13,600	17,600	27,700	31,500	14,600	6,430	21,900
23	6,740	14,300	17,900	7,040	11,700	15,100	14,000	41,100	28,000	14,600	9,610	21,000
24	9,690	15,400	13,000	10,100	14,300	19,000	11,800	46,200	27,000	14,000	12,100	18,800
25	5,700	18,600	7,370	7,740	17,200	18,700	11,100	42,700	28,700	12,500	12,500	10,800
26	5,390	13,500	10,900	9,160	9,090	22,500	18,700	43,000	23,700	15,500	14,200	12,700
27	5,410	7,940	13,000	10,800	9,060	7,250	18,400	42,700	29,000	14,500	15,100	17,900
28	5,590	8,700	11,400	9,840	9,590	11,300	18,500	42,400	33,200	13,800	15,000	18,800
29	6,300	9,010	16,300	10,700	11,700	18,000	21,400	40,300	36,100	18,000	19,200	16,900
30	7,200	11,100	17,100	8,480	---	16,000	20,000	52,400	32,800	12,100	20,700	17,600
31	7,630	---	11,200	8,160	---	17,200	---	45,000	---	6,630	18,000	---
TOTAL	193,880	366,110	388,450	286,240	305,010	421,750	523,870	1,049,000	1,050,200	625,630	370,880	423,240
MEAN	6,254	12,200	12,530	9,234	10,520	13,600	17,460	33,840	35,010	20,180	11,960	14,110
MAX	9,690	18,600	17,900	17,300	17,200	22,500	22,100	52,400	46,800	34,200	20,700	21,900
MIN	5,390	7,820	7,370	5,540	6,640	7,250	7,370	15,800	23,700	6,630	6,400	5,180
AC-FT	384,600	726,200	770,500	567,800	605,000	836,500	1,039,000	2,081,000	2,083,000	1,241,000	735,600	839,500

CAL YR 2003 TOTAL 6,196,040 MEAN 16,980 MAX 73,400 MIN 5,390 AC-FT 1,229,0000
WTR YR 2004 TOTAL 6,004,260 MEAN 16,410 MAX 52,400 MIN 5,180 AC-FT 1,191,0000

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1984 to October 2002, July to September 2003, April to September 2004.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May to July 1998, April to September 2000, November 2001 to October 2002, July to September 2003, April to September 2004 (discontinued).

INSTRUMENTATION.--Temperature recording data logger.

REMARKS.--Water-quality data previously published as Clark Fork at Whitehorse Rapids near Cabinet, ID (sta 12392000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.4 °C Aug. 14, 2004; minimum, 1.4°C Feb. 15, Mar. 22, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.4 °C Aug. 14; minimum, 4.7°C Apr. 30.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR													
26...	1100	28,000	143	8.0	17.0	10.2	<2.0	10.3	98	S1	<.010	.12	.024
MAY													
13...	1045	36,400	133	8.0	10.5	12.2	<2.0	9.3	93	S2	E.006	.14	.025
JUN													
15...	1025	36,400	133	8.0	14.0	9.5	<2.0	13.1	123	<1	<.010	E.08	.025
JUL													
21...	1145	16,900	170	8.1	24.0	19.6	<2.0	8.3	99	S1	E.005	.31	E.011
AUG													
23...	1205	5,770	183	8.2	14.5	21.3	<2.0	7.9	98	<1	E.009	.10	.027
SEP													
20...	1150	29,000	174	8.2	14.0	16.0	<2.0	8.2	90	<1	E.005	.13	.020

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
APR				
26...	<.006	.007	1	76
MAY				
13...	<.006	.012	3	295
JUN				
15...	<.006	.012	4	393
JUL				
21...	<.006	.039	9	411
AUG				
23...	.006	.014	1	16
SEP				
20...	<.006	.010	18	1,410

Date	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Potassium, water, fltrd, mg/L (00935)	Bicarbonate, wat unf fixed end pt, field, mg/L (00440)	Carbonate, wat unf fixed end pt, field, mg/L (00445)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Sulfate water, fltrd, mg/L (00945)	Chloride, water, fltrd, mg/L (00940)	Flouride water, fltrd, mg/L (00950)	Silica, water, fltrd mg/L (00955)
SEP													
20...	88	24.5	6.64	2.48	6	.64	105	.0	86	4.5	.90	<.2	7.0

E--Estimated.
S--Most probable value.

12391950 CLARK FORK BELOW CABINET GORGE DAM, NEAR CABINET, ID—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	APRIL			MAY			JUNE			JULY		
1	---	---	---	10.9	5.5	9.0	12.1	11.7	11.9	17.5	16.8	17.2
2	---	---	---	11.1	5.6	9.0	12.1	11.2	12.0	17.8	16.7	17.3
3	---	---	---	11.2	6.3	9.9	12.1	12.0	12.1	17.8	14.9	17.0
4	---	---	---	11.4	6.1	9.9	12.1	10.9	11.9	18.4	15.1	17.0
5	---	---	---	11.2	6.0	10.3	12.3	11.8	12.1	18.1	15.4	17.4
6	---	---	---	11.5	6.3	10.5	12.1	11.7	11.9	18.8	16.0	17.8
7	---	---	---	12.0	9.0	11.1	12.3	11.7	12.0	18.6	12.5	17.6
8	---	---	---	12.0	7.2	10.9	12.6	12.1	12.5	18.6	12.6	17.5
9	---	---	---	12.1	9.5	11.5	13.1	12.6	12.9	18.4	15.4	17.5
10	---	---	---	12.1	10.3	11.9	13.2	12.8	13.1	18.8	16.2	17.6
11	---	---	---	12.3	11.4	12.0	13.4	13.1	13.2	19.1	12.5	16.7
12	---	---	---	12.3	12.0	12.1	13.2	12.9	13.1	18.8	15.6	17.8
13	---	---	---	12.3	12.0	12.1	13.4	11.4	13.0	18.4	12.9	17.2
14	---	---	---	12.3	11.8	12.1	13.2	12.1	13.0	18.8	13.2	17.5
15	---	---	---	12.3	12.0	12.2	13.4	10.9	12.9	19.1	12.8	17.5
16	---	---	---	12.1	11.2	11.8	13.4	11.8	13.1	19.4	12.3	17.6
17	---	---	---	11.8	11.4	11.6	13.5	12.8	13.3	19.4	13.7	17.5
18	---	---	---	11.7	10.8	11.4	13.5	13.1	13.3	19.2	13.5	17.1
19	---	---	---	11.5	9.4	10.9	13.7	13.2	13.5	19.4	14.8	17.7
20	---	---	---	11.5	9.5	11.0	14.0	12.1	13.4	19.2	13.4	17.4
21	---	---	---	11.5	10.6	11.2	14.2	12.8	13.8	19.7	13.2	17.6
22	---	---	---	11.5	7.0	10.5	14.6	13.2	14.1	20.1	13.2	17.5
23	---	---	---	11.8	10.8	11.5	14.9	12.8	14.3	20.2	12.8	17.9
24	---	---	---	12.0	11.7	11.9	14.9	8.9	14.0	20.5	13.8	17.9
25	---	---	---	12.5	11.8	12.2	15.1	10.0	14.2	21.7	13.8	18.1
26	---	---	---	12.3	12.0	12.1	15.3	9.8	14.0	20.7	14.0	17.9
27	10.3	5.8	9.2	12.1	11.8	12.0	15.4	13.4	14.7	21.0	14.8	18.6
28	10.3	5.2	8.9	12.1	11.8	12.0	16.0	13.8	15.4	21.0	15.9	18.9
29	10.1	5.0	8.9	11.8	11.7	11.8	16.7	15.9	16.3	21.0	14.6	19.2
30	10.3	4.7	8.5	11.8	11.7	11.7	17.1	15.7	16.6	21.2	12.9	18.3
31	---	---	---	11.8	11.7	11.8	---	---	---	21.2	15.9	18.3
MONTH	---	---	---	12.5	5.5	11.3	17.1	8.9	13.4	21.7	12.3	17.7

	AUGUST			SEPTEMBER		
1	22.0	16.6	19.3	20.2	14.8	18.2
2	21.7	15.1	18.8	19.4	14.2	18.1
3	21.4	14.5	19.4	18.8	14.9	17.4
4	21.2	14.6	19.0	18.4	13.8	15.9
5	20.5	15.7	18.2	17.6	13.2	15.1
6	20.5	15.9	18.6	18.3	14.0	16.2
7	19.6	16.0	18.3	18.1	14.0	16.4
8	21.4	12.0	17.5	18.0	14.0	16.6
9	22.7	14.3	18.7	17.8	13.7	16.0
10	21.0	15.9	18.9	18.0	14.0	15.7
11	21.4	14.6	18.7	15.4	13.2	14.1
12	21.7	15.6	19.2	17.1	13.4	14.4
13	23.7	13.1	18.4	17.1	13.8	16.1
14	25.4	13.2	19.8	17.0	13.5	15.6
15	22.4	14.0	18.8	16.7	14.2	15.5
16	21.9	15.4	18.9	16.4	13.8	15.3
17	21.7	17.8	19.5	15.9	14.0	15.3
18	21.7	15.6	19.1	15.9	13.7	14.9
19	21.4	16.5	18.4	15.9	13.7	15.2
20	21.5	17.1	19.4	15.9	13.8	15.4
21	22.4	14.0	18.0	15.6	13.2	14.4
22	21.0	15.1	17.4	15.7	14.0	15.3
23	21.0	17.1	18.3	15.6	14.3	15.2
24	20.7	13.2	17.5	15.6	14.5	15.1
25	19.9	13.8	17.1	15.7	14.3	14.9
26	19.7	14.3	17.3	15.6	14.5	14.9
27	20.1	14.0	17.4	15.6	14.2	15.0
28	20.1	13.5	17.6	14.9	14.1	14.6
29	20.1	15.3	18.3	14.6	13.7	14.3
30	20.4	15.3	19.2	14.3	13.7	14.1
31	20.5	14.9	18.5	---	---	---
MONTH	25.4	12.0	18.5	20.2	13.2	15.5

12392000 CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, ID

LOCATION.--Lat 48°05'30", long 116°07'00" (NAD 27), in NW$^{1}/_{4}$ sec.30, T.55 N., R.3 E., Cabinet Quad., Bonner County, Hydrologic Unit 17010213, on right bank 3.0 mi downstream from Cabinet Gorge Dam, 4.5 mi southeast of Clark Fork, and at mile 146.9.

DRAINAGE AREA.--22,073 mi^2.

PERIOD OF RECORD.--September 1928 to current year. Prior to October 1952, published as "near Heron, Mont."

REVISED RECORDS.--WSP 1182: 1936. WSP 1736: 1931, 1936(m), 1937. WRD-ID-1973-1: 1972(M). WDR-ID-1973-1: 1972(M).

REMARKS.--Flow regulated by Hungry Horse Reservoir, Flathead Lake, and Noxon Rapids Reservoir. Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres. Discharge measurements made at Whitehorse Rapids indicate about 600 ft^3/s ground-water inflow between the measuring cableway for Clark Fork River below Cabinet Gorge Dam (12391950) and Whitehorse Rapids. Records given herein represent flow at Whitehorse Rapids, computed by adding this 600 ft^3/s to observed flows at 12391950, and are considered comparable to records at former site near Heron, except for minor surface inflow from additional drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft^3/s, May 29 to June 1, 1948; maximum gage height, 50.97 ft, May 31, 1948, site and elevation then in use; minimum observed, 270 ft^3/s, Aug. 12, 1952 (discharge measurement), at sites in use since October 1952, during filling of Cabinet Gorge Reservoir; minimum daily since reservoir filled, 762 ft^3/s, Sept. 2, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1894 reached a discharge of 195,000 ft^3/s from floodmark, elevation of 2,137.1 ft, at site about 4 mi upstream and 0.1 mi below "near Heron" site.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 53,000 ft^3/s, May 30; minimum daily, 5,780 ft^3/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8,130	9,630	16,900	9,060	9,240	13,800	19,000	16,400	45,300	34,800	11,700	17,000
2	6,070	9,620	12,100	10,400	11,000	14,600	16,700	17,400	47,400	32,400	13,200	19,100
3	6,830	12,000	11,900	9,650	10,800	12,600	7,970	26,300	42,600	24,500	13,500	18,300
4	6,070	11,300	14,900	17,800	9,860	13,200	11,400	25,100	39,700	27,100	14,700	11,400
5	6,050	15,700	14,000	17,900	11,400	13,900	17,700	29,000	35,700	29,400	11,300	10,100
6	6,100	13,600	9,300	13,300	8,450	8,390	17,200	29,000	37,100	29,300	8,720	12,600
7	6,260	12,500	10,200	7,300	7,240	10,100	17,000	30,100	43,000	27,300	7,990	14,300
8	6,540	8,780	15,100	7,200	10,300	14,200	15,900	28,400	42,100	27,500	11,400	17,800
9	7,570	12,300	14,500	7,350	8,630	15,500	20,700	32,200	39,700	26,600	10,600	14,000
10	6,190	15,000	13,500	6,140	10,800	14,100	20,200	34,100	35,400	25,400	13,900	10,000
11	6,090	14,000	12,000	7,740	11,400	13,000	19,000	34,100	37,100	15,000	12,700	5,780
12	6,050	13,900	14,600	8,250	10,500	13,900	22,700	36,700	35,600	25,000	10,400	8,020
13	6,470	16,400	9,450	11,200	13,600	9,670	20,500	36,900	32,600	26,000	11,500	12,200
14	7,080	16,000	12,900	8,210	12,000	11,400	22,400	36,900	34,700	27,200	7,470	11,700
15	6,640	8,420	15,300	11,900	9,470	14,700	22,100	35,500	34,900	21,100	12,200	12,100
16	7,090	8,710	15,100	6,450	13,400	14,100	22,600	32,400	34,300	19,500	12,400	14,000
17	7,490	16,900	14,000	9,850	11,300	13,600	14,200	33,800	36,100	15,600	14,800	14,200
18	6,750	12,100	12,100	9,210	11,100	12,800	16,400	32,000	36,900	13,000	10,700	11,700
19	6,690	11,900	12,300	8,130	12,800	19,200	21,500	29,400	36,800	21,500	11,000	13,900
20	7,000	14,400	10,400	9,760	11,900	10,700	20,800	31,200	31,100	16,400	13,500	22,500
21	7,280	15,200	9,960	11,600	9,480	12,200	19,000	31,200	34,700	17,400	7,000	8,710
22	6,990	12,400	13,000	9,060	10,900	14,200	18,200	28,300	32,100	15,200	7,030	22,500
23	7,340	14,900	18,500	7,640	12,300	15,700	14,600	41,700	28,600	15,200	10,200	21,600
24	10,300	16,000	13,600	10,700	14,900	19,600	12,400	46,800	27,600	14,600	12,700	19,400
25	6,300	19,200	7,970	8,340	17,800	19,300	11,700	43,300	29,300	13,100	13,100	11,400
26	5,990	14,100	11,500	9,760	9,690	23,100	19,300	43,600	24,300	16,100	14,800	13,300
27	6,010	8,540	13,600	11,400	9,660	7,850	19,000	43,300	29,600	15,100	15,700	18,500
28	6,190	9,300	12,000	10,400	10,200	11,900	19,100	43,000	33,800	14,400	15,600	19,400
29	6,900	9,610	16,900	11,300	12,300	18,600	22,000	40,900	36,700	18,600	19,800	17,500
30	7,800	11,700	17,700	9,080	---	16,600	20,600	53,000	33,400	12,700	21,300	18,200
31	8,230	---	11,800	8,760	---	17,800	---	45,600	---	7,230	18,600	---
TOTAL	212,490	384,110	407,080	304,840	322,420	440,310	541,870	1,067,600	1,068,200	644,230	389,510	441,210
MEAN	6,855	12,800	13,130	9,834	11,120	14,200	18,060	34,440	35,610	20,780	12,560	14,710
MAX	10,300	19,200	18,500	17,900	17,800	23,100	22,700	53,000	47,400	34,800	21,300	22,500
MIN	5,990	8,420	7,970	6,140	7,240	7,850	7,970	16,400	24,300	7,230	7,000	5,780
AC-FT	421,500	761,900	807,400	604,700	639,500	873,400	1,075,000	2,118,000	2,119,000	1,278,000	772,600	875,100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2004, BY WATER YEAR (WY)

MEAN	11,820	13,190	14,370	14,270	14,770	15,770	24,730	48,810	56,820	26,290	11,680	10,580
MAX	25,670	21,970	34,850	28,020	38,150	36,480	59,140	93,830	115,800	57,650	19,680	18,300
(WY)	(1960)	(1996)	(1996)	(1934)	(1996)	(1996)	(1934)	(1997)	(1948)	(1950)	(1997)	(1985)
MIN	5,466	5,008	4,732	3,527	4,217	5,122	6,165	16,450	15,480	9,214	6,320	5,448
(WY)	(1937)	(1937)	(1937)	(1937)	(1936)	(1937)	(1977)	(1941)	(1977)	(1940)	(1994)	(1994)

12392000 CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, ID—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1929 - 2004	
ANNUAL TOTAL	6,415,220		6,223,870			
ANNUAL MEAN	17,580		17,010		21,930	
HIGHEST ANNUAL MEAN					34,250	1996
LOWEST ANNUAL MEAN					10,180	1941
HIGHEST DAILY MEAN	74,000	Jun 2	53,000	May 30	153,000	May 30, 1948
LOWEST DAILY MEAN	5,990	Oct 26	5,780	Sep 11	762	Sep 2, 1962
ANNUAL SEVEN-DAY MINIMUM	6,150	Sep 8	6,270	Oct 2	2,710	Feb 10, 1936
ANNUAL RUNOFF (AC-FT)	12,720,000		12,350,000		15,890,000	
10 PERCENT EXCEEDS	36,600		33,900		47,800	
50 PERCENT EXCEEDS	12,600		13,900		15,600	
90 PERCENT EXCEEDS	6,310		7,480		7,180	

BEAVERHEAD COUNTY

SITE IDENTIFICATION.--450937112393701. Local number 08S09W01CCCC01.

LOCATION.--Lat 45°09'37", long 112°39'37" (NAD 27), Hydrologic Unit 10020002. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Tertiary sediments.

WELL CHARACTERISTICS.--Drilled in 1966, casing diameter 6 in., depth 47 ft.

INSTRUMENTATION.--Graphical water-level recorder from April 1967 to January 1981. Digital water-level recorder set to record every hour from July 1991 to current year.

DATUM.--Elevation of land-surface is 5,240 ft (NGVD 29) (from topographic map.) Measuring point: top of casing, 2.15 ft above land-surface datum. Reference point is 1.34 ft below measure point on well casing. Reference point established May 16, 2003: rebar 20 ft west of well casing at base of power pole, 1.34 ft below measuring point.

REMARKS.--Water levels affected by irrigation. All water levels reported below land-surface datum.

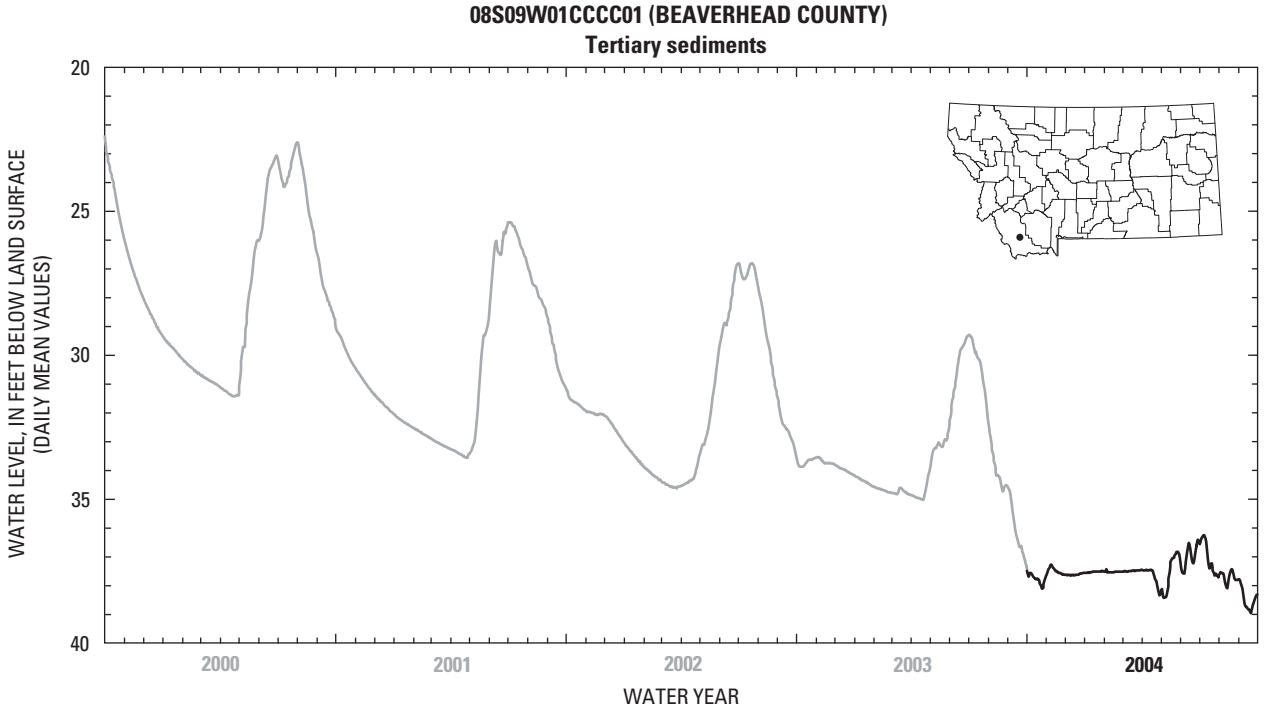
PERIOD OF RECORD.--August 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.43 ft, Aug. 10, 1971 (from recorder); lowest, 38.96 ft, Sept. 20, 2004 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 36.23 ft, July 7 (from recorder); lowest, 38.96 ft, Sept. 20 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 13	37.73	Apr. 15	37.46
Dec. 16	37.69	May 5	38.43
Feb. 4	37.50	Aug. 26	37.77
Mar. 5	37.53	Sept. 30	38.28



BEAVERHEAD COUNTY

SITE IDENTIFICATION.--450524112380701. Local number 08S08W31CCAA01.

LOCATION.--Lat 45°05'24", long 112°38'07" (NAD 27), Hydrologic Unit 10020002. Owner: Matador Cattle Company.

HYDROGEOLOGIC UNIT.--Tertiary sediments.

WELL CHARACTERISTICS.--Drilled in December 1992, casing diameter 5 in., depth 217 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from November 1997 to Aug. 1, 2003. Pressure transducer, data logger, and satellite transmitter, with data recorded every hour and transmitted every 4 hours, from Aug. 1, 2003 to current year.

DATUM.--Elevation of land surface is 5,520.7 ft (NGVD 29). Measuring point: top of PVC cap, 2.00 ft above land-surface datum. Prior to Feb. 3, 2000, measuring point was top of PVC casing, 2.20 ft above land-surface datum. Reference point established May 20, 1999: top of steel rod near well casing along fence line, 8.71 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

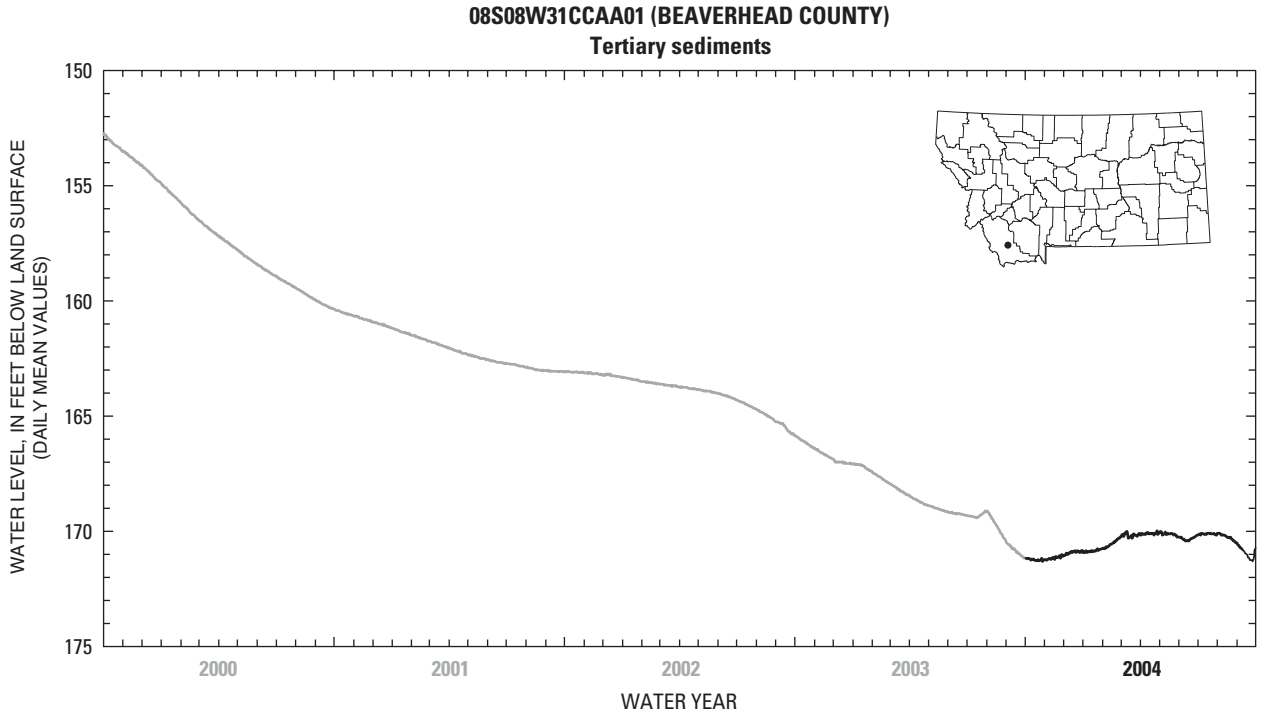
PERIOD OF RECORD.--Measured periodically December 1992 to November 1997 and continuously recorded every 4 hours from November 1997 to Aug. 1, 2003; data collected hourly from Aug. 1, 2003 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 138.72 ft, Oct. 23, 1995 (measured); lowest, 171.50 ft, Oct. 29, 2003 (from recorder)

EXTREMES FOR CURRENT YEAR.--Highest water level 169.91 ft, Apr. 27 (from recorder); lowest 171.50 ft, Oct. 29 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 16	170.89	May 21	170.13
Feb. 4	170.79	July 14	170.18
Mar. 12	170.30	Aug. 26	170.44
May 5	170.10	Sept. 30	170.74



CASCADE COUNTY

SITE IDENTIFICATION.--473031111185001. Local number 20N03E11ABAD01.

LOCATION.--Lat 47°30'30", long 111°18'50" (NAD 27), Hydrologic Unit 10030102. Owner: R. Volk.

HYDROGEOLOGIC UNIT.--Mississippian Madison Group.

WELL CHARACTERISTICS.--Drilled in October 1959, casing diameter 8 in. to depth of 206 ft and 6 in. to depth of 369 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Dec. 19, 2001 to current year.

DATUM.--Elevation of land surface is 3,320 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.80 ft above land-surface datum. Reference point established June 25, 2003: top of steel rod 10 ft north northeast of well casing, 2.16 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

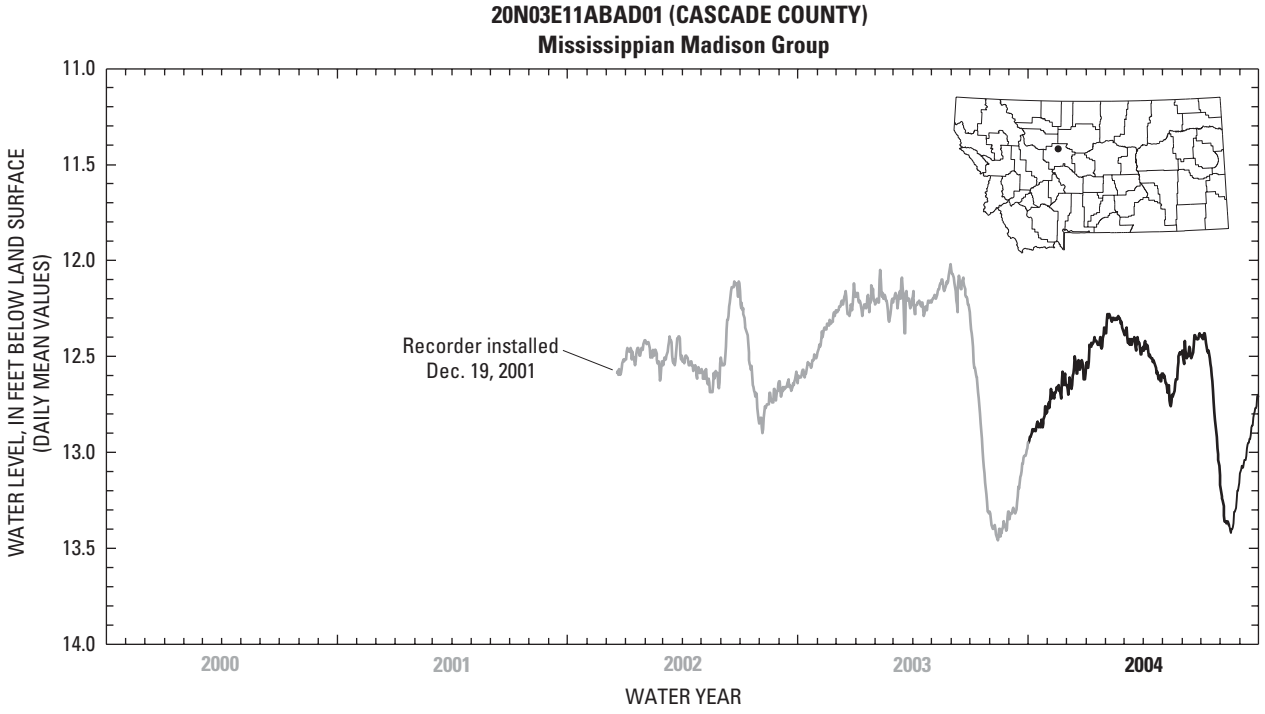
PERIOD OF RECORD.--December 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.00 ft, Mar. 15, 2003 (from recorder); lowest, 13.46 ft, at various times Aug. 13-15, 2003 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 12.26 ft, Feb. 4 (from recorder); lowest, 13.43 ft, Aug. 17 and 18 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 8	12.88	June 15	12.45
Feb. 3	12.27	Aug. 16	13.39
Apr. 20	12.51		



CASCADE COUNTY

SITE IDENTIFICATION.--472203111112602. Local number 19N04E26CACC02.

LOCATION.--Lat 47°22'03", long 111°11'26" (NAD 27), Hydrologic Unit 10030102. Owner: E. Chartier.

HYDROGEOLOGIC UNIT.--Lower Cretaceous Kootenai Formation.

WELL CHARACTERISTICS.--Drilled in December 1992, casing diameter 4 in., depth 198 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Dec. 16, 1998 to current year (Montana Bureau of Mines and Geology operated site from May 1987 to October 1998).

DATUM.--Elevation of land surface is 3,817 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.10 ft above land-surface datum. Reference point established Apr. 26, 1999: top of steel rod near well casing, elevation 3,817.19 ft.

REMARKS.--All water levels reported below land-surface datum.

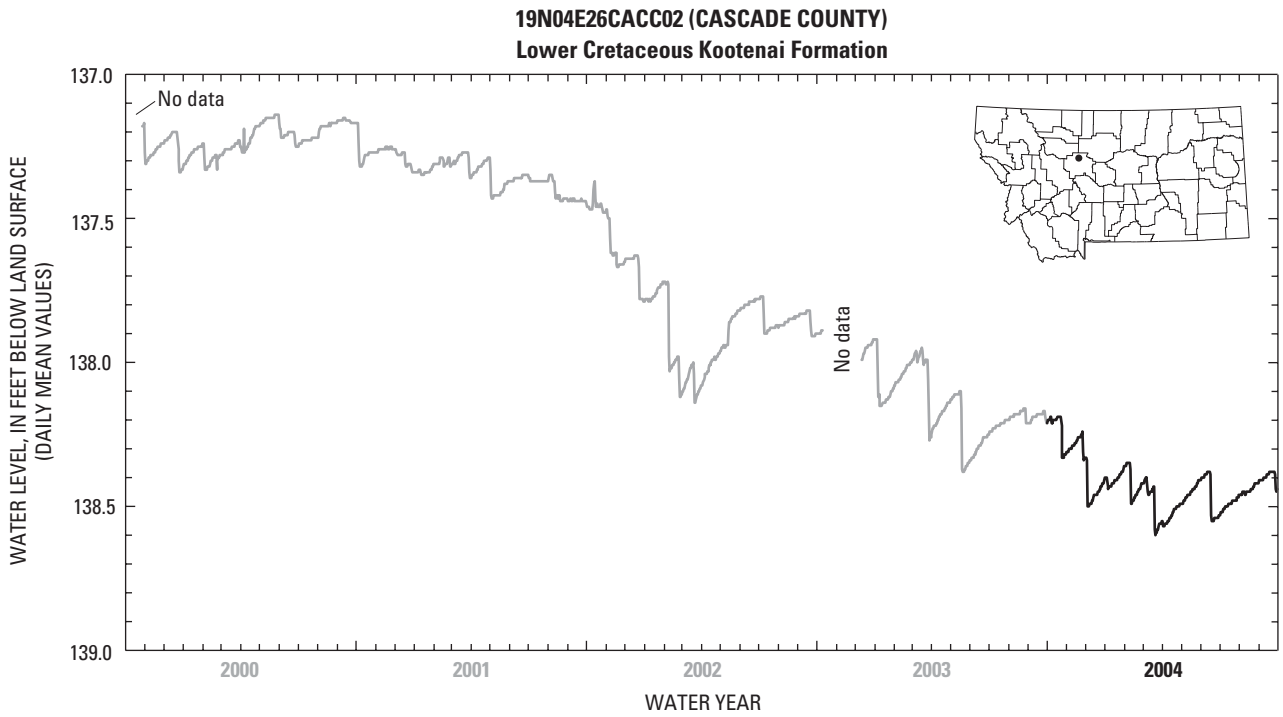
PERIOD OF RECORD.--August 1984 to May 1987 and December 1998 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 137.03 ft, at various times Apr. 8-13, 1999 (from recorder); lowest, 138.60 ft, Mar. 20 and 22, 2004 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 138.19 ft, Oct. 5-24 (from recorder); lowest, 138.60 ft, Mar. 20 and 22 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 8	138.21	June 15	138.40
Feb. 3	138.37	Aug. 17	138.46
Apr. 20	138.50		



GALLATIN COUNTY

SITE IDENTIFICATION.--454809111095401. Local number 01N04E25DCDD01.

LOCATION.--Lat 45°48'09", long 111°09'54" (NAD 27), Hydrologic Unit 10020008. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in August 1951, casing diameter 6 in. to depth of 400 ft. Well filled with gravel to within 101 ft of land surface.

INSTRUMENTATION.--Graphic recorder from May 1954 to August 1977. Digital water-level recorder set to record every hour from May 1991 to current year.

DATUM.--Elevation of land surface is 4,385 ft (NGVD 29) (from topographic map). Measuring point: top of casing 1.60 ft above land-surface datum. Reference point established Sept. 17, 2003: top of steel rod, 2 ft southwest of well near east fence post, 1.05 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

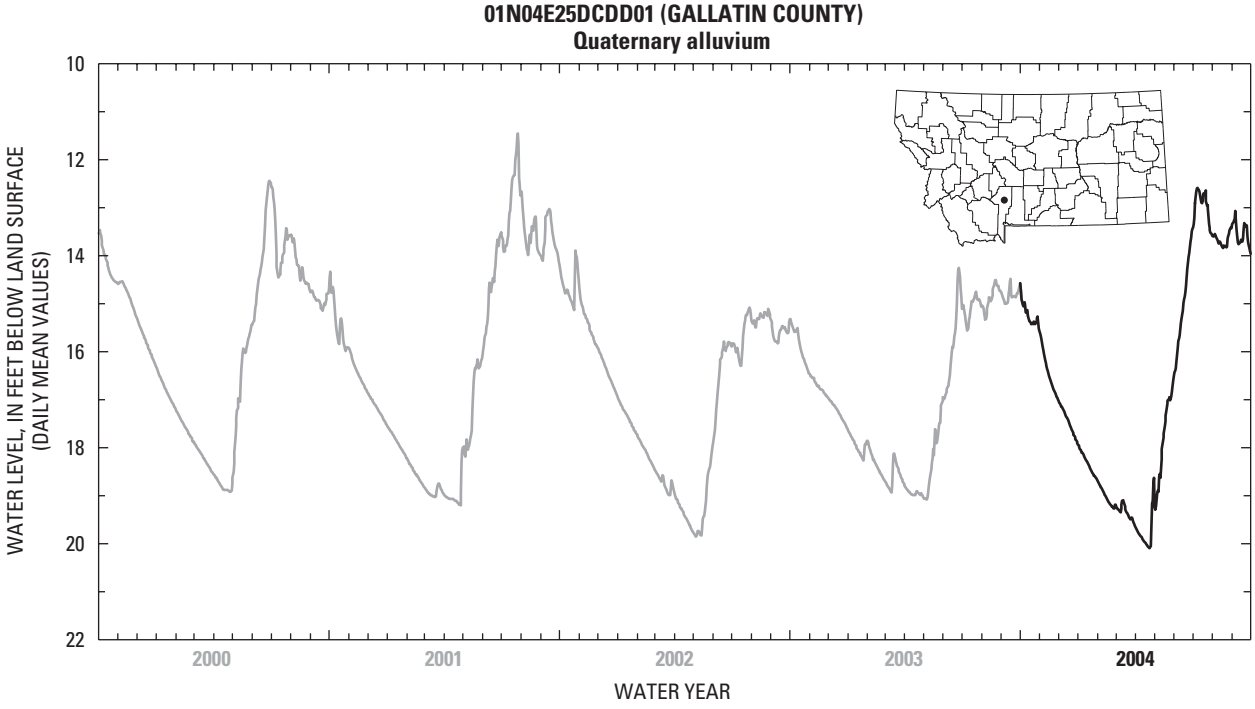
PERIOD OF RECORD.--1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 5.91 ft, Aug. 13, 1968 (from recorder); lowest, 20.10 ft, Apr. 23-25, 2004 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 12.55 ft, July 8 (from recorder); lowest, 20.10 ft, Apr. 23-25 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 15	15.34	May 19	17.30
Dec. 11	17.30	June 3	16.34
Jan. 16	18.27	July 6	12.64
Apr. 7	18.92		



GARFIELD COUNTY

SITE IDENTIFICATION.--470709106061401. Local number 16N44E25BBAC01.

LOCATION.--Lat 47°07'09", long 106°06'14" (NAD 27), Hydrologic Unit 10040104. Owner: Burlington Northern Santa Fe Railroad.

HYDROGEOLOGIC UNIT.--Paleocene Tongue River Member of Fort Union Formation.

WELL CHARACTERISTICS.--Drilled in October 1980, casing diameter 4 in., depth 103 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 4 hours from Apr. 13, 1998 to current year.

DATUM.--Elevation of land surface is 2,645 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.10 ft above land-surface datum. Reference point established Oct. 12, 1999: top of steel rod near casing, 2.99 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

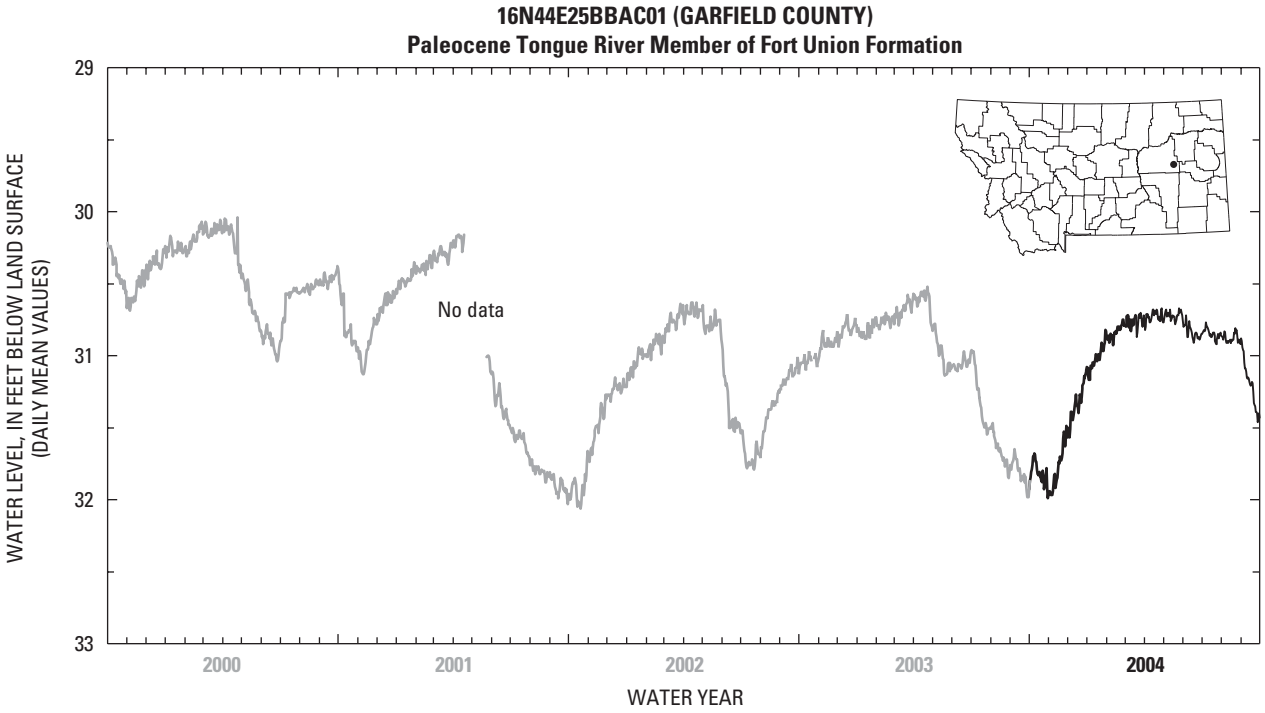
PERIOD OF RECORD.--Measured annually from 1984 to 1992 and recorded every 4 hours from Apr. 13, 1998 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 29.73 ft, Apr. 13, 1999 (from recorder); lowest, 32.08 ft, Oct. 20, 2001 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 30.61 ft, Apr. 28 (from recorder); lowest, 32.00 ft, Oct. 31 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL
Oct. 22	31.87
May 18	30.80



LAKE COUNTY

SITE IDENTIFICATION.--470946114013201. Local number 16N19W08ACBD01.

LOCATION.--Lat 47°09'46", long 114°01'32" (NAD 27), Hydrologic Unit 17010212. Owner: Makespeace.

HYDROGEOLOGIC UNIT.--Pleistocene alluvium.

WELL CHARACTERISTICS.--Drilled in August 1988, casing diameter 6 in. to depth of 322 ft and 5 in. from 322 ft to 398 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from Sept. 13, 1990 to current year.

DATUM.--Elevation of land surface is 3,300 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.50 ft above land-surface datum. Reference point established July 14, 2003: top of steel rod 1.0 ft southeast of well casing, 1.12 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

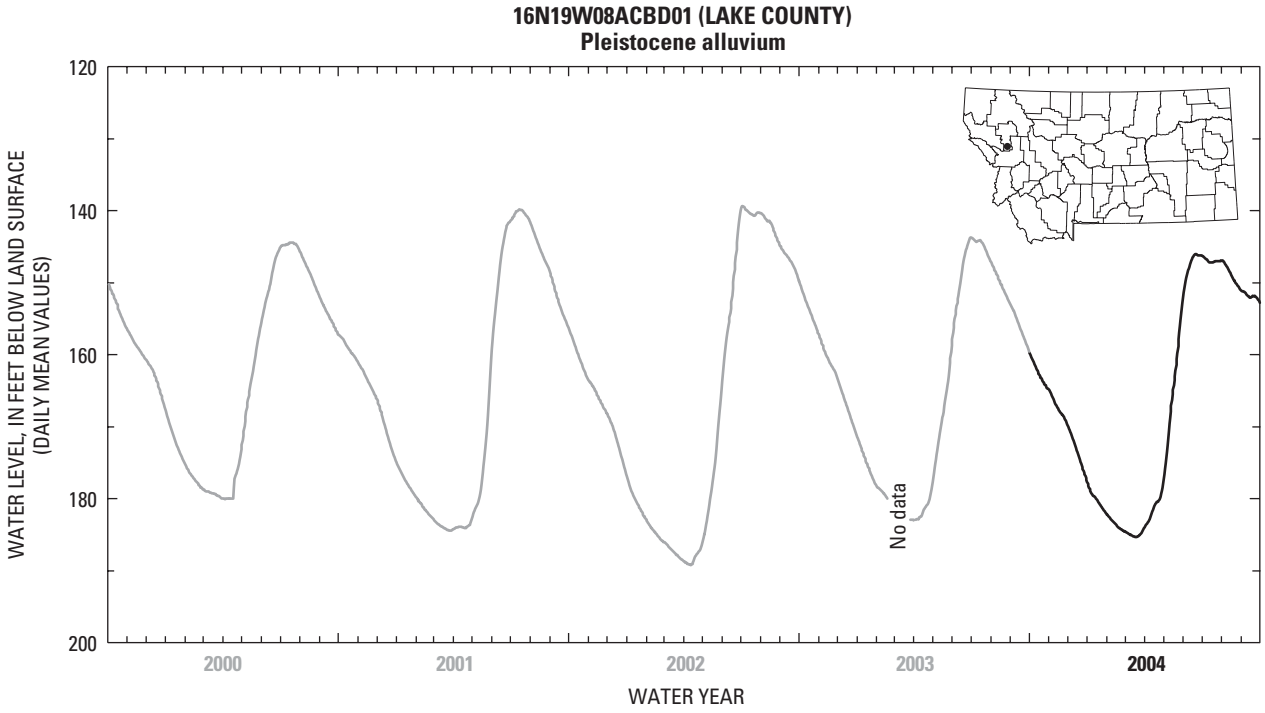
PERIOD OF RECORD.--Annually from 1988 to 1990 and recorded every hour from Sept. 13, 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 137.92 ft, July 14, 1993 (from recorder); lowest, 189.22 ft, Apr. 11 and 12, 2002 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 145.95 ft, June 21 (from recorder); lowest, 185.37 ft, Mar. 18-19 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 19	173.26	Apr. 21	180.37
Feb. 11	183.20	Aug. 26	150.36



MC CONE COUNTY

SITE IDENTIFICATION.--480034105195401. Local number 26N49E13ACAB01.

LOCATION.--Lat 48°00'34", long 105°19'54" (NAD 27), Hydrologic Unit 10060002. Owner: U.S. Geological Survey and Bureau of Land Management.

HYDROGEOLOGIC UNIT.--Upper Cretaceous Hell Creek Formation and Fox Hills Sandstone.

WELL CHARACTERISTICS.--Drilled in August 1981, casing diameter 4 in., depth 180 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every 6 hours from April 1998 to Aug. 3, 1999. Electronic water-level recorder set to record every 4 hours from Aug. 3, 1999 to current year.

DATUM.--Elevation of land surface is 2,040 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.60 ft above land-surface datum. Reference point established May 11, 1999: top of steel rod near well casing, 0.15 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

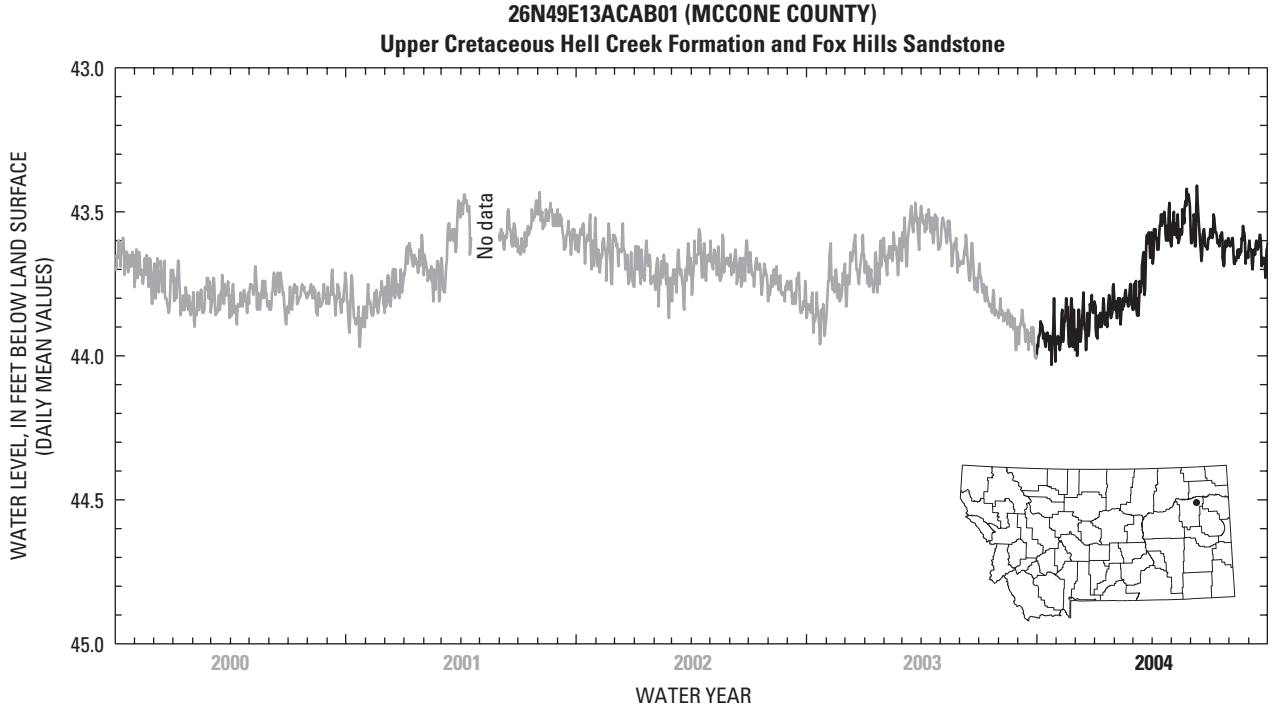
PERIOD OF RECORD.--Measured annually from 1982 to 1992, recorded every 6 hours from Apr. 14, 1998 to Aug. 3, 1999 and recorded every 4 hours from Aug. 3, 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 42.37 ft, Aug. 28, 1992 (measured); lowest, 44.12 ft, Oct. 31, 2003 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 43.39 ft, June 11 (from recorder); lowest, 44.12 ft, Oct. 31 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL
Oct. 31	44.00
May 18	43.56



POWDER RIVER COUNTY

SITE IDENTIFICATION.--453107106110601. Local number 04S45E04BDDB01.

LOCATION.--Lat 45°31'07", long 106°11'06" (NAD 27), Hydrologic Unit 10090102. Owner: U.S. Geological Survey.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in December 1979, casing diameter 4 in., depth 68 ft.

INSTRUMENTATION.--Graphical water-level recorder from April 1980 to October 1982. Digital water-level recorder set to record every 12 hours from October 1982 to November 1996, and reset to record every 4 hours from November 1996 to current year.

DATUM.--Elevation of land surface is 3,020 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.70 ft above land-surface datum. Reference point established Sept. 16, 2003: top of steel rod 21 ft northeast of well casing, 1.66 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

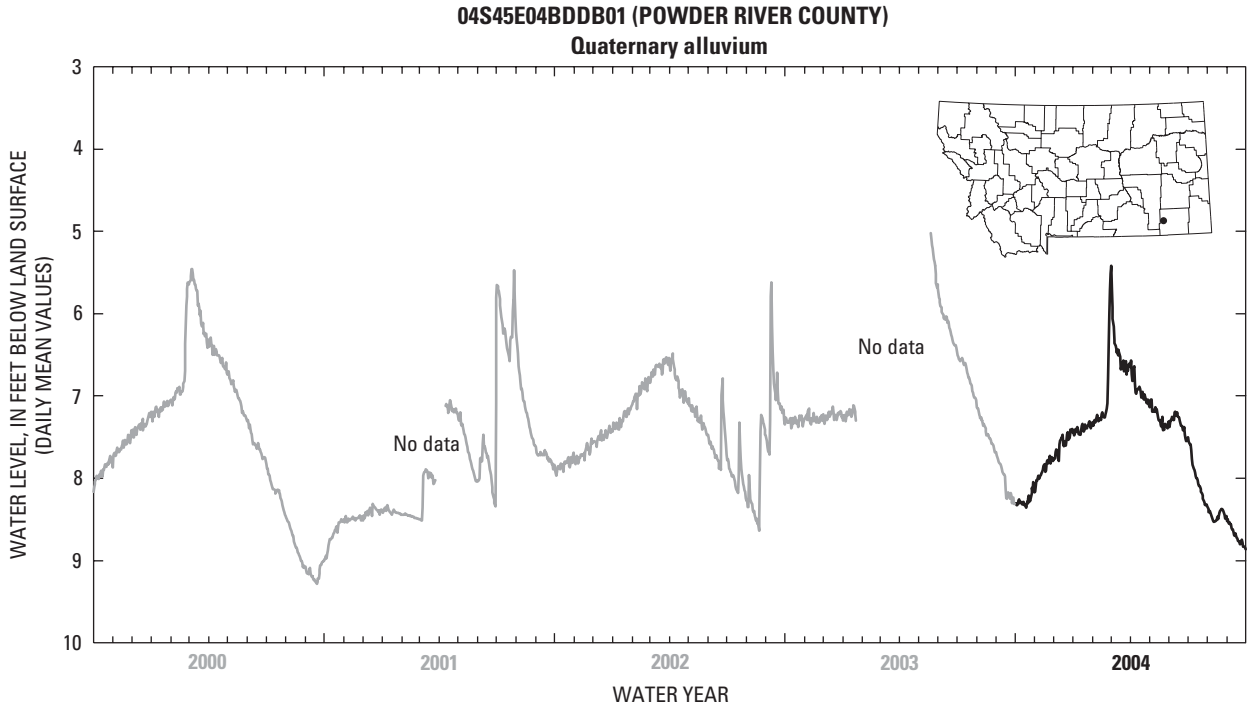
PERIOD OF RECORD.--Measured intermittently from December 1979 to April 1980 and recorded April 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.67 ft, Apr. 11, 1997 (from recorder); lowest, 11.45 ft, Oct. 5, 1992 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 5.27 ft, Mar. 1 (from recorder); lowest, 8.87 ft, Sept. 29 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22	8.16	Mar. 23	6.57
Dec. 10	7.51	July 6	7.78



POWELL COUNTY

SITE IDENTIFICATION.--470049113035401. Local number 15N12W36BCDD01.

LOCATION.--Lat 47°00'49", long 113°03'54" (NAD 27), Hydrologic Unit 17010203. Owner: Montana Department of Transportation.

HYDROGEOLOGIC UNIT.--Cenozoic rocks.

WELL CHARACTERISTICS.--Drilled in September 1964, casing diameter 6 in., depth 206 ft.

INSTRUMENTATION.--Digital water-level recorder installed April 1991 and set to record every hour from April 1991 to current year.

DATUM.--Elevation of land surface is 4,278 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.0 ft above land-surface datum. Reference point established July 15, 2003: top of steel rod 40 ft northwest of well by fence corner, 3.14 ft above measuring point.

REMARKS.--All water levels reported below land-surface datum.

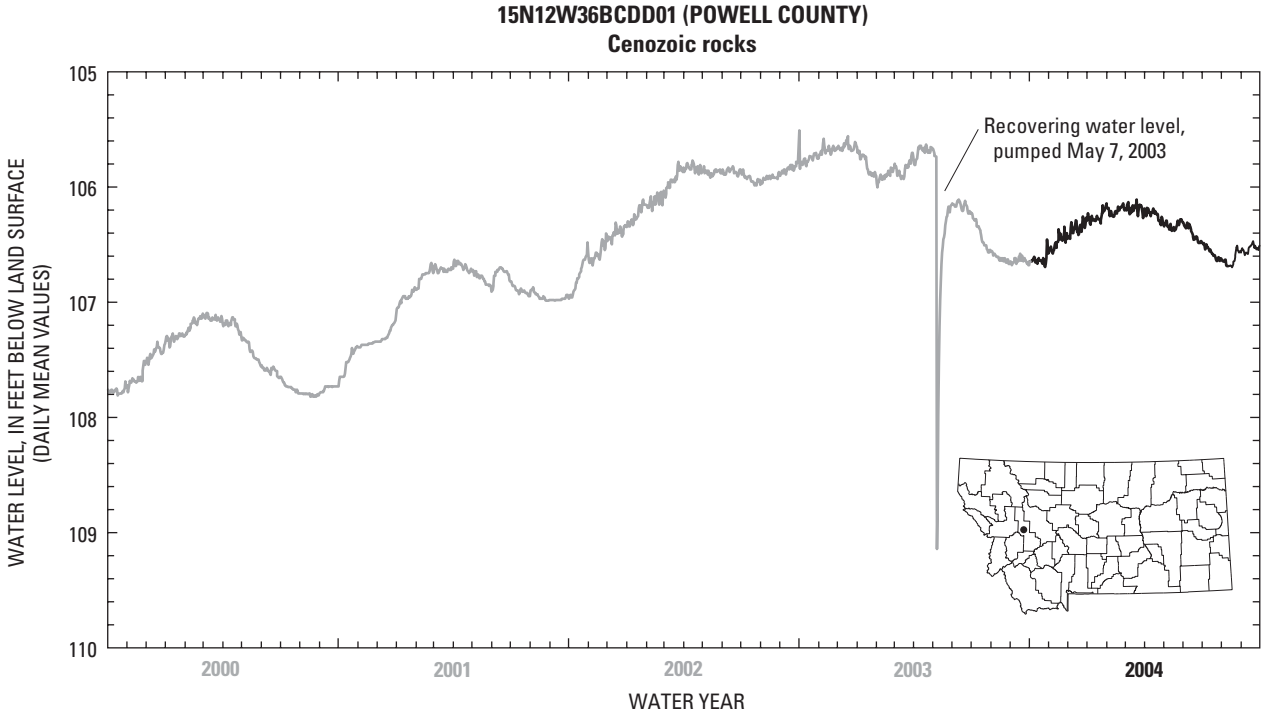
PERIOD OF RECORD.--Measured periodically from 1975 to 1991 and continuously recorded every hour from April 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 95.90 ft, Dec. 12, 1991 (measured); lowest, 126.72 ft, Oct. 11, 1984 (measured).

EXTREMES FOR CURRENT YEAR.--Highest water level, 106.07, Mar. 18 (from recorder); lowest, 106.72 ft, Oct. 24 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 1	106.67	June 30	106.51
Apr. 1	106.20	Sept. 30	106.52



RAVALLI COUNTY

SITE IDENTIFICATION.--463750114033001. Local number 10N20W13BBA 01.

LOCATION.--Lat 46°37'50", long 114°03'30" (NAD 27), Hydrologic Unit 17010205. Owner: Bonneville Power Administration.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in September 1959, casing diameter 6 in., depth 50 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from April 1991 to current year.

DATUM.--Elevation of land surface is 3,204 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 2.00 ft above land-surface datum. Reference point established July 14, 2003: top of steel rod 45 ft east of well in southwest corner of concrete pad, 0.58 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

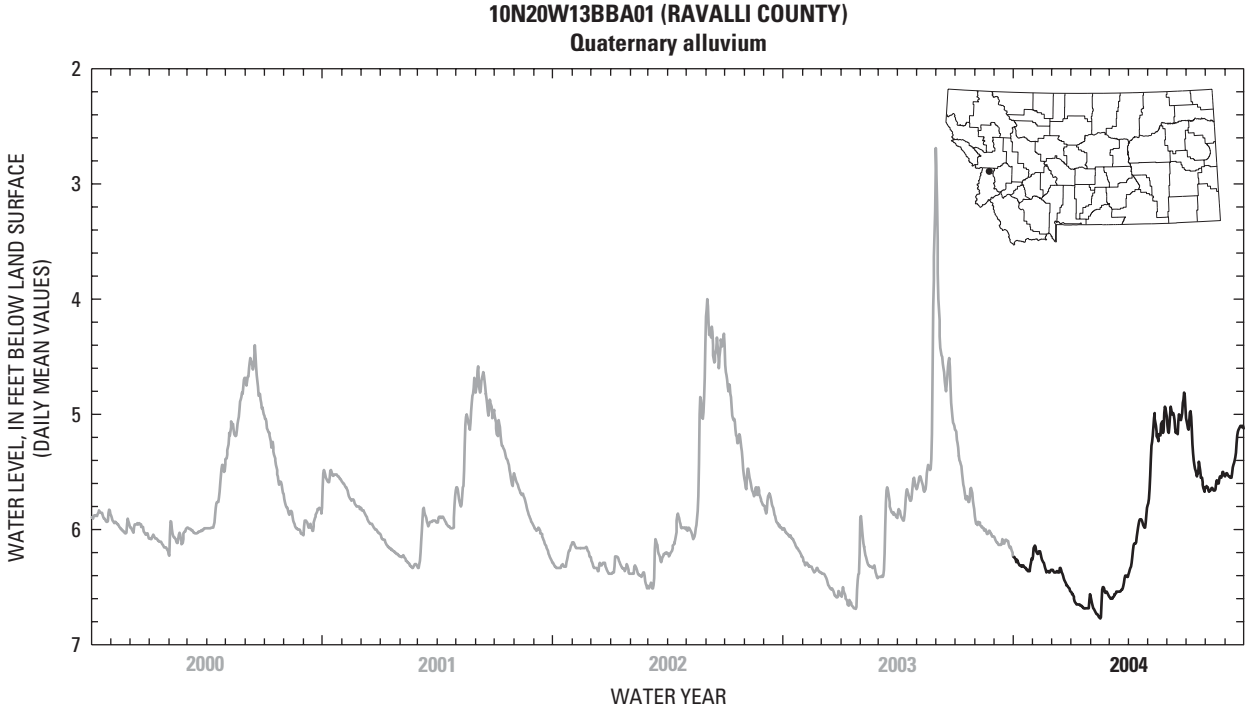
PERIOD OF RECORD.--Measured periodically from 1959 to 1982 and recorded every hour from April 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.48 ft, June 15, 1959 (measured); lowest, 7.21 ft, Sept. 21, 1977 (measured).

EXTREMES FOR CURRENT YEAR.--Highest water level, 4.79 ft, June 28 (from recorder); lowest, 6.77 ft, Feb. 15-17 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 29	6.30	Apr. 21	5.89
Dec. 16	6.35	May 5	5.55
Feb. 2	6.66	June 23	5.06
Mar. 15	6.52	Sept. 8	5.50



RAVALLI COUNTY

SITE IDENTIFICATION.--461518114090802. Local number 06N20W19CCCC02.

LOCATION.--Lat 46°15'18", long 114°09'08" (NAD 27), Hydrologic Unit 17010205. Owner: Bonneville Power Administration.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in September 1970, casing diameter 6 in., depth 40 ft.

INSTRUMENTATION.--Graphic recorder from September 1970 to January 1985. Digital water-level recorder set to record every hour from January 1985 to current year.

DATUM.--Elevation of land surface is 3,558.3 ft (NGVD 29) (from levels taken in September 1970). Measuring point: top of casing, 1.30 ft above land-surface datum. Reference point established July 14, 2003: north plug of 4 in. round ring on fire hydrant, 0.57 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

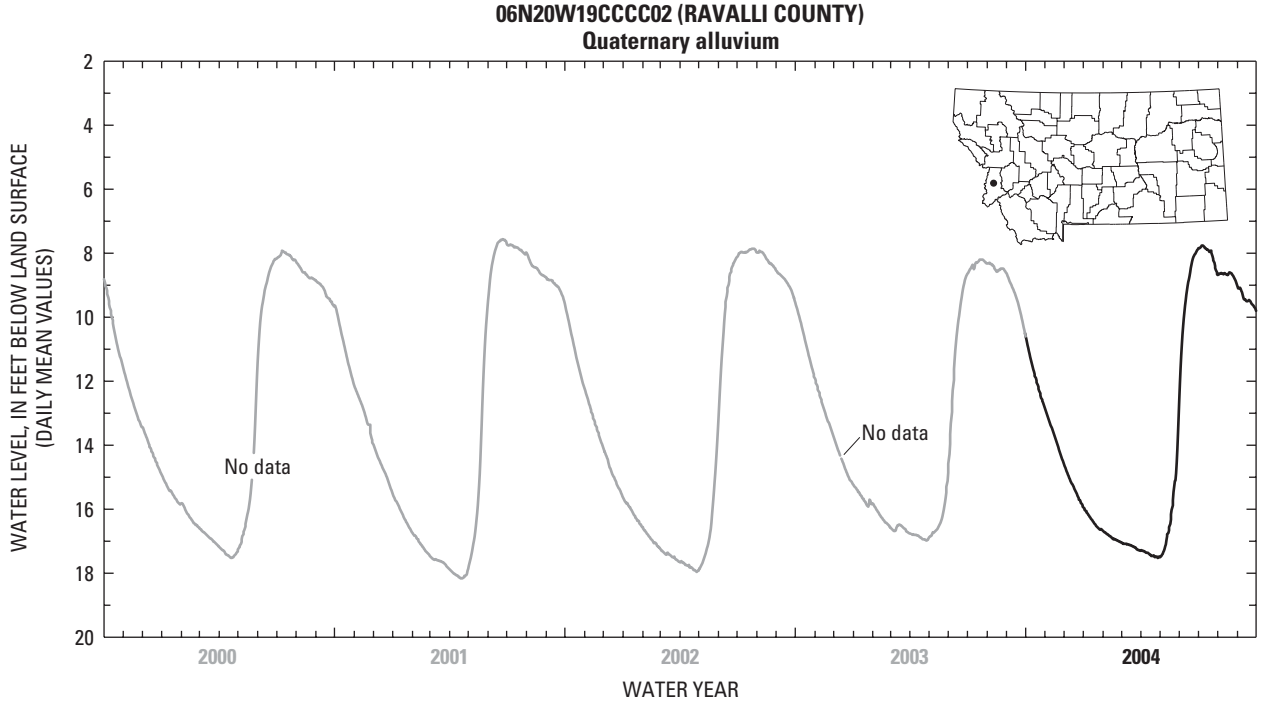
PERIOD OF RECORD.--September 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.48 ft, Sept. 2, 1979 (from recorder); lowest, 18.32 ft, May 1, 1985 (measured).

EXTREMES FOR CURRENT YEAR.--Highest water level, 7.74 ft, July 7 (from recorder); lowest, 17.53 ft, Apr. 27 and 28 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 27	12.62	Apr. 21	17.49
Dec. 16	15.33	May 5	17.44
Feb. 3	16.75	June 23	8.16
Mar. 16	17.17	Sept. 8	9.26



ROSEBUD COUNTY

SITE IDENTIFICATION.--451746106301101. Local number 06S43E19DDBA02.

LOCATION.--Lat 45°17'46", long 106°30'11" (NAD 27), Hydrologic Unit 10090101. Owner: U.S. Geological Survey and Art Hayes.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in October 1986, casing diameter 4 in., depth 67 ft.

INSTRUMENTATION.--Digital water-level recorder from April 1989 to current year.

DATUM.--Elevation of land surface is 3,170 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.40 ft above land-surface datum. Reference point established Sept. 16, 2003: top of steel rod 1.0 ft south of southwest corner of recorder box, 1.13 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

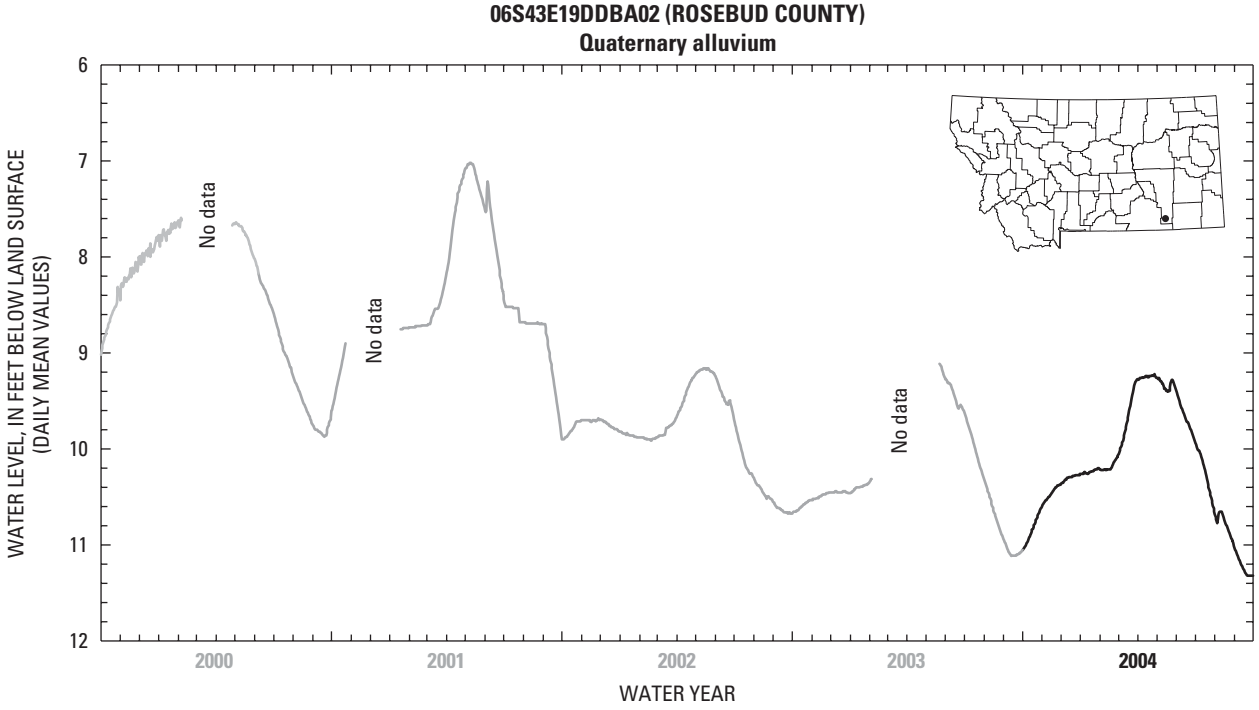
PERIOD OF RECORD.--April 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.47 ft, Apr. 7, 1987 (measured); lowest, 11.40 ft, Jan. 11, 1995 (measured).

EXTREMES FOR CURRENT YEAR.--Highest water level, 9.21 ft, Apr. 27 (from recorder); lowest, 11.32 ft, Sept. 20-30 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 3	10.53	Feb. 5	10.22
Nov. 14	10.47	Mar. 23	9.48
Dec. 10	10.29	July 6	10.04



SANDERS COUNTY

SITE IDENTIFICATION.--474251114385201. Local number 23N24W34ADAA01.

LOCATION.--Lat 47°42'51", long 114°38'52" (NAD 27), Hydrologic Unit 17010212. Owner: Bureau of Indian Affairs.

HYDROGEOLOGIC UNIT.--Quaternary alluvium.

WELL CHARACTERISTICS.--Drilled in February 1941, casing diameter 20 in. from 1.00 ft above land surface to 300 ft below land surface, and 18 in. from 300 ft to 377 ft.

INSTRUMENTATION.--Graphical water-level recorder from January 1971 to January 1985. Digital water-level recorder set to record every hour from January 1985 to current year.

DATUM.--Elevation of land surface is 2,878.57 ft (NGVD 29). Measuring point: top of casing, 1.00 ft above land-surface datum. Reference point established Oct. 29, 2003: rebar 3 ft northeast of well shelter outside of northeast corner of shelter fence, 1.79 ft below measuring point.

REMARKS.--Water levels affected by pumpage. Well located near Lonepine. All water levels reported below land-surface datum. No data from Feb. 1 through Mar. 9. No data Sept. 13-20 while Montana Bureau of Mines and Geology collected water-quality samples.

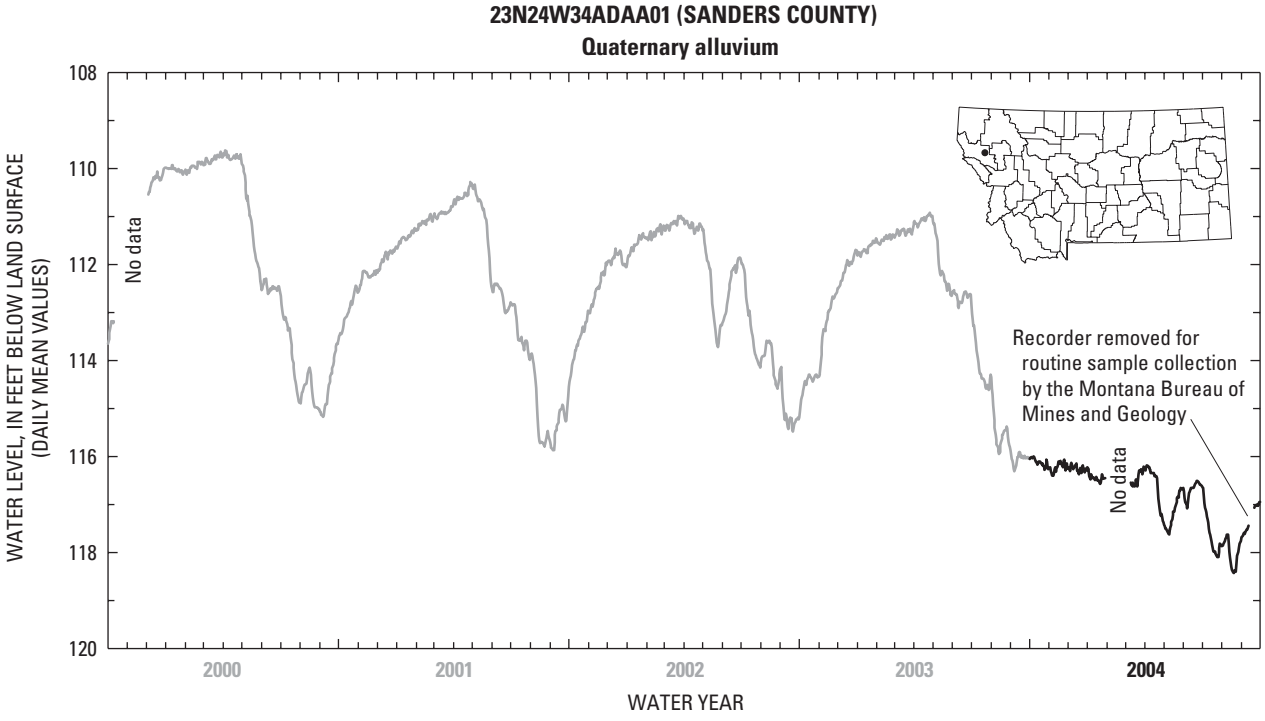
PERIOD OF RECORD.--March to May 1943, October 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 102.43 ft, Mar. 20, 1981 (from recorder); lowest, 119.96 ft, Sept. 6, 1995 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 115.94 ft, Oct. 28 (from recorder); lowest, 118.45 ft, Aug. 20 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 6	116.00	May 4	117.53
Dec. 18	116.36	July 19	117.98
Mar. 9	116.40	Sept. 13	117.45
Apr. 6	116.22	Sept. 20	117.00



SHERIDAN COUNTY

SITE IDENTIFICATION.--483650104084001. Local number 33N58E17ADDD01.

LOCATION.--Lat 48°36'50", long 104°08'40" (NAD 27), Hydrologic Unit 10060006. Owner: Vern Guenther.

HYDROGEOLOGIC UNIT.--Pleistocene outwash.

WELL CHARACTERISTICS.--Drilled in 1984, casing diameter 4 in., depth 130 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from April to Oct. 18 1985, every 12 hours from Oct. 19, 1985 to Apr. 7, 1993, and every 4 hours from Apr. 8, 1993 to current year.

DATUM.--Elevation of land surface is 1,992 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 2.10 ft above land-surface datum. Reference point established Sept. 15, 2003: top of steel rod 3 ft north of well, 0.77 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

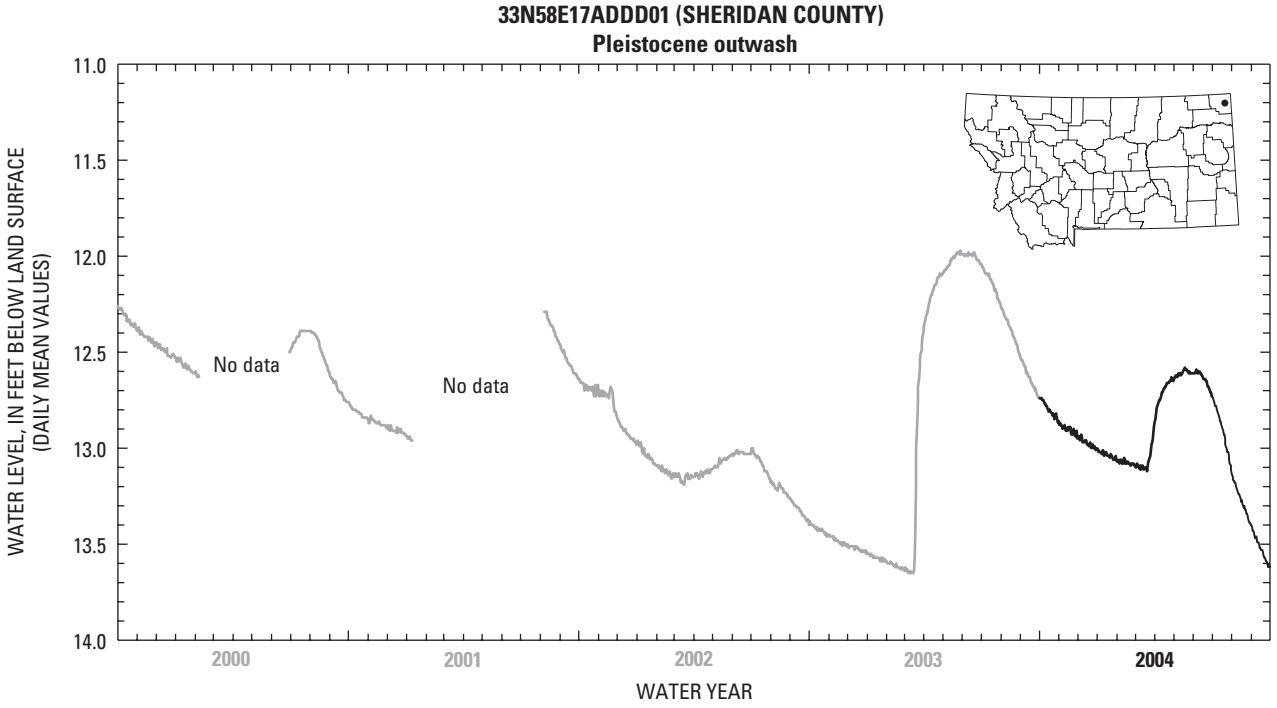
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.73 ft, June 19-26, 1999 (from recorder); lowest, 15.51 ft, Aug. 20-23, 1992 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 12.56 ft, May 19 (from recorder); lowest, 13.63 ft, Sept. 30 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 28	12.81	May 19	12.59
Mar. 4	13.08	Aug. 3	13.17



SHERIDAN COUNTY

SITE IDENTIFICATION.--483318104105402. Local number 32N58E04DBBD02.

LOCATION.--Lat 48°33'18", long 104°10'54" (NAD 27), Hydrologic Unit 10060006. Owner: U.S. Fish and Wildlife Service.

HYDROGEOLOGIC UNIT.--Pleistocene outwash.

WELL CHARACTERISTICS.--Drilled in July 1984, casing diameter 4 in., depth 143 ft.

INSTRUMENTATION.--Graphical water-level recorder from August 1984 through May 1985. Digital water-level recorder set to record every 24 hours from May 1985 to April 1996. Digital recorder set to record every 4 hours from April 1996 to current year.

DATUM.--Elevation of land surface is 1,977 ft (NGVD 1929) (from topographic map). Measuring point: top of recorder shelf, 2.20 ft above land-surface datum. From August 1984 to April 1994, measuring point was top of PVC casing, 1.50 ft above land-surface datum. Reference point established Sept. 15, 2003: top of steel rod 4 ft north of northeast fence post, 1.37 ft below measuring point.

REMARKS.--All water levels reported below land-surface datum.

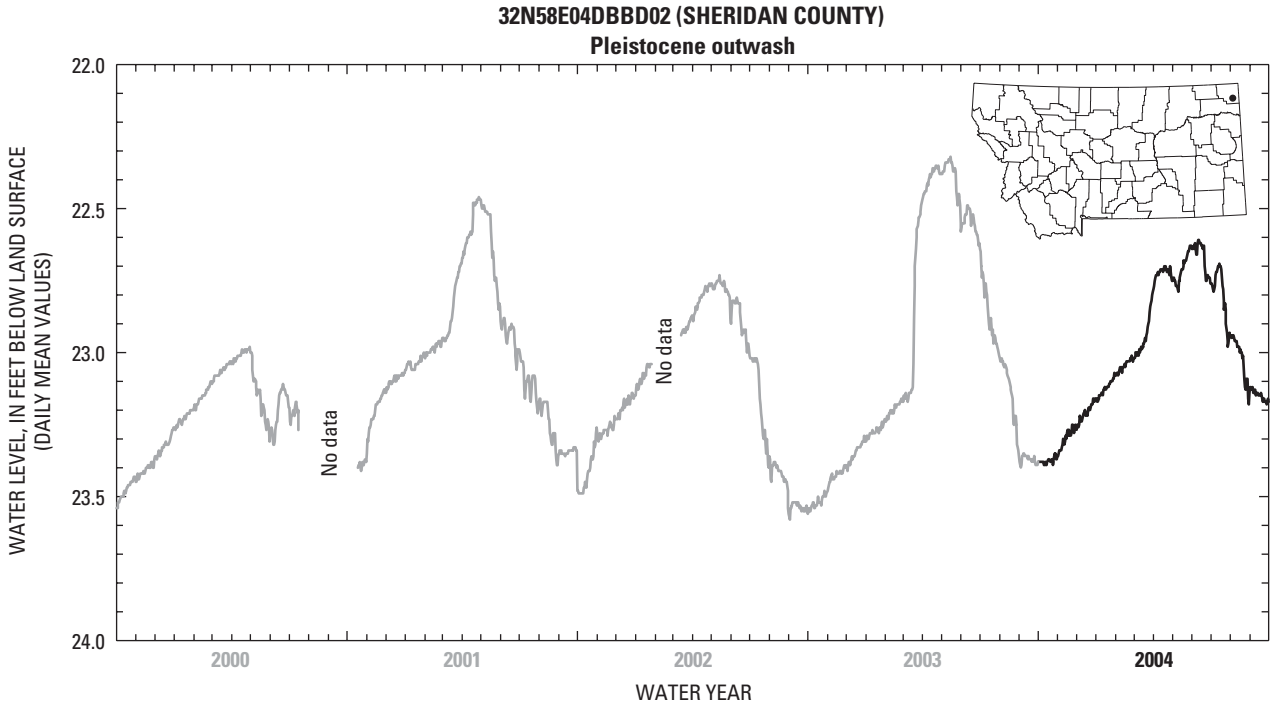
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.32 ft, at various times May 13-16, 2003 (from recorder); lowest, 25.90 ft, Aug. 18 and 19, 1992 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 22.61 ft, June 10-20 (from recorder); lowest, 23.39 ft, Oct. 1-25 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 28	23.35	May 19	22.69
Mar. 4	23.00	July 26	22.92



TETON COUNTY

SITE IDENTIFICATION.--474005111583803. Local number 22N03W15BAAD03.

LOCATION.--Lat 47°40'05", long 111°58'38" (NAD 27), Hydrologic Unit 10030104. Owner: Marvin Klinker.

HYDROGEOLOGIC UNIT.--Pleistocene terrace deposits.

WELL CHARACTERISTICS.--Drilled in 1991, casing diameter 4 in., depth 47 ft.

INSTRUMENTATION.--Digital water-level recorder set to record every hour from November 1991 to current year.

DATUM.--Elevation of land surface is 5,240 ft (NGVD 29) (from topographic map). Measuring point: top of casing, 1.90 ft above land-surface datum from November 1991 to Mar. 12, 2001 and 1.80 ft above land-surface datum from Mar. 12, 2001 to current year. Reference point established June 14, 2003: top of steel rod at base of large stump 36 ft northwest of well, 1.24 ft below measuring point.

REMARKS.--Water levels affected by irrigation. All water levels reported below land-surface datum.

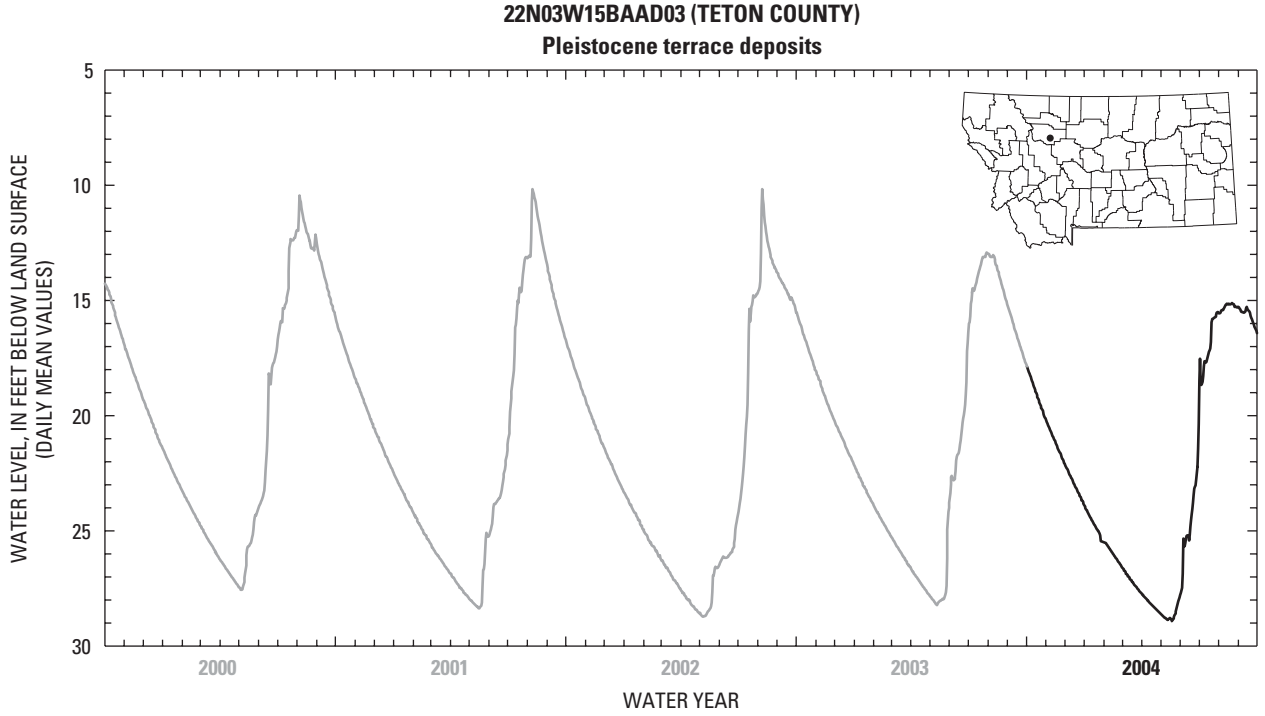
PERIOD OF RECORD.--November 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.69 ft, Aug. 8, 2002 (from recorder); lowest, 28.92 ft, May 19, 2004 (from recorder).

EXTREMES FOR CURRENT YEAR.--Highest water level, 15.03 ft, Aug. 17 (from recorder); lowest, 28.92 ft, May 19 (from recorder).

MEASURED WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM,
WATER YEAR OCTOBER 2003 THROUGH SEPTEMBER 2004

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 8	18.30	June 15	25.58
Feb. 3	25.45	Aug. 17	15.15
Apr. 20	28.29		



PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004

[Local number--composed of township, range, section, position within a section, and a sequence number. Depth of well--in feet below land surface. Water level--in feet below or above (+) land surface. --, no data]

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		BEAVERHEAD COUNTY		
08S09W01CCCC01	47	Tertiary sediments	10-13-03	37.73
			12-16-03	37.69
			02-04-04	37.50
			03-05-04	37.53
			04-15-04	37.46
			05-05-04	38.43
			08-26-04	37.77
			09-30-04	38.28
08S08W31CCAA01	217	Tertiary sediments	12-16-03	170.89
			02-04-04	170.79
			03-12-04	170.30
			05-05-04	170.10
			05-21-04	170.13
			07-14-04	170.18
			08-26-04	170.44
			09-30-04	170.74
		CASCADE COUNTY		
20N03E11ABAD01	369	Mississippian Madison Group	10-08-03	12.88
			02-03-04	12.27
			04-20-04	12.51
			06-15-04	12.45
			08-16-04	13.39
19N04E26CACC02	198	Lower Cretaceous Kootenai Formation	10-08-03	138.21
			02-03-04	138.37
			04-20-04	138.50
			06-15-04	138.40
			08-17-04	138.46
		GALLATIN COUNTY		
01N04E25DCDD01	101	Quaternary alluvium	10-15-03	15.34
			12-11-03	17.30
			01-16-04	18.27
			04-07-04	18.92
			05-19-04	17.30
			06-03-04	16.34
			07-06-04	12.64
		GARFIELD COUNTY		
16N44E25BBAC01	103	Paleocene Tongue River Member of Fort Union Formation	10-22-03	31.87
			05-18-04	30.80
		JEFFERSON COUNTY		
09N03W14DACC01	145	Upper Cambrian Hasmark Formation	10-27-03	24.65
			11-25-03	25.65
			12-29-03	25.48
			02-02-04	27.18
			02-25-04	22.98
			03-29-04	25.59
			04-27-04	27.43
			05-25-04	21.35
			06-30-04	22.32
			07-29-04	22.26
09N03W17DBC 01	207	Upper Cretaceous Boulder batholith intrusives	10-27-03	37.28
			11-25-03	39.53
			12-29-03	37.64
			02-02-04	37.34
			02-25-04	37.68
			03-29-04	37.65
			04-27-04	37.25
			05-25-04	37.37
			06-30-04	37.59
			07-29-04	38.97
		LAKE COUNTY		
16N19W08ACBD01	398	Pleistocene alluvium	12-19-03	173.26
			02-11-04	183.20
			04-21-04	180.37
			08-26-04	150.36

PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004--CONTINUED

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		LEWIS AND CLARK COUNTY		
12N06W36BCDD01	70	Upper Cretaceous Marysville intrusives	10-27-03	20.49
			11-25-03	20.77
			12-29-03	21.50
			02-03-04	21.74
			02-26-04	21.73
			03-29-04	20.67
			04-27-04	17.78
			06-01-04	17.49
			06-29-04	17.75
			07-30-04	18.50
11N05W14DDDD01	500	Middle Proterozoic Helena Formation	10-27-03	32.09
			11-25-03	32.00
			12-29-03	32.24
			02-03-04	32.37
			02-25-04	32.47
			03-29-04	32.39
			04-27-04	32.06
			06-01-04	32.21
			06-29-04	32.13
			07-28-04	32.12
11N04W09ADAD01	250	Middle Proterozoic Spokane Formation	10-27-03	32.06
			11-25-03	32.42
			12-29-03	33.08
			02-03-04	34.13
			02-26-04	34.10
			03-30-04	34.17
			04-27-04	34.49
			06-01-04	34.91
			06-30-04	35.31
			07-30-04	35.71
11N04W12CDDD01	176	Middle Proterozoic Spokane Formation	10-27-03	151.15
			11-26-03	151.55
			12-30-03	145.03
			02-03-04	139.74
			02-26-04	139.07
			03-30-04	141.36
			04-27-04	145.82
			06-01-04	149.73
			06-30-04	151.76
			07-30-04	151.11
11N04W34DCBA01	125	Upper Cretaceous Scratchgravel Hills intrusives	10-27-03	17.48
			11-04-03	17.57
			11-25-03	17.37
			12-18-03	17.38
			12-30-03	17.25
			02-02-04	17.82
			02-26-04	17.29
			03-30-04	17.35
			04-29-04	17.16
			06-01-04	17.08
			06-29-04	18.48
			07-29-04	20.03
11N03W05CCBC01	110	Middle Proterozoic Spokane Formation	04-27-04	65.38
			06-01-04	65.62
			06-30-04	66.32
			07-29-04	67.75
11N03W08BBBD01	208	Middle Proterozoic Spokane Formation	10-27-03	59.23
			11-26-03	58.91
			12-30-03	58.63
			02-03-04	58.27
			02-26-04	58.07
			03-30-04	57.87
			04-27-04	57.83
			06-01-04	58.79
			06-30-04	59.69
			07-30-04	60.84
11N03W11BBBA01	350	Middle Proterozoic Spokane Formation	10-27-03	165.24
			11-26-03	165.82
			12-29-03	164.56
			02-03-04	164.12
			02-26-04	163.31
			03-30-04	165.30

PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004--CONTINUED

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
11N03W11BBBA01 Continued	350	Middle Proterozoic Spokane Formation--Continued	04-27-04	165.60
			06-01-04	164.25
			06-29-04	170.84
			07-29-04	167.05
10N05W03ABDD01	140	Middle Cambrian Wolsey Shale	10-27-03	22.07
			11-25-03	21.60
			12-29-03	21.64
			02-03-04	22.20
			02-25-04	21.95
			03-29-04	21.75
			04-27-04	21.80
			06-01-04	22.94
			06-29-04	23.42
			07-30-04	24.22
10N05W09BDBC01	280	Upper Cretaceous Boulder batholith intrusives	10-27-03	43.55
			11-25-03	40.62
			12-29-03	50.26
			02-03-04	44.74
			02-25-04	48.71
			03-29-04	32.85
			04-27-04	26.04
			06-01-04	39.33
			07-28-04	57.95
10N05W25DBDA02	100	Upper Cretaceous Boulder batholith intrusives	10-27-03	77.20
			11-26-03	77.40
			12-29-03	77.57
			02-02-04	77.70
			02-25-04	77.68
			03-29-04	77.21
			04-29-04	77.41
			05-25-04	77.48
			06-29-04	77.66
			07-28-04	78.69
10N05W33CDCD01	135	Upper Cretaceous Boulder batholith intrusives	10-27-03	15.60
			11-26-03	15.88
			12-29-03	16.11
			02-02-04	16.44
			02-25-04	16.27
			03-29-04	14.41
			04-29-04	13.57
			05-25-04	13.72
			06-29-04	14.26
			07-28-04	15.28
10N04W02CBAA01	110	Upper Cretaceous Scratchgravel Hills intrusives	10-27-03	36.78
			11-25-03	36.14
			12-30-03	36.13
			01-30-04	36.13
			02-26-04	36.40
			03-30-04	36.70
			04-29-04	37.05
			05-26-04	36.59
			06-01-04	37.10
			06-29-04	36.80
			08-03-04	37.33
			09-08-04	38.82
10N04W03CDBA01	206	Upper Cretaceous Scratchgravel Hills intrusives	10-27-03	26.99
			11-25-03	27.04
			12-30-03	26.89
			02-02-04	24.77
			02-26-04	27.68
			03-30-04	27.59
			04-29-04	28.19
			06-01-04	28.37
			06-29-04	28.57
			07-29-04	31.71
10N04W08DCAC01	120	Middle Proterozoic Helena Formation	10-27-03	51.66
			11-26-03	50.58
			12-29-03	50.03
			02-02-04	49.17
			02-25-04	48.87
			03-29-04	47.98
			04-29-04	48.12
			06-01-04	52.06

PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004--CONTINUED

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		LEWIS AND CLARK COUNTY--Continued		
10N04W08DCAC01 Continued	120	Middle Proterozoic Helena Formation--Continued	06-29-04	56.03
			07-28-04	57.45
10N04W15BDAC01	260	Middle Proterozoic Spokane Formation	10-27-03	45.16
			11-26-03	43.76
			12-29-03	43.72
			02-02-04	42.11
			02-25-04	41.68
			03-29-04	41.26
			04-29-04	41.05
			06-01-04	42.50
			06-29-04	43.88
			07-28-04	46.11
10N04W23CADD01	130	Middle Proterozoic Helena Formation	10-27-03	61.95
			11-25-03	60.65
			12-29-03	61.38
			02-02-04	61.73
			02-25-04	61.90
			03-29-04	61.83
			04-27-04	61.82
			05-25-04	61.07
			06-29-04	61.75
			07-28-04	62.91
10N03W20CCAA01	100	Middle Proterozoic Helena Formation	10-27-03	38.12
			11-25-03	39.56
			12-29-03	40.34
			02-02-04	40.33
			02-25-04	41.50
			03-29-04	41.52
			04-27-04	40.86
			05-25-04	39.77
			06-30-04	38.83
			07-29-04	39.46
10N03W32BCBD01	140	Middle Proterozoic Helena Formation	10-27-03	40.83
			11-25-03	42.10
			12-29-03	43.55
			02-02-04	39.64
			02-25-04	42.66
			03-29-04	44.45
			04-27-04	44.22
			05-25-04	42.60
			06-29-04	41.04
			07-28-04	41.22
09N05W12CCDA01	260	Upper Cretaceous Boulder batholith intrusives	10-27-03	41.16
			11-26-03	33.58
			12-29-03	35.18
			02-02-04	40.70
			02-25-04	32.70
			03-29-04	33.56
			04-29-04	34.15
			05-25-04	31.41
			06-29-04	31.89
			07-28-04	40.51
09N04W11CCCB01	122	Upper Cretaceous Boulder batholith intrusives	10-27-03	26.18
			11-25-03	26.52
			12-29-03	26.95
			02-02-04	27.21
			02-25-04	26.70
			03-29-04	25.46
			04-27-04	23.60
			05-25-04	22.95
			06-29-04	20.85
			07-28-04	22.29
09N04W11CDBD01	124	Upper Cretaceous Boulder batholith intrusives	10-27-03	71.58
			11-25-03	74.25
			12-29-03	76.81
			02-02-04	77.22
			02-25-04	77.38
			03-29-04	77.55
			04-27-04	77.38
			05-25-04	77.63
			06-29-04	77.99
			07-28-04	78.66

PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004--CONTINUED

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		MC CONE COUNTY		
26N49E13ACAB01	180	Upper Cretaceous Hell Creek Formation and Fox Hills Sandstone	10-31-03	44.00
			05-18-04	43.56
		MINERAL COUNTY		
18N28W24DCBA01	199	Quaternary alluvium	11-18-03	+23.71
			03-03-04	+23.02
			05-27-04	+23.25
			07-29-04	+16.79
18N27W19CBBD01	58	Quaternary alluvium	11-18-03	12.46
			02-19-04	12.67
			05-27-04	8.70
			07-29-04	11.96
18N27W30ABBA01	192	Quaternary alluvium	11-18-03	146.48
			02-19-04	146.54
			05-27-04	141.60
			07-29-04	145.38
17N26W30DAAD01	318	Quaternary alluvium	11-18-03	192.18
			03-03-04	192.08
			05-27-04	189.88
			08-31-04	189.61
		POWDER RIVER COUNTY		
04S45E04BDDB01	68	Quaternary alluvium	10-22-03	8.16
			12-10-03	7.51
			03-23-04	6.57
			07-06-04	7.78
		POWELL COUNTY		
15N12W36BCDD01	206	Cenozoic rocks	10-01-03	106.67
			04-01-04	106.20
			06-30-04	106.51
			09-30-04	106.52
		RAVALLI COUNTY		
10N20W13BBA 01	50	Quaternary alluvium	10-29-03	6.30
			12-16-03	6.35
			02-02-04	6.66
			03-15-04	6.52
			04-21-04	5.89
			05-05-04	5.55
			06-23-04	5.06
			09-08-04	5.50
06N20W19CCCC02	40	Quaternary alluvium	10-27-03	12.62
			12-16-03	15.33
			02-03-04	16.75
			03-16-04	17.17
			04-21-04	17.49
			05-05-04	17.44
			06-23-04	8.16
			09-08-04	9.26
		ROSEBUD COUNTY		
06S43E19DDBA02	67	Quaternary alluvium	11-03-03	10.53
			11-14-03	10.47
			12-10-03	10.29
			02-05-04	10.22
			03-23-04	9.48
			07-06-04	10.04
		SANDERS COUNTY		
26N34W03BDAD01	400	Quaternary alluvium	11-12-03	242.30
			02-18-04	227.57
			05-20-04	223.60
			08-17-04	226.75
25N31W30DCCC01	282	Quaternary alluvium	11-12-03	223.33
			02-18-04	223.43
			05-20-04	224.20
			08-17-04	223.15
23N24W34ADAA01	377	Quaternary alluvium	10-06-03	116.00
			12-18-03	116.36
			03-09-04	116.40
			04-06-04	116.22
			05-04-04	117.53
			07-19-04	117.98
			09-13-04	117.45
			09-20-04	117.00

PERIODIC WATER LEVELS IN SELECTED OBSERVATION WELLS IN MONTANA, WATER YEAR 2004--CONTINUED

Local number	Depth of well	Hydrogeologic unit	Date of measurement	Water level
		SANDERS COUNTY--Continued		
22N29W32ACDD01	308	Quaternary alluvium	05-25-04	217.62
20N26W22CBBA01	50	Quaternary alluvium	11-12-03	18.38
			02-19-04	18.20
			05-25-04	17.58
			08-25-04	17.71
19N25W07CDDA01	--	Quaternary alluvium	11-12-03	+14.80
			05-25-04	+11.11
19N25W28BABB01	369	Middle Proterozoic Belt Supergroup	11-12-03	19.00
			02-19-04	20.51
			05-25-04	9.62
			08-25-04	18.95
		SHERIDAN COUNTY		
33N58E17ADDD01	130	Pleistocene outwash	10-28-03	12.81
			03-04-04	13.08
			05-19-04	12.59
			07-26-04	12.30
			08-03-04	13.17
32N58E04DBBD02	143	Pleistocene outwash	10-28-03	23.35
			03-04-04	23.00
			05-19-04	22.69
			07-26-04	22.92
		TETON COUNTY		
22N03W15BAAD03	47	Pleistocene terrace deposits	10-08-03	18.30
			02-03-04	25.45
			04-20-04	28.29
			06-15-04	25.58
			08-17-04	15.15

462905112035401 MCBEATH RESIDENCE NEAR CLANCY, MT (MT07)

(National trends network)

LOCATION.--Lat 46°29'05", long 112°03'54" (NAD 27), in NE¼NW¼NE¼ sec.2, T.8 N., R.4 W., Jefferson County, Hydrologic Unit 10030101, at National Forest boundary fence at private residence on Lump Gulch Road, 5.1 mi west of Clancy and 10 mi south of Helena.

PERIOD OF RECORD.--Water years 1981-1982, 1984 to current year. Prior to Oct. 1984, published as 462905112034001.

EQUIPMENT.--The sample collector is an Aerochem Metrics Model 301 precipitation collector. An automatic sensor detects occurrences of precipitation, activating a motor which removes a cover from the wetfall collection vessel. When precipitation ceases, the cycle is reversed. The sampling vessel is polyethylene and has a collection diameter of 28.6 cm and a capacity of 13 liters. Precipitation is measured using a Belfort Universal rain gage, series 5-780 with an event recorder. (The use of the brand name in this report is for identification purposes only and does not imply endorsement by the U.S. Geological Survey.) Snowfall precipitation is measured as a water equivalent.

REMARKS.--Missing precipitation data for Oct. 31-Nov. 4, Nov. 22-24, and Jan. 26-27 due to equipment problems resulting from freezing air temperatures.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	---	0.00	0.14	<0.01	0.20	0.56	0.00	0.00	0.15	0.00	0.00
2	0.00	---	0.08	0.15	0.00	0.03	0.03	0.00	<0.01	0.00	0.07	0.04
3	0.00	---	0.01	0.00	0.00	0.00	0.00	0.00	<0.01	0.24	0.30	0.00
4	0.00	---	0.00	e0.13	0.07	<0.01	0.00	<0.01	0.00	0.13	<0.01	0.00
5	0.00	0.00	0.00	e0.02	0.02	0.20	0.00	0.00	<0.01	0.04	0.04	0.00
6	0.00	0.00	0.03	e0.00	0.00	0.00	0.00	0.00	<0.01	0.00	<0.01	0.00
7	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.00
8	<0.01	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.21	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.01	0.25	0.00	0.01	0.00	0.00	0.00
10	0.01	0.00	0.11	0.00	0.04	0.13	0.00	<0.01	0.60	<0.01	0.00	0.00
11	0.00	0.22	0.03	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00
12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
13	0.00	0.00	0.04	0.00	0.00	0.10	<0.01	0.00	<0.01	<0.01	0.00	0.07
14	0.00	0.00	0.07	0.00	0.00	<0.01	<0.01	0.00	0.00	0.00	0.00	0.04
15	0.06	0.00	0.00	0.00	0.00	0.04	<0.01	0.00	0.00	0.05	0.00	<0.01
16	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	0.20	<0.01	0.00	0.05	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	0.38	0.00	0.01	0.01	0.23
19	0.00	0.09	0.00	0.00	0.00	0.07	<0.01	0.07	0.02	0.00	0.00	0.37
20	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.59	0.03	0.02	<0.01	0.60
21	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.53	<0.01	0.00	0.00	<0.01
22	0.00	---	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.30	0.00
23	0.00	---	0.00	0.00	0.00	<0.01	0.00	0.66	<0.00	0.00	0.93	0.00
24	0.00	---	0.00	0.16	<0.01	0.03	0.00	0.01	0.00	0.00	0.08	0.00
25	0.00	0.00	<0.01	0.09	<0.01	<0.01	0.00	0.00	0.31	0.00	0.16	0.00
26	0.00	0.07	0.15	---	0.00	0.02	0.00	0.04	0.00	0.00	0.07	0.00
27	0.00	0.00	0.00	---	0.00	0.00	0.00	0.06	0.24	0.00	0.00	0.00
28	0.22	0.00	0.00	0.00	0.00	0.00	0.78	0.09	0.00	0.00	0.00	0.00
29	0.19	0.00	0.23	0.00	0.10	0.00	0.00	0.00	<0.00	0.00	0.00	0.00
30	0.21	0.00	<0.01	0.05	---	0.00	0.00	0.00	0.10	0.00	0.00	0.00
31	---	---	<0.01	0.00	---	0.01	---	0.03	---	0.00	0.00	---
TOTAL	---	---	0.82	---	0.26	0.88	2.26	3.28	1.59	0.67	2.04	1.56
MEAN	---	---	0.03	---	0.01	0.03	0.08	0.11	0.05	0.02	0.07	0.05
MAX	---	---	0.23	---	0.10	0.20	0.78	0.66	0.60	0.24	0.93	0.60
MIN	---	---	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

e--Estimated.

462905112035401 MCBEATH RESIDENCE NEAR CLANCY, MT (MT07)—Continued

WATER-QUALITY DATA

PERIOD OF RECORD.--Water years 1981-1982, 1984 to current year.

REMARKS.--Samples from this site were analyzed by the Illinois Water Survey Laboratory in Champaign, Illinois. Chemical data are available through the internet at *http://nadp.sws.uiuc.edu/sites/sitemap.asp?net=NTN&state=MT07*.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
(WEEKLY COMPOSITE SAMPLES)

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
SEP 30 OCT 7	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT 07-14	.05	5.08	5.96	13.4	5.2	.14	.02	.023	.055	.10	.32	.360	.62
OCT 14-21	.06	4.91	5.45	26.3	3.0	.06	.008	.014	.007	.02	.11	.030	.24
OCT 21-28	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT 28-NOV 04	.77	5.19	5.54	15.6	1.7	.02	<.003	.008	<.003	.01	<.01	<.020	.06
NOV 04-11	.02	--	5.62	--	2.6	.11	.011	.011	.015	<.02	.11	<.070	.33
NOV 11-18	.20	5.32	5.47	8.8	2.5	.04	.005	.009	.003	.00	.07	<.020	.10
NOV 18-25	.17	6.79	7.11	22.6	19.9	.45	.031	.264	3.575	.72	1.02	<.020	.37
NOV 25-DEC 02	.15	5.08	5.20	7.8	4.1	.04	.003	.01	.011	.02	.17	.030	.31
DEC 02-09	.08	5.14	5.35	4.7	4.7	.06	.004	.013	.023	.03	.13	.110	.45
DEC 09-16	.25	5.26	5.21	2.8	4.4	.04	.006	.006	.005	<.01	.04	.050	.40
DEC 16-23	.00	--	--	--	--	--	--	--	--	--	--	--	--
DEC 23-30	.38	4.77	5.24	7.8	3.8	.04	.003	.003	.005	.02	.05	.020	.41
DEC 30-JAN 06	.44	4.98	5.08	6.6	5.0	.04	.004	.006	.003	<.01	.10	.040	.66
JAN 06-13	.00	--	--	--	--	--	--	--	--	--	--	--	--
JAN 13-20	.00	--	--	--	--	--	--	--	--	--	--	--	--
JAN 20-27	.05	5.10	5.32	4.6	4.4	.03	<.003	.005	.004	<.01	.13	.150	.63
JAN 27-FEB 03	.25	5.31	5.46	9.2	4.0	.04	.004	.009	.008	.01	.08	.080	.18
FEB 03-10	.09	5.25	5.27	11.1	3.9	.04	.003	.003	.007	<.01	.09	.080	.44
FEB 10-17	.04	5.32	5.60	6.4	4.9	.09	.01	.013	.027	.03	.37	.290	.53
FEB 17-24	.00	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24-MAR 02	.30	5.33	5.34	7.6	4.3	.03	<.003	.004	.009	.02	.25	.220	.64
MAR 02-09	.23	5.50	5.40	5.2	2.9	.05	.005	.009	.007	.01	.16	.060	.22
MAR 09-16	.28	5.43	5.44	9.9	4.1	.06	.007	.012	.014	.03	.22	.210	.59
MAR 16-23	.07	--	--	--	--	--	--	--	--	--	--	--	--
MAR 23-30	.05	--	5.70	17.5	4.8	.15	.012	.025	.149	.04	.35	.250	.42
MAR 30-APR 06	.60	--	6.47	17.8	11.3	.57	.047	.033	.336	.13	1.02	.680	1.23
APR 06-13	.65	--	--	--	--	--	--	--	--	--	--	--	--
APR 13-20	.02	--	--	--	--	--	--	--	--	--	--	--	--
APR 20-27	.16	6.22	5.69	3.2	3.6	.12	.009	.006	.023	.03	.28	.180	.32
APR 27-MAY 04	.78	5.39	6.08	6.0	3.4	.25	.029	.06	.022	.03	.32	.070	.31

462905112035401 MCBEATH RESIDENCE NEAR CLANCY, MT (MT07)—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
MAY 04-11	.05	--	6.76	--	14.1	1.19	.074	.062	.211	.28	1.04	.710	1.19
MAY 11-18	.28	5.64	6.28	8.0	5.9	.19	.018	.014	.022	.05	.55	.440	.68
MAY 18-25	2.71	--	5.36	7.0	4.0	.08	.010	.006	.009	.02	.30	.150	.42
MAY 25-JUN 01	.22	5.03	5.22	6.1	4.1	.05	.004	.007	.004	.02	.24	.100	.33
JUN 01-08	.21	5.39	6.09	7.9	6.3	.28	.027	.033	.103	.09	.63	.340	.78
JUN 08-15	.61	5.41	6.25	5.3	3.6	.19	.017	.009	.024	.05	.19	.070	.34
JUN 15-22	.05	4.70	5.47	16.7	7.9	.43	.056	.080	.021	.09	.63	.160	1.34
JUN 22-29	.55	5.03	5.09	8.4	6.7	.16	.016	.032	.009	.04	.43	.170	.65
JUN 29-JUL 06	.66	4.89	4.88	8.7	8.3	.18	.028	.138	.043	.07	.51	.040	.75
JUL 06-13	.01	--	5.44	--	11.3	.30	.043	.245	.096	.21	.74	.560	1.21
JUL 13-20	.08	5.14	5.28	13.6	11.0	.63	.076	.134	.060	.12	.88	.250	1.79
JUL 20-27	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 27-AUG 03	.07	5.05	6.98	34.6	19.6	1.66	.151	.144	.333	.55	1.48	.840	2.71
AUG 03-10	.34	5.49	5.61	8.8	6.7	.26	.026	.033	.060	.10	.52	.290	1.10
AUG 10-17	.05	4.28	5.02	36.9	15.3	.40	.045	.027	.020	.13	1.13	.770	2.24
AUG 17-24	1.24	--	5.33	6.2	3.5	.05	.005	.009	.019	.02	.17	.060	.28
AUG 24-31	.31	5.22	5.26	3.7	2.9	.02	<.003	.003	<.003	.01	.08	<.020	.16
AUG 31-SEP 07	.04	--	5.31	--	5.3	.09	.008	.016	.191	.07	.17	<.020	.52
SEP 07-14	.30	4.84	5.09	9.4	5.5	.06	.007	.011	.026	.03	.29	.030	.48
SEP 14-21	1.20	5.75	6.23	6.5	4.1	.39	.03	.013	.075	.10	.27	.030	.44
SEP 21-28	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 28-OCT 05	.02	--	5.72	--	22.2	1.19	.19	.175	.643	.16	3.17	.670	3.65

482958109475101 NORTHERN MONTANA AGRICULTURAL RESEARCH CENTER NEAR HAVRE, MT (MT98)

(National trends network)

LOCATION.--Lat 48°29'58", long 109°47'51" (NAD 27), in NE¼SW¼SW¼ sec.28, T.32 N., R.15 E., Hill County, Hydrologic Unit 10050004 at Northern Montana Agricultural Research Center Experiment Station, 3/4 mile south of U.S. Highway 87, 5.7 miles southwest of Havre.

PERIOD OF RECORD.--Water years 1986 to current year.

EQUIPMENT.--The sample collector is an Aerochem Metrics Model 301 precipitation collector. An automatic sensor detects occurrences of precipitation, activating a motor which removes a cover from the wetfall collection vessel. When precipitation ceases, the cycle is reversed. The sampling vessel is polyethylene and has a collection diameter of 28.6 cm and a capacity of 13 liters. Precipitation is measured using a Belfort Universal rain gage, series 5-780 with an event recorder. (The use of the brand name in this report is for identification purposes only and does not imply endorsement by the U.S. Geological Survey.) Snowfall accumulation is measured as a water equivalent.

REMARKS.--Missing precipitation data Nov. 23-25, Jan. 5-13, Jan. 23-26, and Jan. 29 to Feb. 9 due to equipment problems resulting from freezing air temperatures.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	---	0.00	0.53	0.00	0.00	0.10	0.00	0.27
2	0.00	0.10	0.00	0.04	---	0.10	0.00	0.00	<0.01	0.00	0.00	0.00
3	0.00	0.05	<0.01	0.13	---	0.00	0.00	<0.01	0.00	0.08	<0.01	0.00
4	0.00	0.10	0.00	0.02	---	0.00	0.00	0.00	0.10	0.28	0.03	0.00
5	0.00	<0.01	0.00	---	---	0.00	0.00	0.00	1.13	0.00	<0.01	0.00
6	0.00	0.00	0.00	---	---	0.00	0.00	0.00	0.18	0.00	0.08	0.00
7	<0.01	0.00	0.00	---	---	0.00	0.00	0.01	0.18	0.23	0.06	0.00
8	0.00	---	0.04	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	<0.01	---	0.00	---	---	<0.01	0.00	0.00	0.00	0.00	<0.01	0.00
10	0.00	---	0.00	---	0.00	0.00	0.00	<0.01	0.13	0.00	0.00	0.00
11	0.00	0.03	0.00	---	0.00	0.00	0.00	0.60	0.02	0.06	0.00	0.00
12	<0.01	0.00	0.00	---	0.00	0.00	0.00	0.15	0.18	0.00	0.00	0.05
13	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
14	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
15	0.04	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.02	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	<0.01
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
18	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.58	0.00	0.00	0.00	0.10
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.02	0.00	0.43
20	0.00	0.00	0.00	7.00	0.00	0.00	0.00	<0.01	0.00	0.00	0.00	0.00
21	0.00	0.13	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.00	0.01	0.00
22	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.55	0.02	0.00	0.04	0.00
23	0.00	---	0.00	0.00	0.00	<0.01	0.00	1.20	0.03	<0.01	0.75	0.00
24	0.00	---	0.00	---	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
25	0.00	---	0.00	---	0.00	0.00	0.00	<0.01	0.00	0.00	0.07	0.00
26	0.00	0.00	0.30	---	0.00	0.05	0.00	0.12	<0.00	0.02	0.17	0.00
27	0.00	0.00	0.45	0.04	0.04	<0.01	0.00	0.00	0.00	0.01	0.01	0.00
28	0.29	0.00	0.08	0.09	0.00	0.00	0.21	0.11	0.00	0.00	0.03	0.00
29	0.35	0.01	---	---	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00
30	0.00	0.00	---	---	---	0.00	0.00	0.01	0.06	0.05	0.00	0.00
31	0.03	---	---	---	---	<0.01	---	<0.01	---	0.10	0.00	---
TOTAL	0.74	---	---	---	---	0.19	0.95	4.24	2.11	1.01	1.28	1.39
MEAN	0.02	---	---	---	---	0.01	0.03	0.14	0.07	0.03	0.04	0.05
MAX	0.35	---	---	---	---	0.10	0.53	1.20	1.13	0.28	0.75	0.48
MIN	0.00	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00

482958109475101 NORTHERN MONTANA AGRICULTURAL RESEARCH CENTER NEAR HAVRE, MT (MT98)—Continued

WATER-QUALITY DATA

PERIOD OF RECORD.--Water years 1986 to current year.

REMARKS.--Samples from this site were analyzed by the Illinois Water Survey Laboratory in Champaign, Illinois. Chemical data are available through the internet at *http://nadp.sws.uiuc.edu/sites/sitemap.asp?net=NTN&state=MT07*.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
(WEEKLY COMPOSITE SAMPLES)

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
SEP 30 Oct 7	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT 07-14	<.01	--	7.00	--	22.3	.84	.092	.180	1.375	.44	1.02	.390	1.96
OCT 14-21	.04	--	5.27	--	8.0	.19	.026	.005	.024	.05	.90	.360	.94
OCT 21-28	.04	--	--	--	--	--	--	--	--	--	--	--	--
OCT 28-NOV 04	.88	5.15	5.37	4.1	3.3	.03	.006	.008	.003	.01	.14	.090	.41
NOV 04-11	.00	--	--	--	--	--	--	--	--	--	--	--	--
NOV 11-18	.03	--	5.13	--	6.6	.06	<.016	<.016	.068	<.03	.50	.200	.61
NOV 18-25	.18	--	--	--	--	--	--	--	--	--	--	--	--
NOV 25-DEC 02	.01	--	--	--	--	--	--	--	--	--	--	--	--
DEC 02-09	.04	--	5.67	--	4.5	.11	<.015	<.015	<.015	<.03	<.05	.250	1.08
DEC 09-16	.03	--	5.68	--	3.2	.09	.012	<.009	.009	.04	.12	.130	.33
DEC 16-23	.00	--	--	--	--	--	--	--	--	--	--	--	--
DEC 23-30	.83	5.53	5.59	2.6	3.0	.05	.007	.005	.005	.02	.09	.110	.42
DEC 30-JAN 06	.19	--	5.37	--	3.6	.05	.007	.006	.008	.02	.11	.060	.43
JAN 06-13	<.01	--	5.07	--	9.8	--	--	--	--	--	--	--	--
JAN 13-20	.07	5.11	5.24	5.2	5.3	.04	.005	.003	.008	.02	.35	.130	.51
JAN 20-27	.14	5.21	5.23	3.9	4.8	.06	.009	.006	.009	.01	.21	.040	.37
JAN 27-FEB 03	.13	--	--	--	--	--	--	--	--	--	--	--	--
FEB 03-10	<.01	--	5.39	--	6.3	.11	.012	.012	.019	<.02	.47	.280	.72
FEB 10-17	.00	--	--	--	--	--	--	--	--	--	--	--	--
FEB 17-24	.00	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24-MAR 02	.14	4.76	5.13	--	8.2	.09	.009	.008	.022	.06	.76	.400	1.13
MAR 02-09	.00	--	--	--	--	--	--	--	--	--	--	--	--
MAR 09-16	.00	--	--	--	--	--	--	--	--	--	--	--	--
MAR 16-23	.00	--	--	--	--	--	--	--	--	--	--	--	--
MAR 23-30	.05	6.70	7.00	28.1	26.7	1.38	.147	.109	.613	.29	2.99	1.53	3.74
MAR 30-APR 06	.53	5.96	6.50	5.8	6.4	.26	.027	.018	.090	.07	.44	.410	.67
APR 06-13	.00	--	--	--	--	--	--	--	--	--	--	--	--
APR 13-20	.21	5.98	6.14	7.8	7.9	.13	.020	.020	.023	.03	.88	.760	1.18
APR 20-27	.00	--	--	--	--	--	--	--	--	--	--	--	--
APR 27-MAY 04	.21	5.81	5.98	3.0	3.1	.10	.017	.034	.011	.03	.19	.180	.38

482958109475101 NORTHERN MONTANA AGRICULTURAL RESEARCH CENTER NEAR HAVRE, MT (MT98)—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED
(WEEKLY COMPOSITE SAMPLES)

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
MAY 04-11	.49	7.31	7.41	44.5	47.7	.339	.569	1.87	1.87	2.50	2.27	.750	1.04
MAY 11-18	.27	--	--	--	--	--	--	--	--	--	--	--	--
MAY 18-25	3.16	5.64	6.57	5.1	8.4	.027	.156	.051	.05	.06	.42	.910	.34
MAY 25-JUN 01	.26	5.70	5.74	3.8	4.4	.014	.012	.018	.02	.04	.28	.230	.54
JUN 01-08	1.41	4.91	5.32	6.0	4.0	.009	.013	.013	.01	.02	.23	.080	.32
JUN 08-15	.34	6.18	6.50	7.7	8.2	.049	.05	.056	.06	.08	.74	.550	1.12
JUN 15-22	.08	--	--	--	--	--	--	--	--	--	--	--	--
JUN 22-29	.03	--	--	--	--	--	--	--	--	--	--	--	--
JUN 29-JUL 06	.52	--	6.31	8.0	8.4	.047	.106	.046	.05	.10	.68	.710	1.16
JUL 06-13	.31	5.41	6.08	5.3	5.4	.03	.071	.026	.03	.05	.39	.340	.70
JUL 13-20	.06	5.55	6.00	18.9	19.0	.119	.137	.097	.10	.19	1.63	1.23	3.18
JUL 20-27	.03	--	5.21	--	15.0	.138	.237	.084	.08	.20	1.33	.490	2.38
JUL 27-AUG 03	.16	5.28	5.56	8.4	9.1	.072	.116	.035	.04	.08	.76	.420	1.18
AUG 03-10	.18	5.74	6.63	11.5	11.7	.076	.165	.075	.07	.14	.90	.870	2.22
AUG 10-17	.00	--	--	--	--	--	--	--	--	--	--	--	--
AUG 17-24	.80	5.25	5.34	4.4	4.4	.01	.018	.015	.01	.02	.29	.150	.46
AUG 24-SEP 07	.55	--	--	--	--	--	--	--	--	--	--	--	--
SEP 07-14	.53	5.32	5.62	3.5	3.6	.008	.005	.006	.01	.01	.29	.160	.40
SEP 14-21	.58	5.99	6.95	8.7	8.8	.072	.035	.21	.21	.27	.70	.280	.81
SEP 21-28	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 28-OCT 05	.00	--	--	--	--	--	--	--	--	--	--	--	--

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