

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT

LOCATION.--Lat 47°35'04", long 111°03'35" (NAD 27), in SW¹/₄SE¹/₄SW¹/₄ sec.11, T.21 N., R.5 E., Cascade County, Hydrologic Unit 10030102, on left bank 700 ft downstream from Morony Dam, 12.6 mi northeast of Great Falls, and at river mile 2,105.4.

DRAINAGE AREA.--23,292 mi².

PERIOD OF RECORD.--May to July 1953 (in WSP 1320-B), October 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,807.21 ft (NGVD 29). Prior to July 27, 1977, nonrecording gage at same site at elevation 2.00 ft higher. July 27, 1977 to May 26, 1987, at site 600 ft upstream at elevation 2.00 ft higher. October 1971 to July 27, 1977, discharges were obtained from the Montana Power Company at Rainbow Dam 7.05 mi upstream. Prior to October 1971, Foxboro meters were used for determining discharge through powerplant. Water-stage recorder on Morony Reservoir was used for determining head on taintor gates with elevation of gage at sea level (level by Montana Power Company).

REMARKS.--Records good. Flow regulated by 18 smaller irrigation reservoirs and powerplants upstream, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversion for irrigation of about 750,400 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	4,010	4,060	4,290	2,780	5,050	4,790	4,700	5,130	7,600	4,800	3,810	4,240
2	4,040	4,060	4,200	4,110	5,030	4,730	4,800	4,890	7,060	4,830	3,640	4,280
3	3,860	4,210	4,220	4,020	4,980	4,580	5,050	4,560	6,450	4,810	3,690	4,050
4	3,840	4,200	4,150	3,680	4,890	4,670	5,080	4,550	5,880	4,820	3,980	4,130
5	3,840	3,980	4,030	3,630	4,990	4,640	5,150	4,620	5,330	4,790	4,250	4,110
6	4,200	4,000	3,960	3,790	4,920	4,820	5,090	4,620	5,340	4,950	4,150	3,980
7	4,610	4,240	4,250	4,040	4,980	4,760	4,910	4,690	6,370	5,130	4,270	4,100
8	4,200	4,070	4,150	4,150	5,080	4,710	4,990	4,770	6,610	4,720	4,120	3,920
9	3,540	4,180	4,080	4,500	5,040	4,860	4,790	4,710	6,310	4,660	4,080	4,620
10	3,460	4,300	4,200	4,820	5,030	4,830	4,610	4,670	6,020	4,750	4,210	4,460
11	3,550	4,140	4,000	4,940	4,940	4,860	4,410	5,360	5,990	4,570	4,080	4,090
12	4,010	4,340	3,930	5,100	4,820	4,930	4,340	6,200	5,880	4,460	4,040	4,540
13	4,040	4,320	4,220	5,220	4,760	4,840	4,350	6,070	6,920	4,420	4,020	4,440
14	3,970	4,110	5,010	5,130	4,680	4,890	4,170	5,490	6,930	4,530	4,090	4,600
15	3,980	4,260	5,350	5,100	4,590	4,870	4,220	5,060	6,570	4,190	4,010	4,550
16	4,110	4,310	5,130	5,240	4,470	4,880	4,310	4,800	5,930	4,150	4,030	4,280
17	4,180	4,310	4,640	5,330	4,620	4,740	4,360	4,890	5,900	4,100	3,960	4,320
18	3,990	4,300	4,310	5,330	4,670	4,760	4,350	4,860	5,730	4,310	4,010	3,930
19	3,750	4,350	4,830	5,080	5,020	4,800	4,380	4,690	5,640	4,010	4,340	3,680
20	4,080	4,270	4,880	5,090	5,320	4,690	4,390	4,660	5,250	4,230	4,350	4,350
21	3,980	4,220	4,770	5,110	5,320	4,740	4,320	5,030	5,170	4,150	4,090	4,050
22	3,910	3,940	4,560	4,840	5,130	4,790	4,160	5,230	5,420	4,040	4,290	4,380
23	4,050	3,210	4,460	4,730	5,070	4,850	4,310	5,750	5,160	4,130	4,890	4,280
24	3,980	3,260	4,540	5,030	5,070	4,750	4,200	6,220	4,960	4,270	5,380	4,280
25	3,660	4,230	4,400	4,710	4,800	4,780	4,210	6,920	4,970	3,890	5,240	4,150
26	4,100	4,590	4,730	3,010	4,620	4,650	4,090	6,950	4,810	3,770	5,150	4,110
27	4,030	4,800	4,580	2,650	4,830	4,650	4,310	7,160	4,610	4,130	4,970	4,000
28	3,880	4,380	4,210	3,860	4,890	4,630	4,380	7,740	4,640	3,960	4,810	3,790
29	4,240	4,570	3,310	3,520	4,960	4,500	4,210	7,770	4,800	3,840	4,660	4,000
30	4,060	4,660	2,700	3,810	---	4,580	4,650	7,720	4,770	3,760	4,340	4,030
31	4,050	---	2,530	4,550	---	4,600	---	7,770	---	3,960	3,930	---
TOTAL	123,200	125,870	132,620	136,900	142,570	147,170	135,290	173,550	173,020	135,130	132,880	125,740
MEAN	3,974	4,196	4,278	4,416	4,916	4,747	4,510	5,598	5,767	4,359	4,286	4,191
MAX	4,610	4,800	5,350	5,330	5,320	4,930	5,150	7,770	7,600	5,130	5,380	4,620
MIN	3,460	3,210	2,530	2,650	4,470	4,500	4,090	4,550	4,610	3,760	3,640	3,680
AC-FT	244,400	249,700	263,100	271,500	282,800	291,900	268,300	344,200	343,200	268,000	263,600	249,400

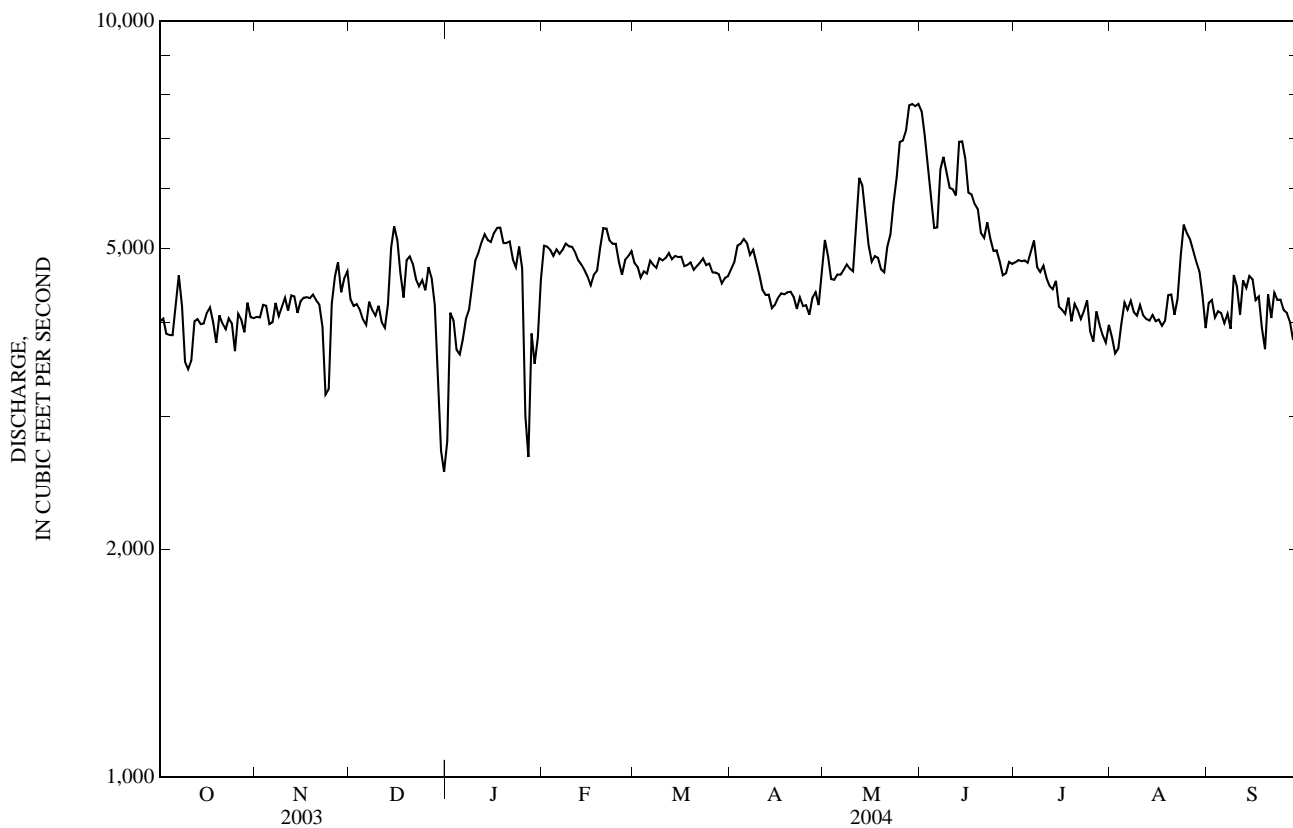
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

MEAN	5,770	6,119	6,104	6,257	6,461	6,762	7,404	10,830	13,570	8,537	5,894	5,524
MAX	11,940	10,430	11,520	8,232	9,252	10,820	13,200	24,780	30,160	23,560	9,946	9,992
(WY)	(1966)	(1966)	(1960)	(1971)	(1997)	(1968)	(1976)	(1976)	(1964)	(1975)	(1993)	(1984)
MIN	3,829	3,950	3,773	3,869	4,030	4,021	3,526	4,454	3,758	3,817	3,719	3,109
(WY)	(1989)	(1993)	(2002)	(2002)	(2002)	(1961)	(1961)	(1961)	(1977)	(1977)	(1988)	(1959)

06090300 MISSOURI RIVER NEAR GREAT FALLS, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	1,962,110		1,683,940			
ANNUAL MEAN	5,376		4,601		7,435	
HIGHEST ANNUAL MEAN					11,490	
LOWEST ANNUAL MEAN					4,349	
HIGHEST DAILY MEAN	13,300	May 31	7,770	May 29	63,400	Jun 10, 1964
LOWEST DAILY MEAN	2,530	Dec 31	2,530	Dec 31	1,760	Apr 16, 1961
ANNUAL SEVEN-DAY MINIMUM	3,670	Sep 3	3,300	Dec 29	2,740	Sep 5, 1959
MAXIMUM PEAK FLOW			8,180	May 28	a72,000	Jun 10, 1964
MAXIMUM PEAK STAGE			3.92	May 28	b9.02	May 24, 1981
INSTANTANEOUS LOW FLOW					c1.0	Apr 16, 1962
ANNUAL RUNOFF (AC-FT)	3,892,000		3,340,000		5,387,000	
10 PERCENT EXCEEDS	7,890		5,330		11,800	
50 PERCENT EXCEEDS	4,850		4,540		6,330	
90 PERCENT EXCEEDS	3,880		3,930		4,210	

a--From hydrographic comparison with nearby stations.
 b--site and datum then in use.
 c--About, powerplant shutdown.



MISSOURI RIVER BASIN

06090650 LAKE CREEK NEAR POWER, MT

LOCATION.--Lat 47°41'55", long 111°23'23" (NAD 27), in SE¹/₄SE¹/₄SE¹/₄ sec.31, T.23 N., R.3 E., Chouteau County, Hydrologic Unit 10030102, on left bank 1.9 mi downstream from county bridge, 1.5 mi upstream from Benton Lake, and 14 mi east of Power.

DRAINAGE AREA.--83.8 mi², of which 11.4 mi² is noncontributing.

PERIOD OF RECORD.--July 1990 to current year (seasonal records only).

GAGE.--Water-stage recorder. Parshall flume since Apr. 1, 1997. Prior to Apr. 1, 1997 water-stage recorder located at site 1.9 mi upstream. Elevation of gage is 3,620 ft (NGVD 29).

REMARKS.--Seasonal records fair. Seasonal flows from Muddy Creek diverted into Lake Creek, most years. 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, CALENDAR YEAR JANUARY TO DECEMBER 2004
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.04	0.17	0.03	0.00	0.00	33	26		
2				0.05	0.17	0.00	0.00	0.00	34	27		
3				0.05	0.11	0.00	0.00	0.00	37	27		
4				0.07	0.06	0.00	0.00	0.00	37	27		
5				0.17	0.06	0.00	0.00	0.00	36	27		
6				0.13	0.04	0.00	0.00	0.00	37	22		
7				0.07	0.00	0.15	0.00	0.00	37	27		
8				0.06	0.00	0.18	0.00	0.00	36	27		
9				0.06	0.00	0.17	0.00	0.00	37	27		
10				0.04	0.00	0.17	0.00	0.00	36	27		
11				0.01	0.00	0.19	0.00	0.00	36	27		
12				0.03	0.00	0.17	0.00	0.00	36	27		
13				0.01	0.00	0.16	0.00	0.00	37	6.4		
14				0.00	0.00	0.07	0.00	0.00	37	18		
15				0.01	0.00	0.00	0.00	0.00	36	27		
16				0.09	0.00	0.00	0.00	0.00	35	27		
17				0.06	0.00	0.00	0.00	0.00	35	27		
18				0.06	0.00	0.00	0.00	6.9	35	27		
19				0.06	0.00	0.00	0.00	25	36	22		
20				0.03	0.00	0.00	0.00	34	38	22		
21				0.06	0.03	0.00	0.00	35	38	5.0		
22				0.06	0.06	0.11	0.00	36	38	2.0		
23				0.02	0.15	0.15	0.00	39	38	0.88		
24				0.00	3.4	0.06	0.00	52	37	0.43		
25				0.00	2.4	0.00	0.00	40	31	0.30		
26				0.00	0.62	0.00	0.00	35	29	0.21		
27				0.00	0.25	0.00	0.00	35	32	0.19		
28				0.00	0.19	0.00	0.00	34	35	0.16		
29				0.05	0.19	0.00	0.00	34	34	0.13		
30				0.17	0.15	0.00	0.00	33	27	0.14		
31				---	0.06	---	0.00	33	---	0.12		
TOTAL				1.46	8.11	1.61	0.00	471.90	1,060	503.96		
MEAN				0.05	0.26	0.05	0.00	15.2	35.3	16.3		
MAX				0.17	3.4	0.19	0.00	52	38	27		
MIN				0.00	0.00	0.00	0.00	0.00	27	0.12		
AC-FT				2.9	16	3.2	0.00	936	2,100	1,000		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1990 - 2004

MEAN	3.64	3.04	12.7	12.4	1.29	12.2	26.1	16.4	3.85
MAX	24.8	8.56	30.9	29.8	9.51	35.5	38.1	30.1	10.2
(WY)	(1993)	(1993)	(1992)	(1991)	(1993)	(1990)	(1990)	(2000)	(1999)
MIN	0.05	0.01	0.26	0.05	0.00	0.35	11.3	0.19	0.22
(WY)	(2000)	(2003)	(2004)	(2004)	(1992)	(2002)	(2003)	(1994)	(2002)

SUMMARY STATISTICS

FOR 2004 SEASON

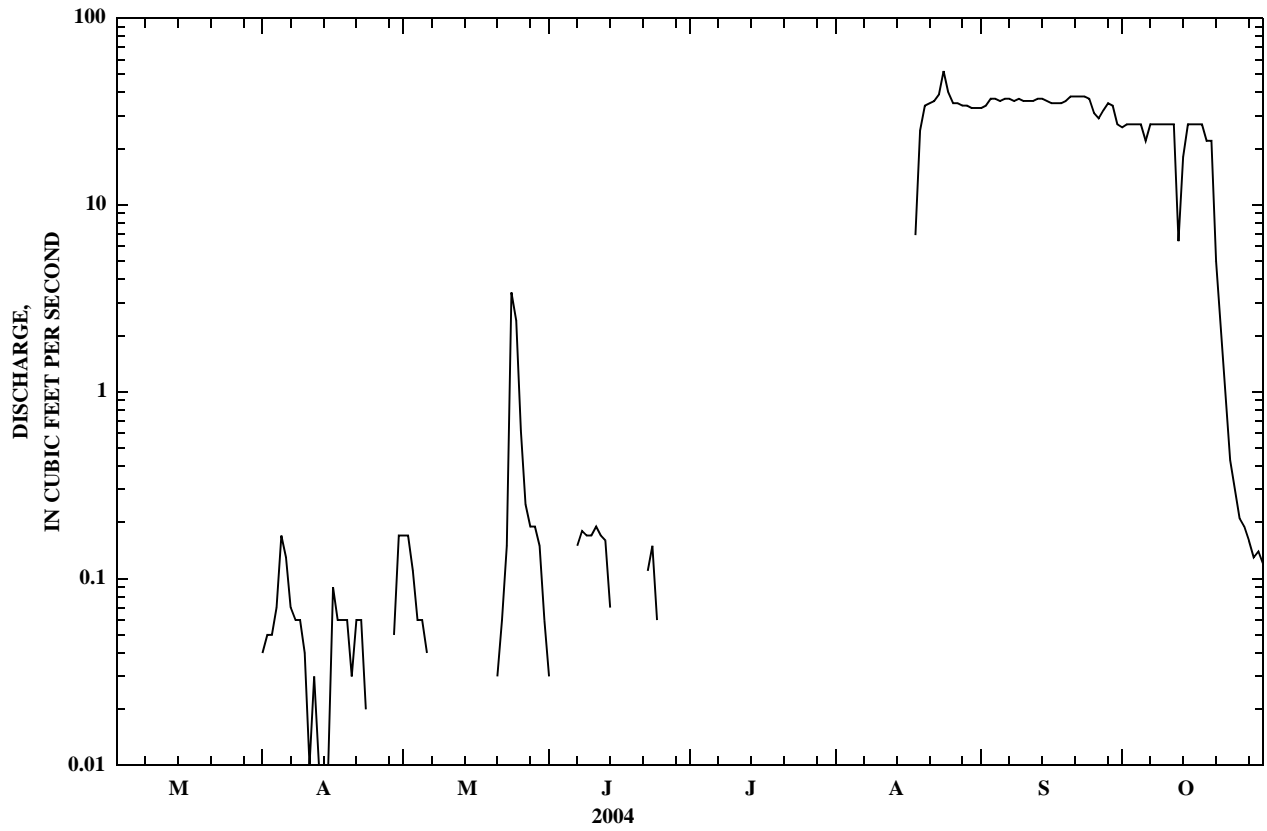
SEASONS 1990 - 2004

HIGHEST DAILY MEAN	52	Aug 24	300	Mar 6, 1993
LOWEST DAILY MEAN	.00	Many days	0.00	Jul 1, 1990
MAXIMUM PEAK FLOW	57	Aug 24	a300	Mar 6, 1993
MAXIMUM PEAK STAGE	2.30	Aug 24	b7.30	Mar 6, 1993

a--Estimated daily discharge during period of ice effect.

b--From floodmarks, site and datum then in use.

06090650 LAKE CREEK NEAR POWER, MT—Continued



06090800 MISSOURI RIVER AT FORT BENTON, MT

LOCATION.--Lat 47°49'03", long 110°39'59" (NAD 27), in NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.23, T.24 N., R.8 E., Chouteau County, Hydrologic Unit 10030102, on left bank at downstream side of Old Fort Benton Bridge at Fort Benton, 3.8 mi upstream from Shonkin Creek, and at river mile 2,073.2.

DRAINAGE AREA.--24,749 mi².

PERIOD OF RECORD.--October 1890 to current year. Records for June 1881 to September 1890, published in WSP 546 and 761, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 746: 1932. WSP 1146: 1891-1907, 1908(M), 1909-18, 1937-38. WSP 1209: 1948(P). WSP 1309: 1929(M). WSP 1629: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 2,614.05 ft (NGVD 1929). Prior to Oct. 11, 1920, nonrecording gages, and Oct. 11, 1920, to Apr. 25, 1924, water-stage recorder, all at present site at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by 18 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 751,000 acres upstream from station. Extreme diurnal fluctuation caused by powerplant at Morony Dam. 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	3,580	3,990	4,470	e2,580	e4,850	4,660	4,640	5,110	8,500	5,150	3,610	3,870
2	3,730	4,040	4,240	e3,550	e5,000	4,490	4,790	5,120	7,970	5,220	3,490	4,100
3	3,550	4,140	4,290	e3,980	e4,980	4,440	4,990	4,750	7,270	5,140	3,290	3,930
4	3,510	4,200	4,190	e3,710	e4,880	4,390	5,030	4,650	6,570	5,270	3,610	3,940
5	3,490	4,080	4,180	e3,570	e4,930	4,430	5,120	4,730	6,060	5,230	3,870	3,970
6	3,670	3,950	3,920	e3,670	e4,920	4,480	5,130	4,790	5,570	5,370	3,830	3,820
7	3,820	4,200	4,220	e3,910	e4,930	4,700	4,920	4,870	6,420	5,640	3,950	3,910
8	4,400	4,210	4,280	e4,070	e5,010	4,520	4,980	4,970	7,150	5,240	3,760	3,780
9	3,300	4,100	4,090	e4,340	e5,010	4,580	4,870	4,940	6,990	5,070	3,800	4,110
10	3,220	4,270	4,150	e4,690	e4,990	4,790	4,800	4,880	6,430	5,070	3,740	4,520
11	3,260	4,170	4,110	e4,880	e4,930	4,720	4,530	5,050	7,240	4,980	3,870	3,970
12	3,480	4,280	4,140	e5,000	e4,820	4,810	4,420	6,630	8,170	4,740	3,610	4,240
13	3,800	4,350	4,060	e5,140	e4,740	4,780	4,400	6,360	8,520	4,590	3,800	4,320
14	3,700	4,180	4,670	e5,130	e4,660	4,720	4,240	5,870	8,500	4,820	3,660	4,410
15	3,720	4,270	5,400	e5,080	e4,590	4,760	4,240	5,330	7,880	4,570	3,720	4,360
16	3,810	4,330	5,350	e5,160	e4,460	4,780	4,270	4,890	7,210	4,330	3,780	4,290
17	3,880	4,360	4,810	e5,240	e4,550	4,740	4,380	4,840	6,750	4,270	3,660	4,100
18	3,860	4,370	4,510	e5,290	e4,630	4,610	4,410	4,910	6,460	4,270	3,740	3,810
19	3,580	4,380	4,580	e5,120	e4,870	4,650	4,380	4,750	6,360	4,180	3,980	3,590
20	3,780	4,330	5,110	e5,030	e5,170	4,750	4,400	4,590	5,900	4,180	4,210	3,840
21	3,840	4,330	4,830	e5,060	e5,270	4,690	4,340	4,970	5,570	4,270	4,200	4,090
22	3,730	4,170	4,670	e4,910	e5,140	4,740	4,160	5,280	5,790	4,150	4,100	4,010
23	3,790	3,740	4,530	e4,700	e5,030	4,770	4,190	5,820	5,580	4,150	4,610	3,990
24	3,920	3,060	4,540	e4,950	5,000	4,760	4,170	6,880	5,350	4,250	5,500	4,090
25	3,670	4,100	4,460	e4,740	4,820	4,680	4,130	7,390	5,240	4,000	5,280	3,940
26	3,810	4,480	4,650	e3,460	4,530	4,690	4,050	7,780	5,300	3,650	5,200	3,910
27	3,970	5,030	4,640	e2,620	4,560	4,540	4,170	7,810	5,070	3,920	5,010	3,830
28	3,880	4,390	4,560	e3,380	4,680	4,630	4,360	8,530	5,060	3,790	4,750	3,610
29	4,060	4,470	3,990	e3,580	4,700	4,460	4,270	8,800	5,120	3,750	4,660	3,700
30	4,100	4,710	3,230	e3,660	---	4,540	4,540	8,770	5,260	3,440	4,340	3,760
31	3,970	---	e2,550	e4,250	---	4,550	---	8,670	---	3,740	3,940	---
TOTAL	115,880	126,680	135,420	134,450	140,650	143,850	135,320	182,730	195,260	140,440	126,570	119,810
MEAN	3,738	4,223	4,368	4,337	4,850	4,640	4,511	5,895	6,509	4,530	4,083	3,994
MAX	4,400	5,030	5,400	5,290	5,270	4,810	5,130	8,800	8,520	5,640	5,500	4,520
MIN	3,220	3,060	2,550	2,580	4,460	4,390	4,050	4,590	5,060	3,440	3,290	3,590
AC-FT	229,800	251,300	268,600	266,700	279,000	285,300	268,400	362,400	387,300	278,600	251,100	237,600

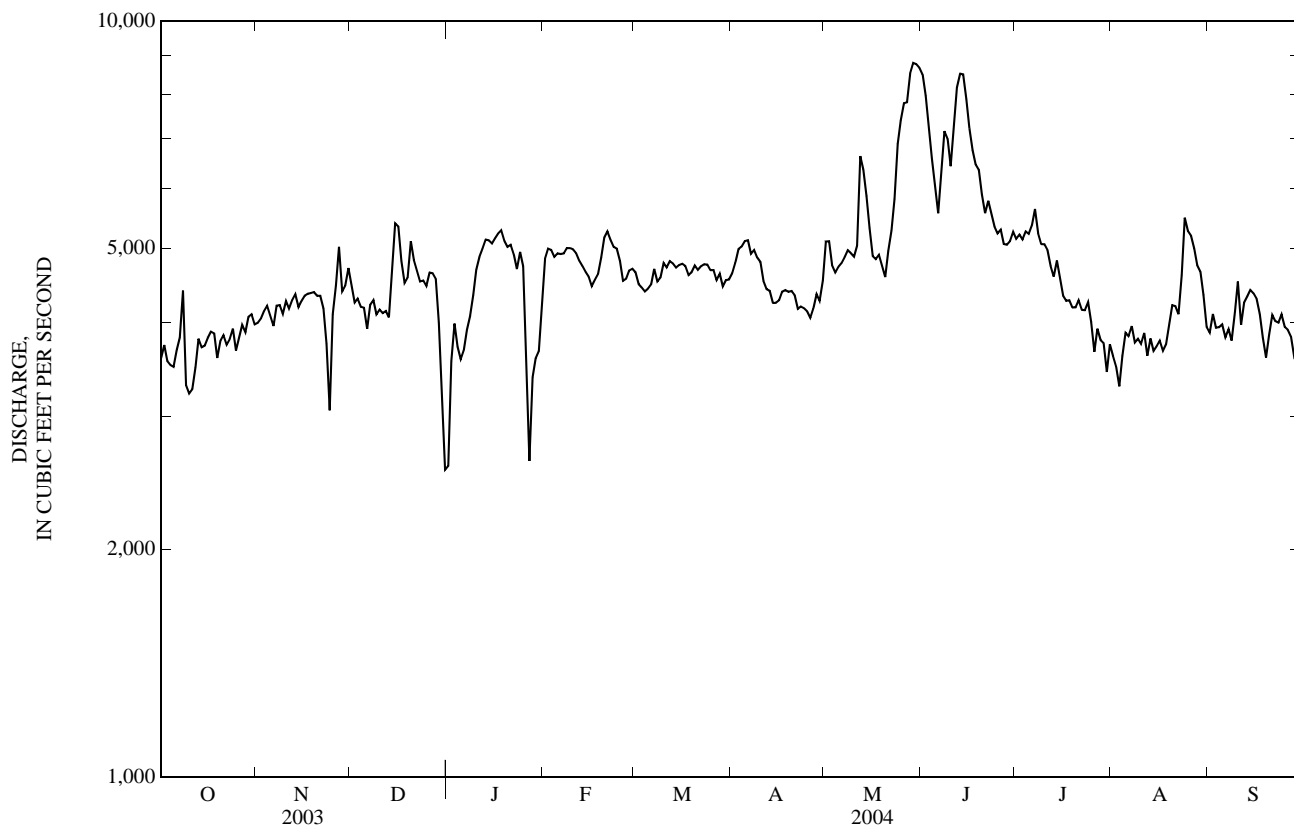
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1891 - 2004, BY WATER YEAR (WY)

MEAN	5,293	5,474	5,186	5,055	5,350	6,244	8,076	13,520	18,280	9,089	5,060	4,842
MAX	12,610	10,850	11,640	8,380	9,327	11,800	15,540	28,600	53,620	26,580	10,550	10,240
(WY)	(1966)	(1966)	(1960)	(1997)	(1997)	(1910)	(1910)	(1894)	(1908)	(1907)	(1993)	(1984)
MIN	2,441	2,789	2,446	2,377	2,492	2,986	3,574	4,144	4,055	2,433	1,576	1,890
(WY)	(1920)	(1920)	(1932)	(1932)	(1937)	(1938)	(1961)	(1941)	(1977)	(1919)	(1934)	(1934)

06090800 MISSOURI RIVER AT FORT BENTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1891 - 2004	
ANNUAL TOTAL	1,965,460		1,697,060			
ANNUAL MEAN	5,385		4,637		7,623	
HIGHEST ANNUAL MEAN					11,850	
LOWEST ANNUAL MEAN					3,619	
HIGHEST DAILY MEAN	13,900	May 31	8,800	May 29	107,000	Jun 7, 1908
LOWEST DAILY MEAN	2,550	Dec 31	2,550	Dec 31	627	Jul 5, 1936
ANNUAL SEVEN-DAY MINIMUM	3,500	Oct 9	3,310	Dec 30	1,190	Jan 10, 1932
MAXIMUM PEAK FLOW			a9,100	May 28	c140,000	Jun 6, 1908
MAXIMUM PEAK STAGE			b9.18	Feb 2	d18.50	Jun 6, 1908
INSTANTANEOUS LOW FLOW					f320	Jul 5, 1936
ANNUAL RUNOFF (AC-FT)	3,898,000		3,366,000		5,523,000	
10 PERCENT EXCEEDS	8,070		5,520		14,300	
50 PERCENT EXCEEDS	4,740		4,480		5,630	
90 PERCENT EXCEEDS	3,630		3,710		3,520	

a--Gage height, 3.39 ft.
 b--Backwater from ice.
 c--About, observed, from rating table extended above 63,000 ft³/s.
 d--Present datum.
 e--Estimated.
 f--Gage height, -0.05 ft.



MARIAS RIVER BASIN

06091700 TWO MEDICINE RIVER BELOW SOUTH FORK, NEAR BROWNING, MT

LOCATION.--Lat 48°25'36", long 112°59'20" (NAD 27), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T.31 N., R.11 W., Glacier County, Hydrologic Unit 10030201, Blackfeet Indian Reservation, on left bank 15 ft downstream from bridge on Blackfeet Secondary Highway No. 1, 9.7 mi south of Browning, and 12.3 mi northwest of Heart Butte.

DRAINAGE AREA.--250 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 4,180 ft (NGVD 29). May 1977 to September 1997 at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lower Two Medicine Lake (station number 06090900). Diversions for irrigation of about 64 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water discharge and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s, June 8, 1964, as determined at Two Medicine River near Browning (station number 06092000) located about 10 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	30	e22	e35	e30	e24	e40	221	686	579	528	230	167
2	31	e23	e41	e24	e23	e31	172	714	502	500	229	155
3	30	e22	e36	e22	e25	e30	152	820	512	472	226	153
4	24	e21	e34	e18	e27	e41	173	919	555	491	221	148
5	20	e21	e36	e19	e38	e54	240	1,010	580	512	218	145
6	20	e29	e38	e25	e40	e52	287	953	612	456	217	146
7	18	e27	e35	e30	e42	e72	340	899	1,030	462	222	143
8	18	e27	e33	e33	e37	e120	350	938	1,070	452	220	140
9	20	e33	e31	e33	e40	e140	317	939	866	422	219	138
10	24	e44	e32	e34	e37	e110	275	878	779	384	217	136
11	22	e37	e28	e36	e33	104	268	903	661	358	212	134
12	21	e36	e32	e35	e36	93	310	925	649	317	209	136
13	22	e41	e36	e36	e35	82	418	1,000	650	294	206	138
14	23	e40	e41	e35	e33	68	542	1,050	640	284	202	133
15	23	e39	e44	e35	e50	65	507	1,060	670	287	201	134
16	24	e39	e42	e33	e48	58	387	1,050	606	290	202	136
17	22	e41	e41	e33	e47	64	322	1,040	564	289	198	128
18	26	e43	e42	e33	e48	80	284	974	501	270	233	53
19	24	e31	e43	e33	e50	141	273	875	465	274	186	47
20	23	e24	e44	e32	e48	114	284	811	438	314	180	53
21	23	e21	e40	e29	e46	94	329	781	425	278	178	50
22	24	e20	e38	e32	e44	92	396	788	426	271	170	48
23	22	e34	e40	e33	e43	107	473	853	463	283	179	46
24	23	e36	e41	e28	e43	155	522	751	511	308	173	46
25	24	e38	e35	e24	e44	154	486	700	593	298	173	44
26	23	e40	e33	e21	e43	142	527	781	657	294	186	43
27	23	e39	e34	e20	e42	122	684	990	639	277	181	43
28	25	e37	e30	e21	e39	106	787	938	583	245	177	43
29	e24	e41	e29	e23	e38	107	648	839	556	239	176	43
30	e23	e37	e24	e28	---	135	647	714	533	236	174	44
31	e21	---	e34	e24	---	209	---	641	---	232	171	---
TOTAL	720	983	1,122	892	1,143	2,982	11,621	27,220	18,315	10,617	6,186	3,013
MEAN	23.2	32.8	36.2	28.8	39.4	96.2	387	878	610	342	200	100
MAX	31	44	44	36	50	209	787	1,060	1,070	528	233	167
MIN	18	20	24	18	23	30	152	641	425	232	170	43
AC-FT	1,430	1,950	2,230	1,770	2,270	5,910	23,050	53,990	36,330	21,060	12,270	5,980
*	0	0	0	0	0	0	0	3,770	8,670	9,890	7,770	2,440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2004, BY WATER YEAR (WY)

	92.7	124	76.6	59.7	88.5	144	497	1,160	1,040	361	162	102
MEAN	92.7	124	76.6	59.7	88.5	144	497	1,160	1,040	361	162	102
MAX	533	558	394	180	394	474	923	2,040	2,922	656	265	240
(WY)	(1986)	(1996)	(1996)	(1981)	(1996)	(1986)	(1990)	(1991)	(2002)	(2002)	(2002)	(1985)
MIN	23.2	18.8	19.7	17.9	26.4	40.5	140	439	282	173	41.2	24.4
(WY)	(2004)	(1980)	(1999)	(1982)	(1980)	(1980)	(2001)	(1977)	(1977)	(1994)	(1994)	(1988)

06091700 TWO MEDICINE RIVER BELOW SOUTH FORK, NEAR BROWNING, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1977 - 2004	
ANNUAL TOTAL	94,274		84,814			
ANNUAL MEAN	258		232		331	
HIGHEST ANNUAL MEAN					542	1991
LOWEST ANNUAL MEAN					199	2001
HIGHEST DAILY MEAN	1,760	May 31	1,070	Jun 8	8,600	Jun 7, 1995
LOWEST DAILY MEAN	18	Oct 7	18	Oct 7	10	Jan 29, 1980
ANNUAL SEVEN-DAY MINIMUM	20	Oct 5	20	Oct 5	13	Feb 3, 1982
MAXIMUM PEAK FLOW			a1,270	Jun 7	b11,700	May 19, 1991
MAXIMUM PEAK STAGE			4.20	May 5	c8.25	Jun 7, 1995
ANNUAL RUNOFF (AC-FT)	187,000		168,200		240,000	
10 PERCENT EXCEEDS	814		674		953	
50 PERCENT EXCEEDS	53		106		120	
90 PERCENT EXCEEDS	24		24		32	

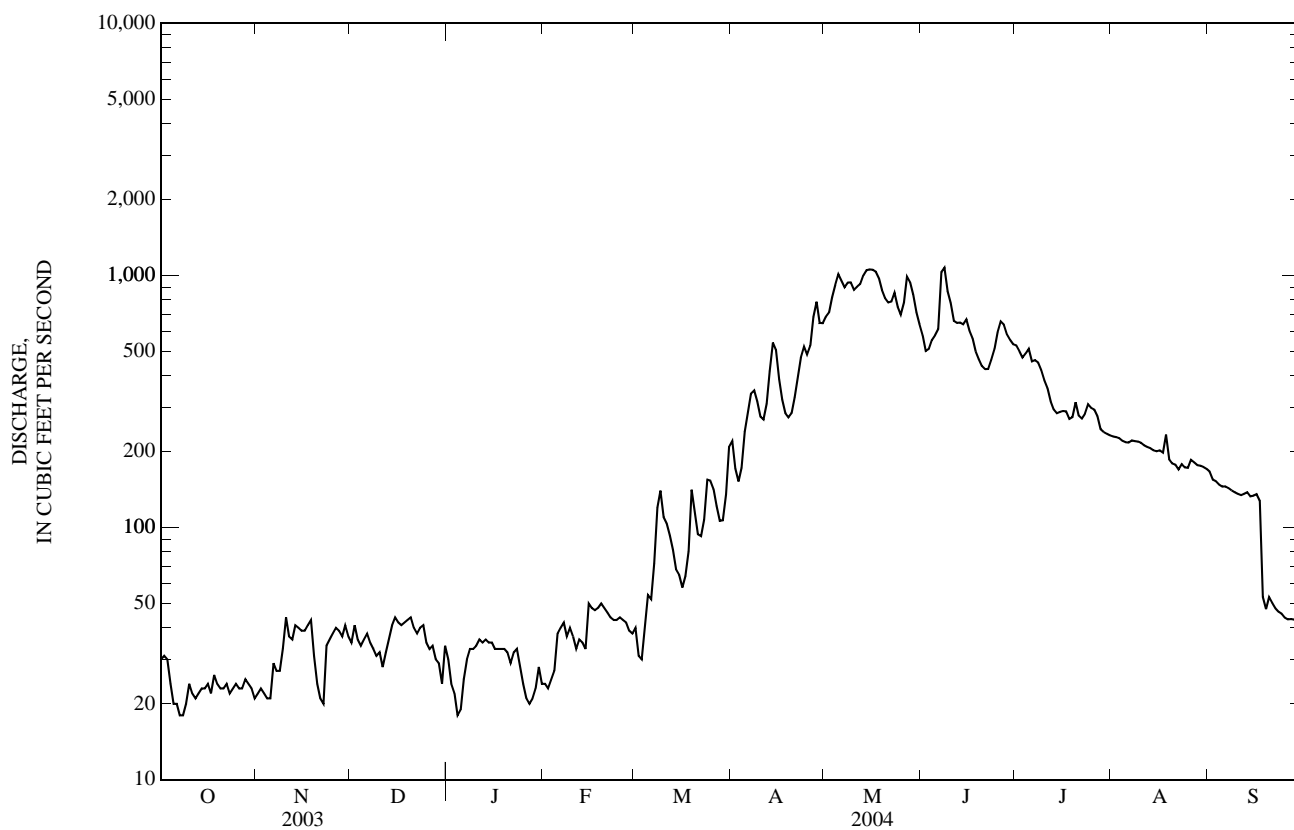
*--Flows, in acre-ft, in Two Medicine Canal.

a--Gage height, 4.13 ft.

b--Gage height, 7.78 ft, previous datum; from rating curve extended above 5,500 ft³/s.

c--Previous datum.

e--Estimated.



06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT

LOCATION.--Lat 48°22'12", long 112°48'07" (NAD 27), in NW¹/₄SW¹/₄SE¹/₄ sec.8, T.30 N., R.9 W., Glacier County, Hydrologic Unit 10030201, Blackfeet Indian Reservation, on left bank, 3.4 mi downstream from point of diversion to Four Horns Canal, 15.5 mi southeast of Browning, and at river mile 11.6.

DRAINAGE AREA.--152 mi².

PERIOD OF RECORD.--October 1973 to current year. Records equivalent to those published as Badger Creek near Browning (station number 06092500) if diversion to Four Horns Canal is added to flow past station.

GAGE.--Water-stage recorder. Elevation of gage is 4,140 ft (NGVD 29). May 1951 to September 1973, water-stage recorder at site 3.4 mi upstream (station number 06092500) at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Four Horns Canal diverts water from right bank in NE¹/₄ sec.24, T.30 N., R.10 W., at diversion dam 3.4 mi upstream for irrigation of about 6,000 acres downstream from station. Recorded diversions by Four Horns Canal are listed in daily table below. Several observations of water temperature and specific conductance were made during the year. Bureau of Reclamation satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 49,700 ft³/s, June 8, 1964, gage height, 10.37 ft, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow, as determined at Badger Creek near Browning site (station number 06092500) 3.4 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	89	e80	e80	e62	e66	67	119	162	297	142	34	28
2	89	e82	e86	e60	e64	66	112	191	292	129	33	27
3	89	e86	e86	e54	e70	60	108	264	315	119	33	28
4	88	e70	83	e46	e76	69	113	319	361	122	33	27
5	87	e70	83	e48	e80	67	122	390	412	130	32	27
6	87	e80	85	e54	e82	63	124	336	451	109	32	27
7	86	e86	83	e64	87	69	106	317	397	109	33	27
8	86	e88	79	e76	81	77	121	354	338	114	33	26
9	92	90	e74	e76	77	80	117	341	276	100	32	26
10	92	93	e66	e80	72	83	104	298	262	92	32	26
11	90	89	e62	e80	75	80	97	287	253	88	32	26
12	90	89	80	81	72	79	103	231	249	81	32	26
13	90	85	86	79	69	79	120	199	235	77	31	26
14	90	83	89	83	74	76	143	179	229	68	31	27
15	90	82	85	81	72	74	149	175	214	60	30	27
16	91	82	81	77	71	73	128	172	184	59	31	27
17	90	82	80	74	71	73	108	184	181	56	30	27
18	95	e82	78	74	78	74	95	196	165	53	49	27
19	92	e80	82	73	78	87	86	211	152	51	38	27
20	90	e70	82	72	73	83	81	234	145	56	32	28
21	87	e60	78	68	71	82	79	281	143	51	31	27
22	87	e52	76	69	71	80	75	302	150	47	31	27
23	86	e48	74	73	73	83	75	290	163	45	32	26
24	87	e60	75	e66	73	90	92	249	170	43	32	26
25	86	e64	74	e62	74	96	99	229	173	40	31	26
26	84	e64	74	e58	72	96	105	256	173	36	31	27
27	82	e66	74	e54	69	95	147	325	162	33	31	27
28	e82	e66	64	e56	67	91	259	385	146	34	29	27
29	e80	e74	e64	e58	66	89	208	395	142	34	29	27
30	e78	e80	e56	e62	---	90	177	356	156	34	29	27
31	e76	---	e64	e70	---	103	---	314	---	33	29	---
TOTAL	2,708	2,283	2,383	2,090	2,124	2,474	3,572	8,422	6,986	2,245	998	804
MEAN	87.4	76.1	76.9	67.4	73.2	79.8	119	272	233	72.4	32.2	26.8
MAX	95	93	89	83	87	103	259	395	451	142	49	28
MIN	76	48	56	46	64	60	75	162	142	33	29	26
AC-FT	5,370	4,530	4,730	4,150	4,210	4,910	7,090	16,710	13,860	4,450	1,980	1,590
DIVERSION BY FOUR HORNS CANAL												
AC-FT	0	0	0	0	0	0	3,560	5,460	6,220	6,220	5,160	4,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY)

MEAN	83.9	111	96.5	88.7	89.5	94.1	172	492	565	164	74.1	67.1
MAX	316	295	184	160	198	205	321	899	2,240	568	184	199
(WY)	(1986)	(1990)	(1976)	(1976)	(1996)	(1986)	(1990)	(1976)	(1975)	(1975)	(1975)	(1993)
MIN	9.13	40.9	42.9	57.0	52.5	44.6	62.3	140	58.9	17.5	16.4	15.6
(WY)	(1978)	(2002)	(1984)	(2001)	(2001)	(1977)	(1977)	(1977)	(1977)	(1977)	(1984)	(1988)

06093200 BADGER CREEK BELOW FOUR HORNS CANAL, NEAR BROWNING, MT—Continued

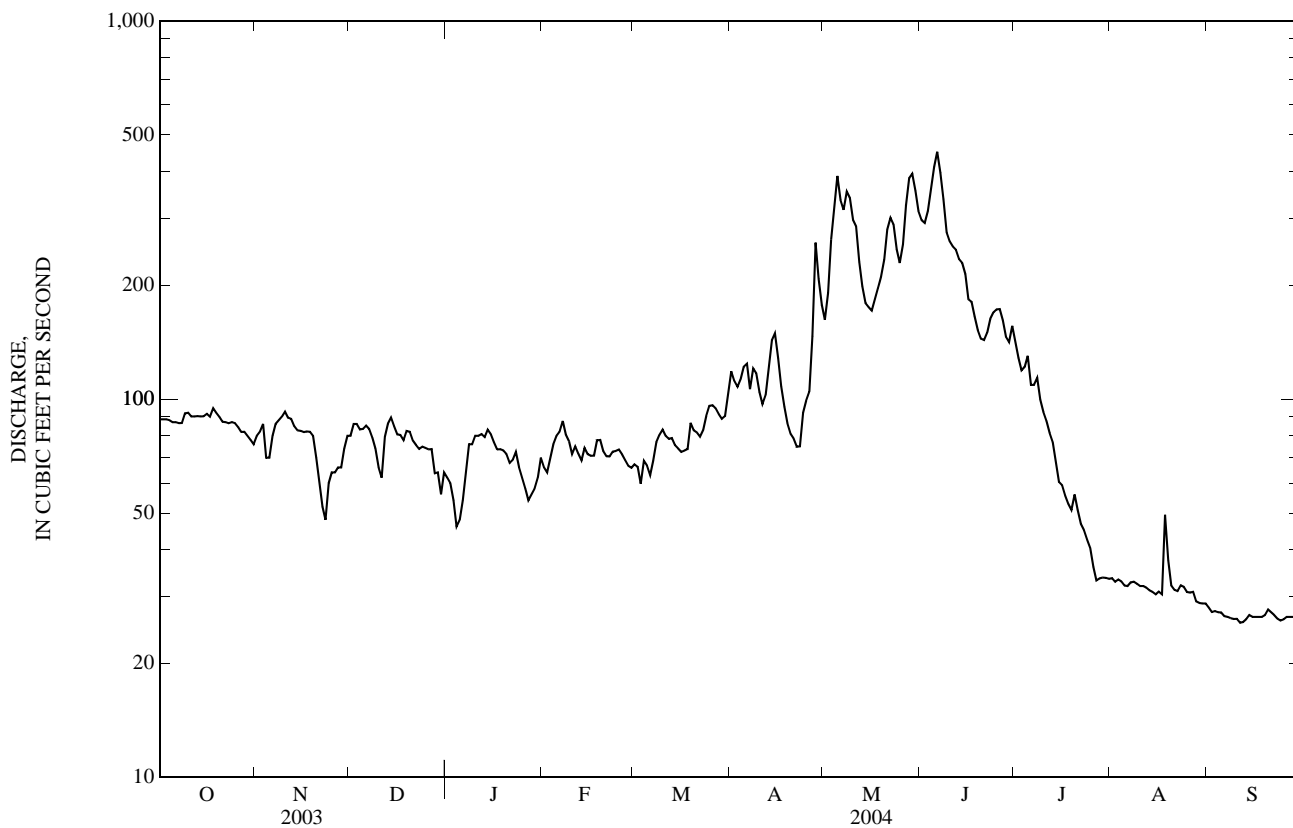
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004	
ANNUAL TOTAL	49,167		37,089			
ANNUAL MEAN	135		101*		175**	
HIGHEST ANNUAL MEAN					350	
LOWEST ANNUAL MEAN					68.1	
HIGHEST DAILY MEAN	1,260	May 26	451	Jun 6	14,000	Jun 19, 1975
LOWEST DAILY MEAN	37	Sep 19	26	Sep 8	6.5	Sep 17, 1984
ANNUAL SEVEN-DAY MINIMUM	38	Sep 1	26	Sep 7	7.7	Oct 25, 1977
MAXIMUM PEAK FLOW			475	Jun 6	a20,700	Jun 19, 1975
MAXIMUM PEAK STAGE			5.63	Jun 6	13.58	Jun 19, 1975
ANNUAL RUNOFF (AC-FT)	97,520		73,570		126,600	
10 PERCENT EXCEEDS	277		229		387	
50 PERCENT EXCEEDS	89		80		96	
90 PERCENT EXCEEDS	45		31		41	

*--144 ft³/s, adjusted flow by Four Horns Canal.

**--215 ft³/s, adjusted flow by Four Horns Canal.

a--From rating curve extended above 7,700 ft³/s, based on comparison with previous site, 3.4 miles upstream.

e--Estimated.



06098500 CUT BANK CREEK NEAR BROWNING, MT

LOCATION--Lat 48°37'00", long 113°02'06" (NAD 27), in NE¹/₄NW¹/₄SW¹/₄ sec. 15, T.33 N., R.11 W., Glacier County, Hydrologic Unit 10030202, Blackfeet Indian Reservation, on right bank 20 ft downstream from bridge on Montana Secondary Highway 464, 4.0 mile north of Browning, and at river mile 73.3.

DRAINAGE AREA.--123 mi².

PERIOD OF RECORD.--April 1918 to October 1925 (seasonal records only), April 1991 to current year.

REVISED RECORDS.--WDR MT-93-1: 1992(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,380 ft (NGVD 29). April 1918 to October 1925, water-stage recorder at site about 120 ft upstream at different elevation. April 1991 to September 1995 at elevation 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,200 acres upstream from station. Several observations of water temperature and specific conductance were made during the year. 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	23	e40	46	e30	e23	e28	69	241	324	317	61	75
2	18	e45	38	e26	e22	e26	69	233	312	318	62	72
3	18	e42	40	e22	e21	e29	67	322	345	307	59	67
4	17	e38	40	e19	e21	30	67	420	411	299	56	62
5	17	e37	37	e17	e21	31	73	428	498	329	51	56
6	17	e39	39	e16	e26	29	85	394	551	311	47	54
7	17	e41	40	e17	e28	30	101	324	532	286	52	53
8	17	e42	e46	e18	e30	41	121	320	425	305	55	50
9	21	e46	e44	e19	e30	56	132	356	345	276	55	47
10	21	50	e43	e23	e28	56	123	329	295	241	50	46
11	21	50	e42	e30	e24	48	112	325	272	218	45	43
12	23	46	36	e36	e25	47	112	276	307	202	41	42
13	24	42	34	e31	e25	44	134	236	306	185	38	46
14	24	41	36	34	e24	40	180	225	294	172	35	47
15	25	40	39	33	e25	39	221	234	284	165	33	46
16	29	39	38	31	e27	39	208	224	258	162	35	49
17	29	39	37	30	e27	41	176	210	249	155	36	62
18	29	41	39	30	e28	41	152	213	239	148	62	70
19	27	64	33	29	e28	47	132	227	219	140	55	73
20	29	62	33	31	e26	48	121	259	205	141	54	79
21	31	e54	33	43	e24	44	e120	326	202	139	60	74
22	34	e40	32	36	e23	44	e115	374	208	131	57	70
23	36	e44	31	28	e22	46	e110	376	243	117	62	68
24	38	e46	31	e38	e21	51	e120	318	301	101	59	65
25	38	e46	e42	e26	e23	54	e130	283	320	88	58	61
26	37	41	e38	e25	e27	54	e150	276	373	79	84	59
27	37	39	e34	e24	e28	50	e190	360	380	77	112	59
28	38	38	e32	e25	e30	49	310	441	330	77	110	56
29	46	41	e30	e26	e30	51	347	446	301	72	98	58
30	49	41	e27	e27	---	50	291	409	313	65	91	56
31	e42	---	e31	e26	---	55	---	361	---	60	81	---
TOTAL	872	1,314	1,141	846	737	1,338	4,338	9,766	9,642	5,683	1,854	1,765
MEAN	28.1	43.8	36.8	27.3	25.4	43.2	145	315	321	183	59.8	58.8
MAX	49	64	46	43	30	56	347	446	551	329	112	79
MIN	17	37	27	16	21	26	67	210	202	60	33	42
AC-FT	1,730	2,610	2,260	1,680	1,460	2,650	8,600	19,370	19,120	11,270	3,680	3,500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2004, BY WATER YEAR (WY)*

MEAN	53.8	59.7	41.1	31.2	38.2	52.9	137	411	494	185	65.7	42.8
MAX	136	216	157	73.8	139	110	217	740	955	344	140	81.8
(WY)	(1996)	(1996)	(1996)	(1996)	(1996)	(1997)	(1996)	(1991)	(2002)	(2002)	(1923)	(1993)
MIN	15.2	25.4	17.3	18.5	15.4	17.8	57.1	248	184	57.9	15.6	11.7
(WY)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(1992)	(1992)	(2001)	(2001)	(2001)

06098500 CUT BANK CREEK NEAR BROWNING, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1918 - 2004*	
ANNUAL TOTAL	35,988		39,296		128	
ANNUAL MEAN	98.6		107		201	
HIGHEST ANNUAL MEAN					69.0	
LOWEST ANNUAL MEAN					2001	
HIGHEST DAILY MEAN	970	May 27	551	Jun 6	3,400	Jun 7, 1995
LOWEST DAILY MEAN	14	Feb 23	16	Jan 6	9.1	Sep 3, 2001
ANNUAL SEVEN-DAY MINIMUM	16	Feb 18	17	Oct 2	9.8	Aug 30, 2001
MAXIMUM PEAK FLOW			577	Jun 6	a5,480	Jun 7, 1995
MAXIMUM PEAK STAGE			3.45	Jun 6	b5.59	Jun 7, 1995
INSTANTANEOUS LOW FLOW			16	Oct 4	c4.9	Nov 22, 1994
ANNUAL RUNOFF (AC-FT)	71,380		77,940		92,930	
10 PERCENT EXCEEDS	269		311		333	
50 PERCENT EXCEEDS	39		49		51	
90 PERCENT EXCEEDS	21		25		21	

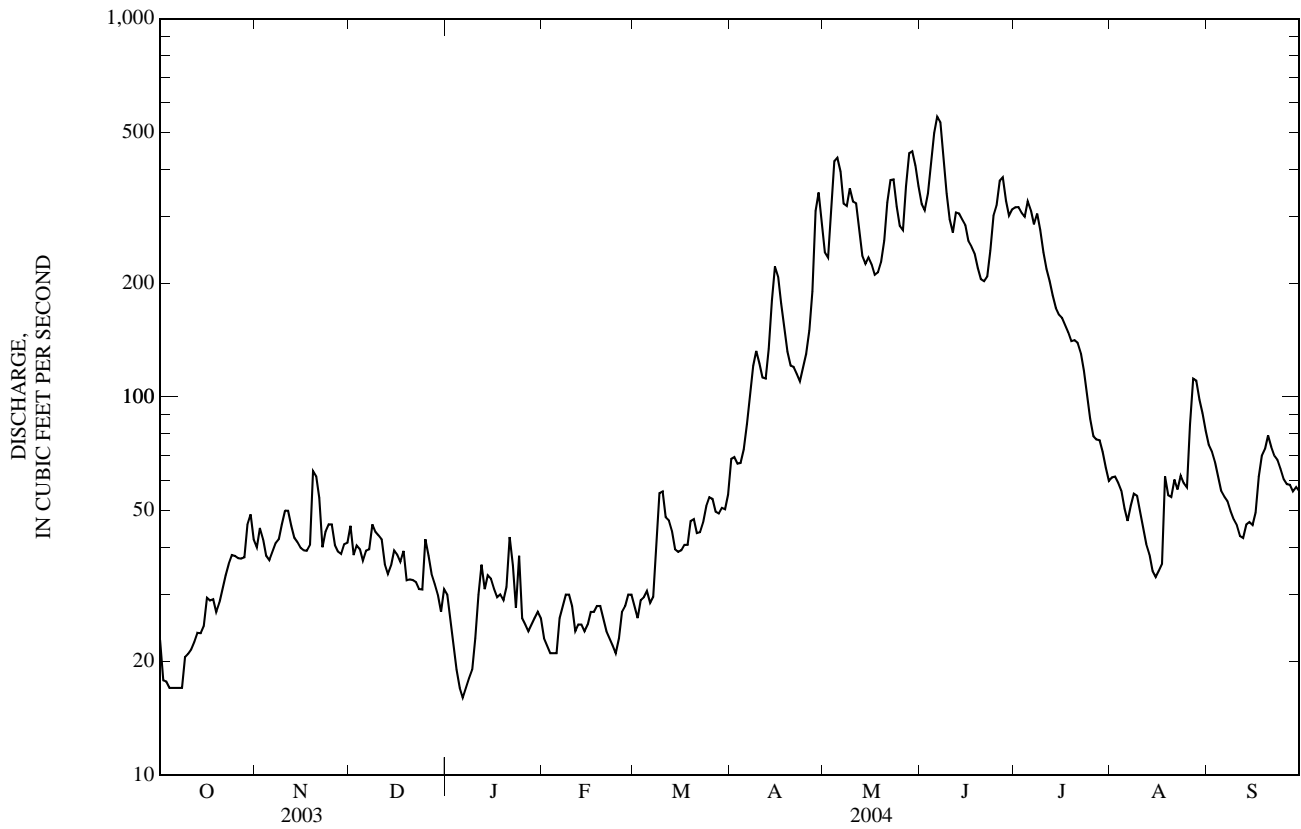
*--During periods of operation (April 1918 to October 1925, seasonal records only; April 1991 to current year).

a--From rating curve extended above 2,500 ft³/s.

b--Previous datum.

c--Gage height, 0.60 ft, result of freezeup.

e--Estimated.



06099000 CUT BANK CREEK AT CUT BANK, MT

LOCATION.--Lat 48°38'00", long 112°20'46" (NAD 27), in SW¹/₄SE¹/₄NE¹/₄ sec.11, T.33 N., R.6 W., Glacier County, Hydrologic Unit 10030202, Blackfeet Indian Reservation, on right bank, 0.1 mi downstream from bridge on U.S. Highway 2, 0.7 mi west of Cut Bank, 0.8 mi downstream from Old Maids Coulee, and at river mile 17.7.

DRAINAGE AREA.--1,041 mi².

PERIOD OF RECORD.--August 1905 to October 1919, May to July 1920, May 1922 to October 1924, May 1951 to September 1973, October 1981 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309; 1907-8, 1910-11, 1924-25. WSP 1509: 1911, 1916(M). WSP 1559: 1905(M), 1908(M). WSP 1709: 1959. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,561.42 ft (NGVD 29). Prior to May 12, 1922, nonrecording gage at several sites 0.5 mi upstream at various elevations. May 12, 1922 to Nov. 1, 1924, nonrecording gage at present site and different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Few minor diversions for irrigation upstream from station. Natural flow of stream may be affected by return flow from Two Medicine Canal which irrigates lands 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 June 20, 1975 reached a discharge of 5,200 ft³/s, gage height, 8.2 ft, from floodmarks.

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	e34	e54	e20	e17	e35	70	274	372	315	57	109
2	22	e38	e54	e18	e16	e32	80	248	339	312	56	105
3	22	e40	e54	e17	e16	e28	85	241	331	300	62	99
4	22	e38	e54	e16	e16	e30	85	328	363	301	64	95
5	22	e36	e56	e14	e17	e35	85	393	419	325	61	92
6	23	e40	e56	e13	e27	e42	84	414	482	330	55	89
7	24	e42	e58	e15	e33	e46	88	369	525	305	62	87
8	22	e43	e54	e16	e36	e54	100	298	514	283	72	88
9	22	e46	e50	e16	e36	e46	115	295	422	293	76	85
10	22	e50	e47	e17	e33	e43	131	325	358	270	80	82
11	22	e56	e43	e18	e26	e40	127	352	322	236	74	83
12	22	e58	e43	e17	e27	e46	120	347	298	204	69	80
13	23	e56	e44	e17	e28	e46	118	312	319	187	65	82
14	24	e58	e46	e18	e29	e46	133	293	316	169	54	87
15	24	e60	e48	e19	e34	e44	176	280	311	154	48	90
16	26	e62	e50	e19	e34	e58	215	280	310	147	48	87
17	26	e64	e50	e23	e38	e56	208	261	306	139	46	77
18	26	e66	e50	e26	e39	e56	188	255	294	127	47	83
19	26	e66	e49	e26	e40	e62	169	278	264	124	58	90
20	25	e60	e49	e27	e40	e66	151	268	248	116	77	95
21	25	e42	e50	e28	e36	e74	139	303	246	111	89	94
22	26	e32	e52	e28	e36	89	130	376	234	125	99	89
23	26	e35	e52	e27	e38	69	122	470	231	114	104	84
24	26	e42	e53	e26	e41	68	116	465	268	104	113	78
25	27	e46	e50	e23	e42	68	117	416	312	88	103	74
26	30	e50	e47	e18	e42	71	127	348	334	79	91	69
27	30	e54	e42	e14	e40	72	132	326	374	71	102	67
28	32	e56	e35	e16	e40	68	161	389	391	70	120	66
29	40	e56	e25	e17	e38	66	291	453	346	71	125	63
30	29	e56	e20	e18	---	66	314	456	307	70	120	65
31	e30	---	e21	e17	---	67	---	419	---	64	114	---
TOTAL	787	1,482	1,456	604	935	1,689	4,177	10,532	10,156	5,604	2,411	2,534
MEAN	25.4	49.4	47.0	19.5	32.2	54.5	139	340	339	181	77.8	84.5
MAX	40	66	58	28	42	89	314	470	525	330	125	109
MIN	21	32	20	13	16	28	70	241	231	64	46	63
AC-FT	1,560	2,940	2,890	1,200	1,850	3,350	8,290	20,890	20,140	11,120	4,780	5,030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2004, BY WATER YEAR (WY)*

MEAN	83.2	76.0	47.0	34.4	56.8	148	240	481	626	240	88.9	75.1
MAX	268	271	185	115	414	1,053	664	894	1,781	605	233	298
(WY)	(1952)	(1990)	(1996)	(1990)	(1986)	(1972)	(1952)	(1954)	(2002)	(1951)	(1972)	(1911)
MIN	11.2	19.1	15.0	1.61	11.1	6.90	79.4	198	174	17.0	5.56	5.92
(WY)	(2002)	(2002)	(1984)	(1982)	(1985)	(1907)	(1984)	(1984)	(1992)	(1988)	(1988)	(1988)

06099000 CUT BANK CREEK AT CUT BANK, MT—Continued

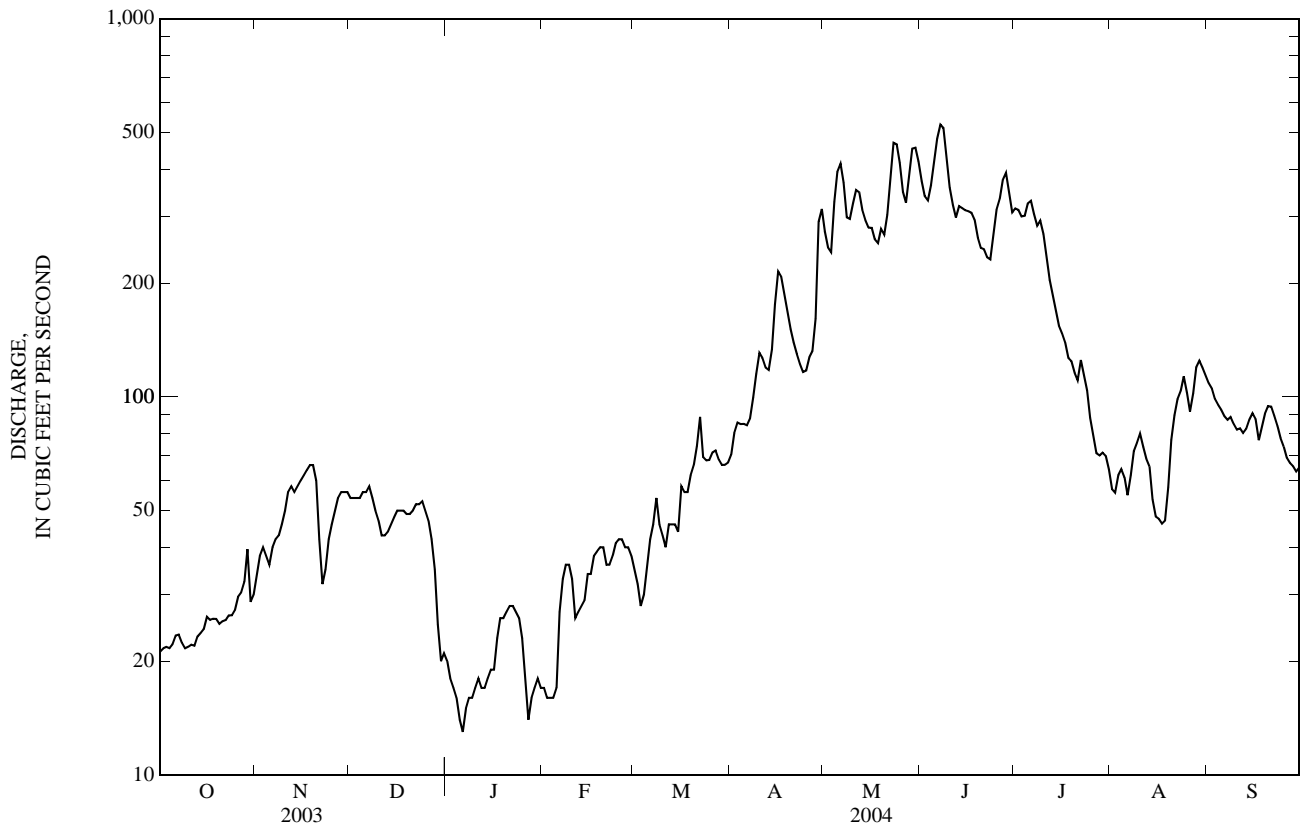
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1905 - 2004*	
ANNUAL TOTAL	42,795.3		42,367			
ANNUAL MEAN	117		116		182	
HIGHEST ANNUAL MEAN					317	
LOWEST ANNUAL MEAN					73.9	
HIGHEST DAILY MEAN	1,000	Mar 15	525	Jun 7	11,200	Jun 9, 1964
LOWEST DAILY MEAN	8.7	Sep 7	13	Jan 6	1.0	Jan 22, 1982
ANNUAL SEVEN-DAY MINIMUM	11	Sep 3	15	Jan 3	1.1	Jan 20, 1982
MAXIMUM PEAK FLOW			554	Jun 7	a16,600	Jun 9, 1964
MAXIMUM PEAK STAGE			3.44	Jun 7	13.93	Jun 9, 1964
INSTANTANEOUS LOW FLOW					b0.92	Sep 10, 1988
ANNUAL RUNOFF (AC-FT)	84,880		84,030		131,600	
10 PERCENT EXCEEDS	323		315		480	
50 PERCENT EXCEEDS	45		64		80	
90 PERCENT EXCEEDS	16		22		24	

*--During periods of operation (August 1905 to October 1919, May to July 1920, May 1922 to October 1924, May 1951 to September 1973, October 1981 to current year.

a--From rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow.

b--Gage height, 0.59 ft.

e--Estimated.



MARIAS RIVER BASIN

06099500 MARIAS RIVER NEAR SHELBY, MT

LOCATION.--Lat 48°25'38", long 111°53'20" (NAD 27), in SE¹/₄NW¹/₄SE¹/₄ sec.20, T.31 N., R.2 W., Toole County, Hydrologic Unit 10030203, on left bank 20 ft downstream from bridge on old U.S. Highway 91, 5.1 mi south of Shelby, 24 mi downstream from Cut Bank Creek, and at river mile 140.6.

DRAINAGE AREA.--3,242 mi², of which 518 mi² is probably noncontributing.

PERIOD OF RECORD.--April 1902 to December 1904, May 1905 to December 1906, May 1907 to January 1908, April 1911 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1903-4, 1918, 1921, 1933, 1935, 1947. WSP 1509: 1902, 1912(M), 1916, 1943(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,087.72 ft (NGVD 29). Prior to Dec. 23, 1947, nonrecording gage or water-stage recorder at several sites within 1,000 ft of present site at approximately the same elevation. Dec. 23, 1947, to Apr. 6, 1976, water-stage recorder at site 150 ft downstream at same elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by Lower Two Medicine Lake (station number 06090900), Four Horns Reservoir (station number 06093000) Swift Reservoir (station number 06094000), and Lake Frances (station number 06095500), having a combined capacity of 172,630 acre-ft. Diversions for irrigation of about 50,000 acres upstream from station and about 15,000 acres 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	141	e140	e310	e125	e90	e280	356	1,210	1,360	870	214	292
2	136	e155	e320	e115	e88	e270	442	1,180	1,230	843	212	283
3	133	e150	e320	e105	e86	e250	430	1,240	1,100	794	213	265
4	133	e130	e300	e105	e88	e280	406	1,470	1,100	748	229	252
5	136	e120	e300	e100	e90	e320	396	1,650	1,210	809	235	246
6	137	e125	e300	e95	e98	e340	434	1,790	1,320	858	216	240
7	136	e130	e300	e125	e120	e380	489	1,690	1,460	761	210	233
8	138	e140	e285	e140	e130	e440	534	1,580	1,770	703	212	232
9	140	e160	e235	e150	e140	e480	577	1,590	1,710	718	223	228
10	144	e210	e200	e150	e150	e460	602	1,620	1,480	694	228	225
11	151	e250	e180	e150	e150	e450	571	1,680	1,300	642	220	217
12	156	e230	e150	e150	e150	e400	539	1,710	1,190	568	212	216
13	168	e220	e160	e155	e160	e410	547	1,630	1,140	523	206	213
14	167	e225	e170	e160	e160	e350	630	1,620	1,100	461	214	218
15	172	e235	e180	e170	e180	e330	758	1,610	1,070	407	200	223
16	184	e240	e180	e160	e180	331	862	1,600	1,070	379	187	224
17	193	e270	e163	e140	e200	313	813	1,530	1,040	364	185	234
18	186	e280	e170	e140	e210	279	747	1,440	981	357	181	232
19	177	e270	e180	e150	e210	302	654	1,380	891	329	204	265
20	174	e230	e180	e150	e230	300	590	1,300	820	306	259	268
21	169	e200	e190	e140	e230	337	565	1,320	775	300	251	271
22	162	e170	e190	e150	e230	322	585	1,430	741	322	250	261
23	157	e145	e180	e150	e230	301	599	1,650	710	331	273	251
24	154	e130	e170	e120	e250	292	673	1,750	746	311	286	235
25	163	e160	e170	e100	e270	310	702	1,550	829	307	303	216
26	165	e190	e160	e90	e290	349	710	1,360	910	296	297	206
27	162	e210	e160	e86	e300	352	722	1,380	996	265	297	202
28	163	e240	e140	e88	e300	340	921	1,540	1,020	253	307	202
29	e160	e310	e130	e90	e300	323	1,300	1,640	950	251	313	198
30	e140	e320	e130	e92	---	306	1,280	1,620	868	243	302	186
31	e130	---	e130	e92	---	301	---	1,490	---	228	294	---
TOTAL	4,827	5,985	6,333	3,933	5,310	10,498	19,434	47,250	32,887	15,241	7,433	7,034
MEAN	156	200	204	127	183	339	648	1,524	1,096	492	240	234
MAX	193	320	320	170	300	480	1,300	1,790	1,770	870	313	292
MIN	130	120	130	86	86	250	356	1,180	710	228	181	186
AC-FT	9,570	11,870	12,560	7,800	10,530	20,820	38,550	93,720	65,230	30,230	14,740	13,950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2004, BY WATER YEAR (WY)*

MEAN	401	392	303	253	317	578	1,132	2,693	3,054	1,045	385	354
MAX	1,448	1,485	1,135	700	1,173	2,300	3,149	5,300	10,190	3,982	1,100	1,853
(WY)	(1952)	(1990)	(1996)	(1918)	(1986)	(1947)	(1934)	(1927)	(1948)	(1902)	(1927)	(1911)
MIN	73.8	116	103	41.9	58.7	139	280	711	409	147	67.1	66.4
(WY)	(2002)	(2002)	(1937)	(1937)	(1936)	(2002)	(1931)	(1977)	(1977)	(1940)	(1988)	(1988)

06099500 MARIAS RIVER NEAR SHELBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1902 - 2004*	
ANNUAL TOTAL	202,833		166,165			
ANNUAL MEAN	556		454		898	
HIGHEST ANNUAL MEAN					1,929	1927
LOWEST ANNUAL MEAN					302	1977
HIGHEST DAILY MEAN	3,110	May 27	1,790	May 6	109,000	Jun 9, 1964
LOWEST DAILY MEAN	70	Sep 4	86	Jan 27	10	Aug 20, 1919
ANNUAL SEVEN-DAY MINIMUM	71	Sep 3	89	Jan 27	21	Jan 25, 1937
MAXIMUM PEAK FLOW			1,840	Jun 8	a241,000	Jun 9, 1964
MAXIMUM PEAK STAGE			5.15	Jun 8	b23.64	Jun 9, 1964
INSTANTANEOUS LOW FLOW					c10	Aug 20, 1919
ANNUAL RUNOFF (AC-FT)	402,300		329,600		650,500	
10 PERCENT EXCEEDS	1,530		1,290		2,300	
50 PERCENT EXCEEDS	240		256		399	
90 PERCENT EXCEEDS	118		136		156	

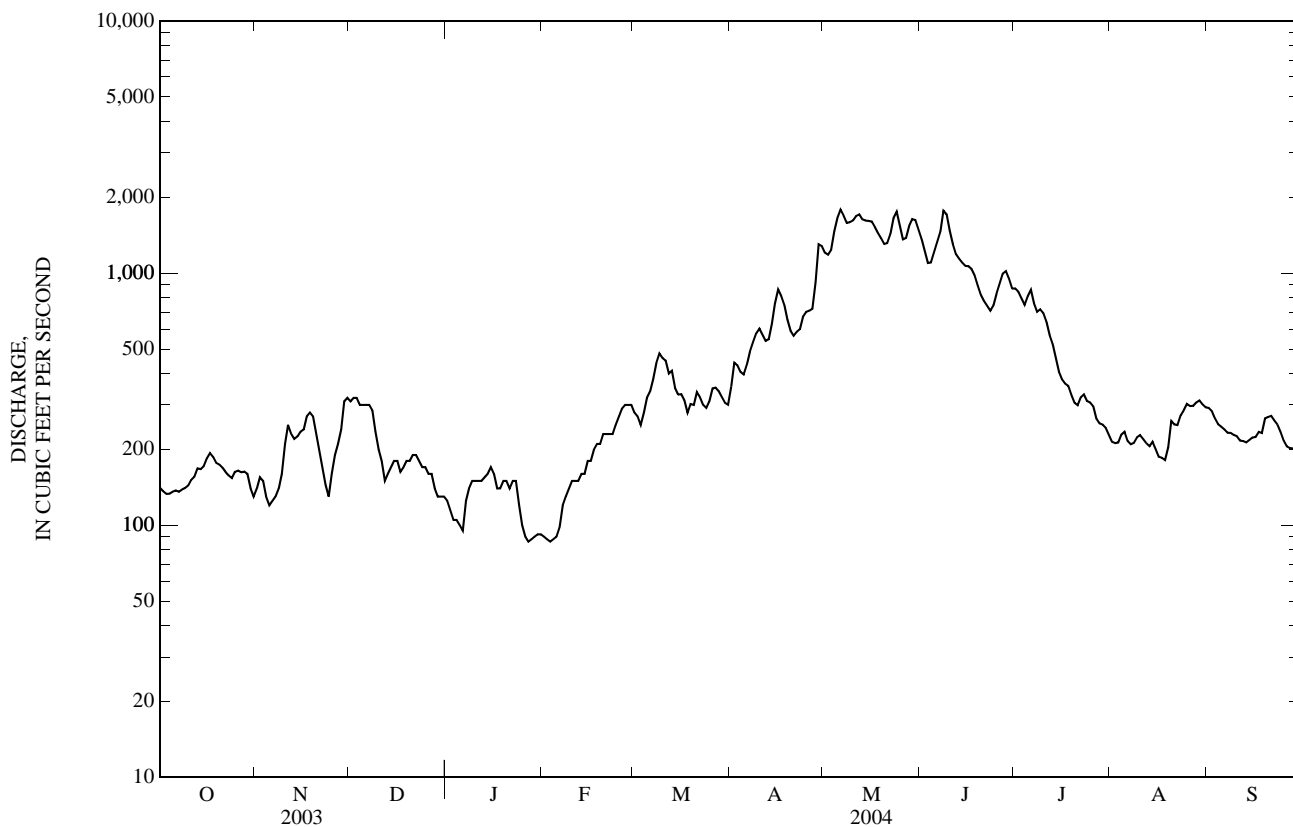
*--During periods of operation (1903-04, 1906, 1912 to current year).

a--Largely due to the failure of Swift Dam, from slope-area measurement of peak flow. Maximum unaffected by dam failure, 75,000 ft³/s, June 20, 1975, gage height, 18.21 ft.

b--From floodmark.

c--Observed, site and datum in use.

e--Estimated.



06101500 MARIAS RIVER NEAR CHESTER, MT

LOCATION.--Lat 48°18'23", long 111°04'47" (NAD 27), in SW¹/₄SW¹/₄SW¹/₄ sec.34, T.30 N., R.5 E., Liberty County, Hydrologic Unit 10030203, on left bank 2.0 mi downstream from Tiber Dam, 4.4 mi upstream from Pondera Coulee, 15 mi southwest of Chester, and at river mile 78.3.

DRAINAGE AREA.--4,927 mi², of which 518 mi² is probably noncontributing.

PERIOD OF RECORD.--April to September 1921, October 1945 to September 1947, October 1955 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,814.03 ft (NGVD) (Bureau of Reclamation bench mark). Prior to Oct. 1, 1921, nonrecording gage at bridge 2.5 mi downstream at different elevation. Oct. 4, 1945, to Sept. 30, 1946, nonrecording gage at site 3 mi downstream at different elevation.

REMARKS.--Records good. Flow completely regulated by Lake Elwell since Oct. 28, 1955 (see preceding page). 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 1948 reached a stage of 16 ft, present elevation.

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	503	492	514	e514	e505	503	502	508	547	503	487	498
2	503	492	514	e514	e505	502	503	508	659	502	488	503
3	503	495	512	e514	e400	503	505	501	526	503	491	503
4	503	497	513	e514	e320	503	503	506	533	503	482	503
5	503	497	515	e514	502	503	503	502	507	503	484	503
6	503	495	516	e514	503	498	502	499	505	503	485	503
7	503	499	515	e514	503	502	503	507	509	502	487	503
8	503	497	515	e514	503	502	503	509	509	503	487	503
9	502	497	515	e514	505	500	501	509	511	503	487	503
10	502	497	515	e514	504	502	503	514	524	497	487	503
11	502	496	514	e510	505	503	503	512	507	491	487	503
12	501	496	514	e510	504	501	503	512	508	492	488	503
13	501	495	520	e510	503	500	503	514	506	493	488	503
14	499	497	519	e510	503	502	503	514	504	492	489	505
15	497	497	519	e510	503	502	503	514	504	492	494	503
16	497	497	519	e510	503	502	503	517	507	492	489	503
17	496	497	516	e510	503	501	503	514	513	492	487	503
18	495	500	515	e510	503	502	503	518	507	492	489	503
19	496	504	514	e510	503	499	503	516	508	492	494	504
20	454	503	514	e510	503	503	503	515	507	491	489	507
21	310	507	514	e510	503	503	503	518	507	492	495	508
22	487	511	514	e510	503	503	504	518	503	492	499	508
23	483	508	514	e510	503	502	505	517	493	494	502	508
24	481	508	514	e510	503	501	503	518	495	494	498	508
25	482	508	514	e510	503	503	503	519	501	492	498	508
26	481	508	514	e505	503	502	503	520	502	492	497	508
27	481	508	514	e505	503	502	504	520	504	490	497	509
28	490	511	514	e505	503	501	504	526	503	487	497	508
29	492	514	514	e505	503	503	506	531	503	487	497	508
30	490	514	514	e505	---	503	505	545	504	480	497	508
31	492	---	e514	e505	---	501	---	549	---	483	498	---
TOTAL	15,135	15,037	15,962	15,820	14,310	15,557	15,098	15,990	15,416	15,324	15,234	15,143
MEAN	488	501	515	510	493	502	503	516	514	494	491	505
MAX	503	514	520	514	505	503	506	549	659	503	502	509
MIN	310	492	512	505	320	498	501	499	493	480	482	498
AC-FT	30,020	29,830	31,660	31,380	28,380	30,860	29,950	31,720	30,580	30,400	30,220	30,040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY)*

MEAN	729	588	445	406	441	600	804	1,207	1,678	1,219	916	843
MAX	2,758	1,733	1,050	1,079	1,068	2,400	2,343	3,541	6,254	5,325	2,909	3,063
(WY)	(1966)	(1986)	(1990)	(1990)	(1990)	(1947)	(1996)	(1947)	(1964)	(1975)	(1964)	(1965)
MIN	208	0.40	15.7	35.0	35.0	47.7	46.1	51.0	58.9	57.5	82.5	173
(WY)	(1983)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1921)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1921 - 2004*

ANNUAL TOTAL	190,901	184,026	
ANNUAL MEAN	523	503	822
HIGHEST ANNUAL MEAN			1,488
LOWEST ANNUAL MEAN			97.5
HIGHEST DAILY MEAN	649	Jun 20	659
LOWEST DAILY MEAN	310	Oct 21	310
ANNUAL SEVEN-DAY MINIMUM	454	Oct 20	454
MAXIMUM PEAK FLOW			1,100
MAXIMUM PEAK STAGE			4.26
INSTANTANEOUS LOW FLOW			
ANNUAL RUNOFF (AC-FT)	378,700	365,000	595,700
10 PERCENT EXCEEDS	633	514	1,610
50 PERCENT EXCEEDS	503	503	540
90 PERCENT EXCEEDS	486	491	222

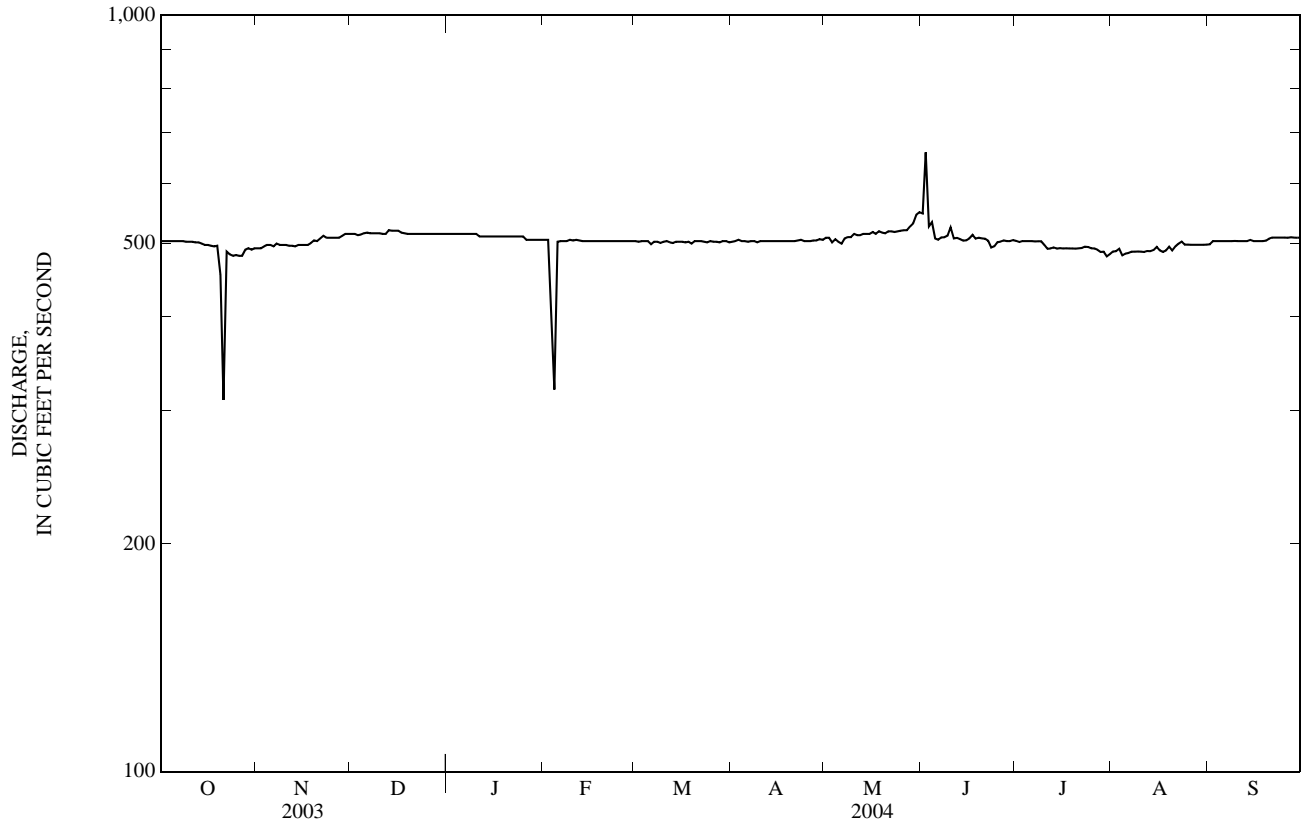
*--During period of operation (April to September 1921, October 1945 to September 1947, October 1955 to current year).

a--Since dam completion. Maximum discharge not determined; occurred about March 20, 1947.

b--Probably less than; during Tiber Dam shutdown.

e--Estimated.

06101500 MARIAS RIVER NEAR CHESTER, MT—Continued



MARIAS RIVER BASIN

06102050 MARIAS RIVER NEAR LOMA, MT

LOCATION.--Lat 47°55'59", long 111°31'02" (NAD 27) , in SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.12, T.25 N., R.9 E., Choteau County, Hydrologic Unit 10030203, on left bank 600 ft upstream from Teton River, 800 ft upstream from highway bridge, 0.2 mi southwest of Loma, and at river mile 2.5.

DRAINAGE AREA.--7,137 mi², of which 518 mi² is probably noncontributing.

PERIOD OF RECORD.--October 1959 to September 1972, June 2001 to current year (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,570 ft (NGVD 29). Prior to June 2001, water-stage recorder at site 4.5 mi upstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow completely regulated by Lake Elwell. Numerous 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	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				493	519	536	475	445	490	e510		
2				502	520	517	464	454	483	e510		
3				490	523	546	450	459	479	e510		
4				497	516	562	457	473	467	e510		
5				497	504	497	470	473	479	e510		
6				496	496	557	453	448	486	e510		
7				494	485	503	443	453	482	e510		
8				481	493	492	446	467	491	e510		
9				483	509	497	456	468	493	e510		
10				489	498	495	466	470	491	e515		
11				489	495	506	464	473	489	e515		
12				490	512	503	469	464	493	e515		
13				491	532	490	466	458	e495	e515		
14				489	530	466	459	464	e495	e515		
15				488	528	462	456	461	e495	518		
16				492	505	465	456	472	e500	518		
17				495	498	514	446	466	e500	504		
18				492	493	491	441	458	e500	503		
19				495	505	481	438	454	e500	501		
20				495	527	474	441	462	e500	498		
21				492	524	485	438	466	e500	506		
22				492	511	481	433	457	e505	499		
23				497	526	463	442	497	e505	502		
24				500	633	453	432	546	e505	503		
25				499	609	457	433	491	e505	498		
26				502	532	463	457	482	e510	499		
27				509	532	461	442	495	e510	497		
28				514	534	461	437	489	e510	496		
29				519	537	467	447	480	e510	496		
30				518	536	473	452	491	e510	495		
31				---	522	---	450	483	---	497		
TOTAL MEAN				14,880	16,184	14,718	13,979	14,619	14,878	15,695		
MAX				496	522	491	451	472	496	506		
MIN				519	633	562	475	546	510	518		
AC-FT				481	485	453	432	445	467	495		
				29,510	32,100	29,190	27,730	29,000	29,510	31,130		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1972, AND 2001 - 2004 SEASONS

	298	434	568	830	1,226	2,047	1,293	1,114	1,038	878	723	402
MEAN	298	434	568	830	1,226	2,047	1,293	1,114	1,038	878	723	402
MAX	517	910	1,290	2,184	2,175	6,018	2,990	3,040	3,258	2,750	1,580	908
(WY)	(1968)	(1968)	(1967)	(1972)	(1972)	(1964)	(2002)	(1965)	(1965)	(1966)	(1966)	(1968)
MIN	105	110	117	180	441	491	250	137	296	292	78.5	107
(WY)	(1964)	(1964)	(1964)	(1961)	(2002)	(2004)	(1962)	(1961)	(2001)	(1964)	(1963)	(1963)

SUMMARY STATISTICS

FOR THE 2004 SEASON

WATER YEARS 1960 - 1972

SEASONS 2001 - 2004

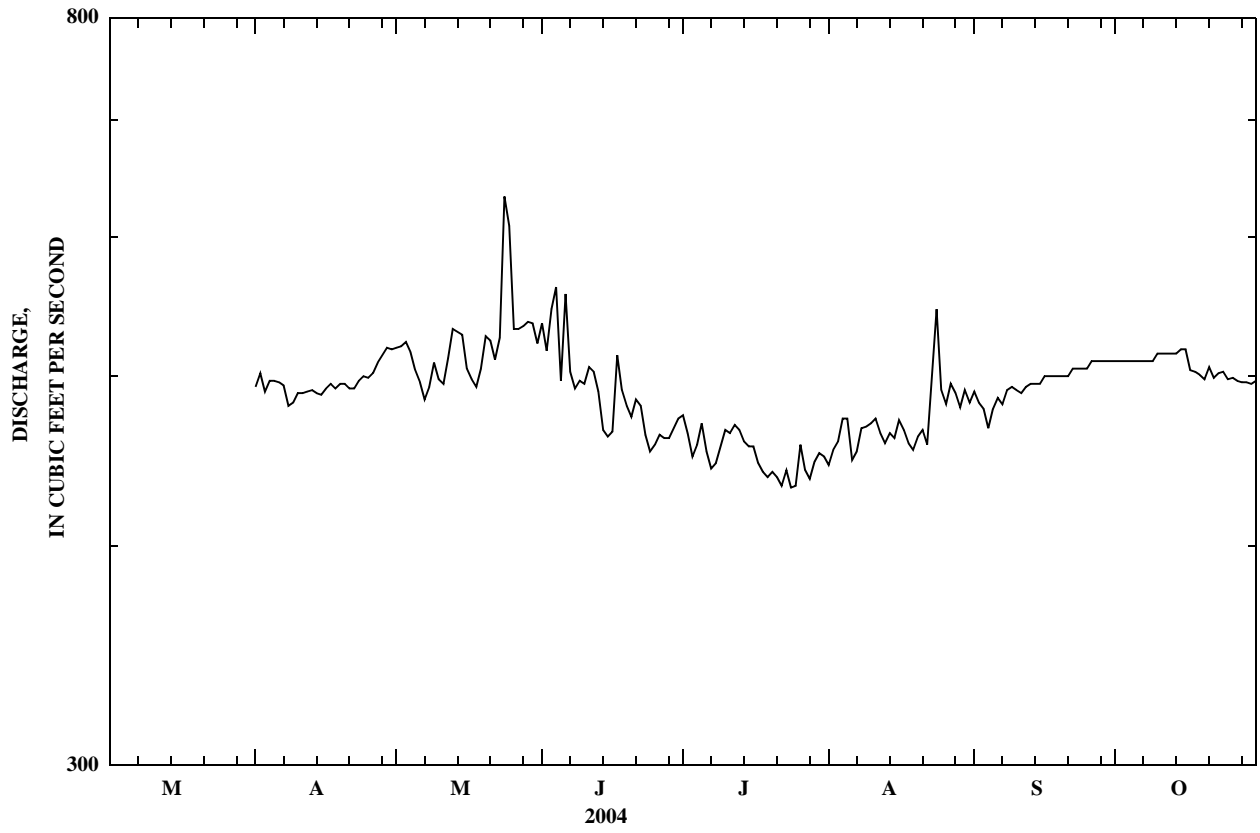
ANNUAL MEAN							977					
HIGHEST ANNUAL MEAN							1,330		1967			
LOWEST ANNUAL MEAN							522		1963			
HIGHEST DAILY MEAN				633		May 24	10,300		Jun 16, 1964	5,250		Jun 23, 2002
LOWEST DAILY MEAN				432		Jul 24	45		Dec 11, 1962	220		Apr 1, 2002
ANNUAL SEVEN-DAY MAXIMUM							49		Dec 5, 1962			
MAXIMUM PEAK FLOW				741		Jun 3	10,800		Jun 16, 1964	5,250		Jun 23, 2002
MAXIMUM PEAK STAGE				1.61		Jun 3	a8.72		Jun 16, 1964	b5.29		Jun 24, 2002
ANNUAL RUNOFF (AC-FT)							707,900					
10 PERCENT EXCEEDS							1,940					
50 PERCENT EXCEEDS							800					
90 PERCENT EXCEEDS							180					

a--Site and datum then in use.

b--From highwater mark.

e--Estimated.

06102050 MARIAS RIVER NEAR LOMA, MT—Continued



MARIAS RIVER BASIN

06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT

LOCATION.--Lat 47°52'59", long 112°36'40" (NAD 27), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.34, T.25 N., R.8 W., Teton County, Hydrologic Unit 10030205, on right bank at county road bridge, 1.1 mi downstream from South Fork, 7.6 mi southwest of Bynum Reservoir, 20 mi northwest of Choteau, and at river mile 194.7.

DRAINAGE AREA.--105 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1947 to October 1954 (published as "near Farmington"), June 1998 to current year, seasonal records only.

GAGE.--Water-stage recorder. Elevation of gage is 4,770 ft (NGVD 29). June 1947 to October 1954, water-stage recorder 300 ft downstream at different elevation.

REMARKS.--Seasonal water-discharge records good except those for estimated daily discharges, which are poor. Negligible diversion 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 54,600 ft³/s, from 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				51	e130	229	177	88	78	68		
2				50	e150	232	170	89	78	64		
3				50	173	248	167	91	77	64		
4				51	208	278	166	96	76	64		
5				53	e280	309	166	93	75	63		
6				56	e260	351	155	91	75	63		
7				63	e240	330	156	92	75	62		
8				72	e250	292	156	91	74	63		
9				71	e240	257	146	89	73	62		
10				69	e220	237	140	87	73	62		
11				68	e210	228	146	85	73	62		
12				70	e190	227	135	84	73	60		
13				79	e175	222	129	83	73	60		
14				90	e160	217	123	82	72	60		
15				96	e155	204	120	81	72	66		
16				92	e150	193	118	81	72	65		
17				91	e160	187	114	80	71	67		
18				87	e170	178	117	93	72	65		
19				86	e180	171	114	86	73	64		
20				84	e200	163	110	83	74	64		
21				83	221	158	107	80	72	63		
22				84	234	161	106	80	70	62		
23				88	234	171	102	85	70	62		
24				93	227	187	99	84	69	62		
25				95	224	193	96	81	69	61		
26				99	228	202	94	82	69	61		
27				116	237	191	96	80	68	60		
28				149	251	179	95	79	68	60		
29				135	252	176	93	78	68	60		
30				134	241	179	91	78	68	59		
31				---	234	---	89	77	---	60		
TOTAL				2,505	6,484	6,550	3,893	2,629	2,170	1,938		
MEAN				83.5	209	218	126	84.8	72.3	62.5		
MAX				149	280	351	177	96	78	68		
MIN				50	130	158	89	77	68	59		
AC-FT				4,970	12,860	12,990	7,720	5,210	4,300	3,840		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1954 AND SEASONS 1998 - 2004*

MEAN	47.9	46.3	45.1	81.6	306	475	222	108	83.7	78.0	68.6	56.9
MAX	59.0	59.0	48.9	142	516	1,178	468	182	134	133	89.8	68.2
(WY)	(1952)	(1952)	(1952)	(1952)	(1951)	(1953)	(1951)	(1951)	(1951)	(1952)	(1952)	(1951)
MIN	24.9	25.1	36.5	45.0	195	218	92.9	61.8	57.3	54.6	44.0	40.7
(WY)	(1950)	(1949)	(1950)	(2001)	(2001)	(2004)	(2003)	(1949)	(1949)	(1950)	(1950)	(1950)

06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT—Continued

SUMMARY STATISTICS	FOR 2004 SEASON		WATER YEARS 1947 - 1954*		SEASONS 1998 - 2004*	
ANNUAL MEAN			166			
HIGHEST ANNUAL MEAN			225	1953		
LOWEST ANNUAL MEAN			92.9	1949		
HIGHEST DAILY MEAN	351	Jun 6	2,380	Jun 5, 1948	1,160	Jun 17, 2002
LOWEST DAILY MEAN	50	Apr 2	20	Jan 24, 1949	36	Apr 13, 2001
ANNUAL SEVEN-DAY MINIMUM			22	Jan 24, 1949		
MAXIMUM PEAK FLOW	379	Jun 6	b2,780	Jun 3, 1948	1,280	Jun 17, 2002
MAXIMUM PEAK STAGE	4.87	Jun 6	c7.34	Jan 6, 1950	5.78	Jun 17, 2002
INSTANTANEOUS LOW FLOW	a48	Apr 1	d12	Mar 28, 1951	f35	Apr 15, 2001
ANNUAL RUNOFF (AC-FT)			119,900			
10 PERCENT EXCEEDS			418			
50 PERCENT EXCEEDS			80			
90 PERCENT EXCEEDS			43			

*--During periods of operation (June 1947 to October 1954, June 1998 to current year; seasonal records beginning 1998).

a--Gage height, 3.65 ft.

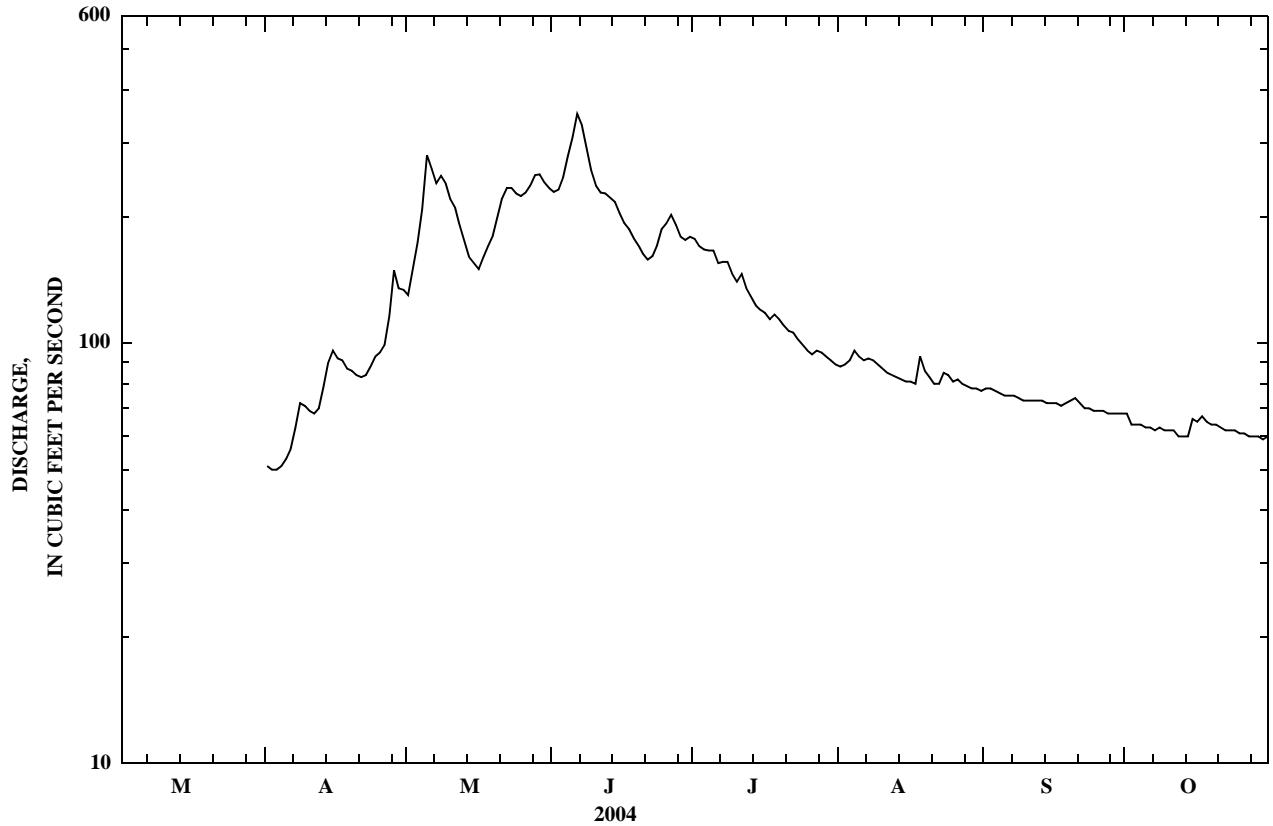
b--From rating curve extended above 1,100 ft³/s, gage height, 5.32 ft, previous site and datum.

c--Backwater from ice, previous site and datum.

d--Gage height, 2.82 ft, previous site and datum.

e--Estimated.

f--Gage height, 3.71 ft.



06102500 TETON RIVER BELOW SOUTH FORK, NEAR CHOTEAU, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 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)	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)
OCT 21...	1500	55	8.4	378	22.0	11.0	E.005	.031	<.002	<.03
JAN 13...	0945	44	8.3	394	5.0	2.5	.011	.058	<.002	.07
MAR 23...	1145	47	8.4	378	13.0	5.5	E.008	.044	<.002	.06
APR 19...	1650	83	8.4	353	11.0	8.5	E.008	.028	E.001	.07
MAY 17...	1400	160	8.4	320	14.0	9.5	E.005	.024	E.001	.07
JUN 22...	1210	164	8.4	332	16.0	8.5	<.010	.024	E.001	.05
JUL 21...	1030	110	8.5	352	20.0	11.0	<.010	.049	<.002	.04
AUG 17...	1250	80	8.4	370	26.0	14.0	E.005	E.015	<.002	<.03
SEP 07...	1130	77	8.4	372	17.0	8.0	.013	.075	E.001	.04

E--Estimated.

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 21...	<.006	<.004	.5	35	20	3.0
JAN 13...	<.006	<.004	.7	81	8	.95
MAR 23...	<.006	<.004	.7	89	8	1.0
APR 19...	<.006	<.004	.7	67	15	3.4
MAY 17...	<.006	<.004	E.4	60	6	2.6
JUN 22...	<.006	E.002	.4	82	16	7.1
JUL 21...	<.006	<.004	.4	89	4	1.2
AUG 17...	<.006	.004	.7	82	15	3.2
SEP 07...	<.006	<.004	.8	82	13	2.7

E--Estimated.

06108000 TETON RIVER NEAR DUTTON, MT

LOCATION.--Lat 47°55'49", long 111°33'07" (NAD 27), in SE¹/₄SW¹/₄SW¹/₄ sec.12, T.25 N., R.1 E., Teton County, Hydrologic Unit 10030205, on right bank 150 ft upstream from Kerr Bridge, 0.9 mi downstream from Hunt Coulee, 9.5 mi northeast of Dutton, and at river mile 100.9.

DRAINAGE AREA.--1,307 mi². Area at site used prior to July 17, 1965, 1,308 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 3,235 ft (NGVD 29). Prior to July 17, 1965, water-stage recorder at site 1,800 ft downstream at elevation 1.97 ft lower.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Water is diverted on left bank in sec.34, T.25 N., R.7 W., for storage in Bynum Reservoir (usable capacity, 75,000 acre-ft). Diversions for irrigation of about 44,000 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	11	e17	e22	e15	e18	e60	40	30	47	28	3.7	20
2	12	e18	e23	e14	e20	e55	43	31	44	28	2.6	21
3	13	e16	e22	e12	e20	e50	42	29	37	26	3.5	20
4	13	e15	e22	e10	e22	e55	44	26	33	27	9.9	20
5	13	e15	e25	e10	e26	e60	45	25	27	33	9.1	20
6	13	e16	e30	e12	e30	e65	45	25	24	31	8.3	18
7	13	e18	e28	e15	e33	68	44	22	21	29	6.5	18
8	13	e20	e26	e18	e35	73	43	20	22	29	5.1	18
9	12	e22	e24	e20	e35	69	42	20	28	25	5.3	18
10	11	e25	e19	e22	e35	72	39	18	41	20	6.2	20
11	12	e23	e17	e23	e32	80	37	20	45	17	6.4	19
12	11	e22	e18	e22	e35	87	36	30	45	15	4.8	18
13	12	e22	e20	e20	e40	58	34	36	42	15	2.8	19
14	13	e23	e20	e21	e40	50	31	39	38	14	1.8	20
15	15	e24	e20	e23	e42	43	31	42	30	12	1.6	20
16	18	e25	e20	e22	e45	41	34	43	26	9.5	3.5	20
17	19	e26	e20	e20	e50	38	34	42	26	6.4	3.9	19
18	20	e28	e21	e20	e48	37	31	43	27	7.3	6.5	19
19	20	e30	e23	e22	e45	38	30	45	30	4.3	9.2	19
20	19	e25	e25	e20	e42	37	27	42	35	2.5	12	21
21	18	e20	e22	e20	e40	36	25	44	40	3.7	13	22
22	19	e17	e20	e22	e40	36	24	45	43	2.7	11	24
23	19	e20	e20	e24	e42	36	23	55	45	3.9	21	26
24	18	e20	e23	e20	e45	36	22	74	43	4.0	25	24
25	17	e20	e20	e17	e50	36	22	121	43	3.0	22	22
26	23	e21	e19	e15	e56	36	20	155	41	3.1	21	21
27	21	e22	e18	e13	e60	35	19	126	40	2.7	23	18
28	18	e23	e17	e15	e65	35	23	96	36	1.4	22	17
29	e16	e25	e16	e18	e60	34	26	75	36	2.8	21	17
30	e15	e22	e14	e20	---	33	28	63	30	3.6	21	17
31	e15	---	e16	e18	---	34	---	51	---	4.1	20	---
TOTAL	482	640	650	563	1,151	1,523	984	1,533	1,065	414.0	332.7	595
MEAN	15.5	21.3	21.0	18.2	39.7	49.1	32.8	49.5	35.5	13.4	10.7	19.8
MAX	23	30	30	24	65	87	45	155	47	33	25	26
MIN	11	15	14	10	18	33	19	18	21	1.4	1.6	17
AC-FT	956	1,270	1,290	1,120	2,280	3,020	1,950	3,040	2,110	821	660	1,180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2004, BY WATER YEAR (WY)

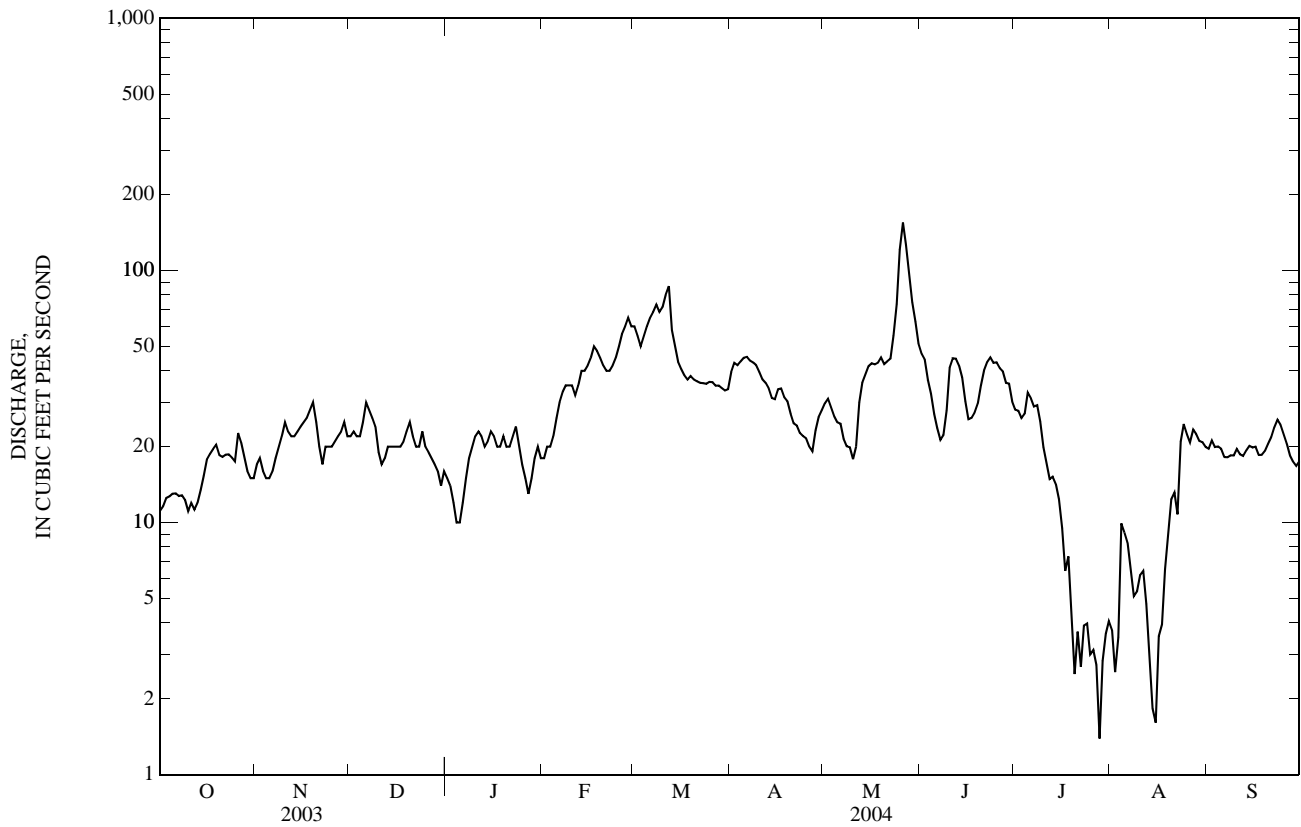
MEAN	68.7	69.6	63.2	54.4	84.6	180	156	241	378	154	71.5	64.0
MAX	223	176	209	167	388	819	495	957	2,727	551	263	211
(WY)	(1966)	(1976)	(1960)	(1976)	(1986)	(1969)	(1965)	(1976)	(1964)	(1958)	(1972)	(1993)
MIN	15.4	18.5	14.8	13.2	15.2	28.8	32.8	20.1	16.9	1.30	0.00	7.39
(WY)	(2002)	(2002)	(2001)	(1985)	(1985)	(2002)	(2004)	(2000)	(1988)	(1985)	(1988)	(2001)

MARIAS RIVER BASIN

06108000 TETON RIVER NEAR DUTTON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1954 - 2004	
ANNUAL TOTAL	16,194.96		9,932.7			
ANNUAL MEAN	44.4		27.1		132	
HIGHEST ANNUAL MEAN					350	
LOWEST ANNUAL MEAN					26.9	
HIGHEST DAILY MEAN	504	Mar 16	155	May 26	20,000	Jun 9, 1964
LOWEST DAILY MEAN	0.00	Jul 26	1.4	Jul 28	0.00	Jul 21, 1984
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 26	2.9	Jul 24	0.00	Jul 21, 1984
MAXIMUM PEAK FLOW			168	May 25	b71,300	Jun 9, 1964
MAXIMUM PEAK STAGE			2.22	May 25	c20.48	Jun 9, 1964
INSTANTANEOUS LOW FLOW			a0.66	Jul 28	d0.00	Jul 21, 1984
ANNUAL RUNOFF (AC-FT)	32,120		19,700		95,650	
10 PERCENT EXCEEDS	106		45		262	
50 PERCENT EXCEEDS	25		22		69	
90 PERCENT EXCEEDS	2.1		10		21	

a--Gage height, 0.56 ft.
 b--From slope-area measurement of peak flow.
 c--From floodmark.
 d--No flow at times on many years.
 e--Estimated.



06108000 TETON RIVER NEAR DUTTON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 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)	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)
OCT 22...	0845	18	8.5	976	7.0	10.5	E.007	<.016	E.001	.23
JAN 13...	1230	21	8.4	910	7.0	.0	.040	.805	.006	.98
MAR 23...	1440	36	8.5	797	20.0	9.5	E.008	.106	.002	.33
APR 20...	0850	28	8.6	822	11.5	8.5	E.006	<.016	E.001	.21
MAY 17...	1820	43	8.5	885	18.0	19.0	E.006	<.016	E.001	.50
JUN 22...	1600	43	8.5	810	21.0	21.5	<.010	<.016	<.002	.41
JUL 20...	1600	2.7	8.6	820	30.0	25.0	E.009	E.010	<.002	.46
AUG 17...	1710	4.3	8.5	860	29.0	25.0	<.010	.028	E.001	.34
SEP 07...	1400	18	8.5	788	18.0	16.0	.010	.060	<.002	.31

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 22...	<.006	.023	.7	92	51	2.5
JAN 13...	<.006	.007	1.0	58	25	1.4
MAR 23...	<.006	.019	.8	96	33	3.2
APR 20...	<.006	.019	.6	85	42	3.2
MAY 17...	<.006	.031	.7	94	73	8.5
JUN 22...	<.006	.036	.7	99	83	9.6
JUL 20...	<.006	.048	.7	99	45	.33
AUG 17...	E.003	.032	.6	100	26	.30
SEP 07...	<.006	.024	.8	94	54	2.6

E--Estimated.

MARIAS RIVER BASIN

06108800 TETON RIVER AT LOMA, MT

LOCATION.--Lat 47°55'57", long 110°30'49" (NAD 27), in NW¼SW¼SE¼ sec.12, T.25 N., R.9 E., Choteau County, Hydrologic Unit 10030205, on left bank 25 ft downstream from county bridge, 0.5 mi southwest of Loma, and at river mile 0.3.

DRAINAGE AREA.--2,010 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1998 to current year. Prior to October 1, 1999, seasonal records only.

GAGE.--Water-stage recorder. Elevation of gage is 2,560 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. U. S. Geological Survey satellite telemeter at station. Numerous diversions upstream from station for irrigation.

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	e12	e5.0	e3.5	e40	37	5.3	52	13	0.00	0.00
2	0.00	0.00	e12	e4.0	e3.5	e38	40	5.8	46	9.0	0.00	0.00
3	0.00	0.00	e12	e3.0	e3.5	e35	38	12	42	7.6	0.00	0.00
4	0.00	0.00	e12	e2.0	e3.5	e38	39	15	39	6.6	0.00	0.00
5	0.00	0.00	e12	e2.5	e4.0	e40	39	17	36	9.4	0.00	0.00
6	0.00	0.00	e13	e2.5	e4.0	e45	38	14	33	5.2	0.00	0.00
7	0.00	0.00	e14	e2.5	e4.0	e50	39	11	32	3.3	0.00	0.00
8	0.00	0.00	e13	e3.0	e5.0	e55	40	10	30	3.0	0.00	0.00
9	0.00	0.00	e12	e3.0	e5.0	e60	40	10	25	5.0	0.00	0.00
10	0.00	0.00	e11	e3.0	e5.0	e65	39	9.7	27	4.7	0.00	0.00
11	0.00	0.00	e10	e3.0	e5.0	e70	38	11	31	4.2	0.00	0.00
12	0.00	0.00	e9.0	e3.5	e6.0	71	36	14	32	3.7	0.00	0.00
13	0.00	0.07	e10	e3.5	e6.0	76	32	14	39	1.6	0.00	0.00
14	0.00	5.1	e10	e3.5	e6.0	84	22	13	38	0.73	0.00	0.00
15	0.00	7.5	e10	e3.5	e7.0	70	19	12	35	0.44	0.00	0.00
16	0.00	9.0	e10	e3.5	e8.0	62	20	19	31	0.33	0.00	0.00
17	0.00	10	e10	e3.5	e10	56	17	21	30	0.27	0.00	0.00
18	0.00	15	e10	e3.5	e20	51	15	19	27	0.15	0.00	0.00
19	0.00	20	e10	e3.5	e30	47	16	21	24	0.02	0.00	0.00
20	0.00	19	e10	e3.5	e28	43	19	20	24	0.00	0.00	0.00
21	0.00	7.3	e11	e3.5	e25	42	16	26	23	0.00	0.00	0.00
22	0.00	e7.0	e10	e3.5	e25	41	13	33	26	0.00	0.00	0.76
23	0.00	e10	e10	e3.5	e28	40	10	41	28	0.00	0.00	2.5
24	0.00	e11	e10	e3.0	e30	39	7.8	53	32	0.00	0.00	1.7
25	0.00	e11	e10	e3.0	e30	37	6.0	52	31	0.00	0.00	1.9
26	0.00	e11	e9.0	e3.0	e35	37	4.9	56	34	0.00	0.00	3.1
27	0.00	e12	e8.0	e3.0	e35	35	4.5	75	31	0.00	0.00	4.1
28	0.00	e12	e7.0	e3.0	e35	34	6.6	93	31	0.00	0.00	4.9
29	0.00	e12	e6.0	e3.0	e35	33	8.3	86	27	0.00	0.00	6.0
30	0.00	e13	e5.0	e3.5	---	33	5.4	74	18	0.00	0.00	5.9
31	0.00	---	e5.5	e3.5	---	32	---	61	---	0.00	0.00	---
TOTAL	0.00	191.97	313.5	100.5	445.0	1,499	705.5	923.8	954	78.24	0.00	30.86
MEAN	0.00	6.40	10.1	3.24	15.3	48.4	23.5	29.8	31.8	2.52	0.00	1.03
MAX	0.00	20	14	5.0	35	84	40	93	52	13	0.00	6.0
MIN	0.00	0.00	5.0	2.0	3.5	32	4.5	5.3	18	0.00	0.00	0.00
AC-FT	0.00	381	622	199	883	2,970	1,400	1,830	1,890	155	0.00	61

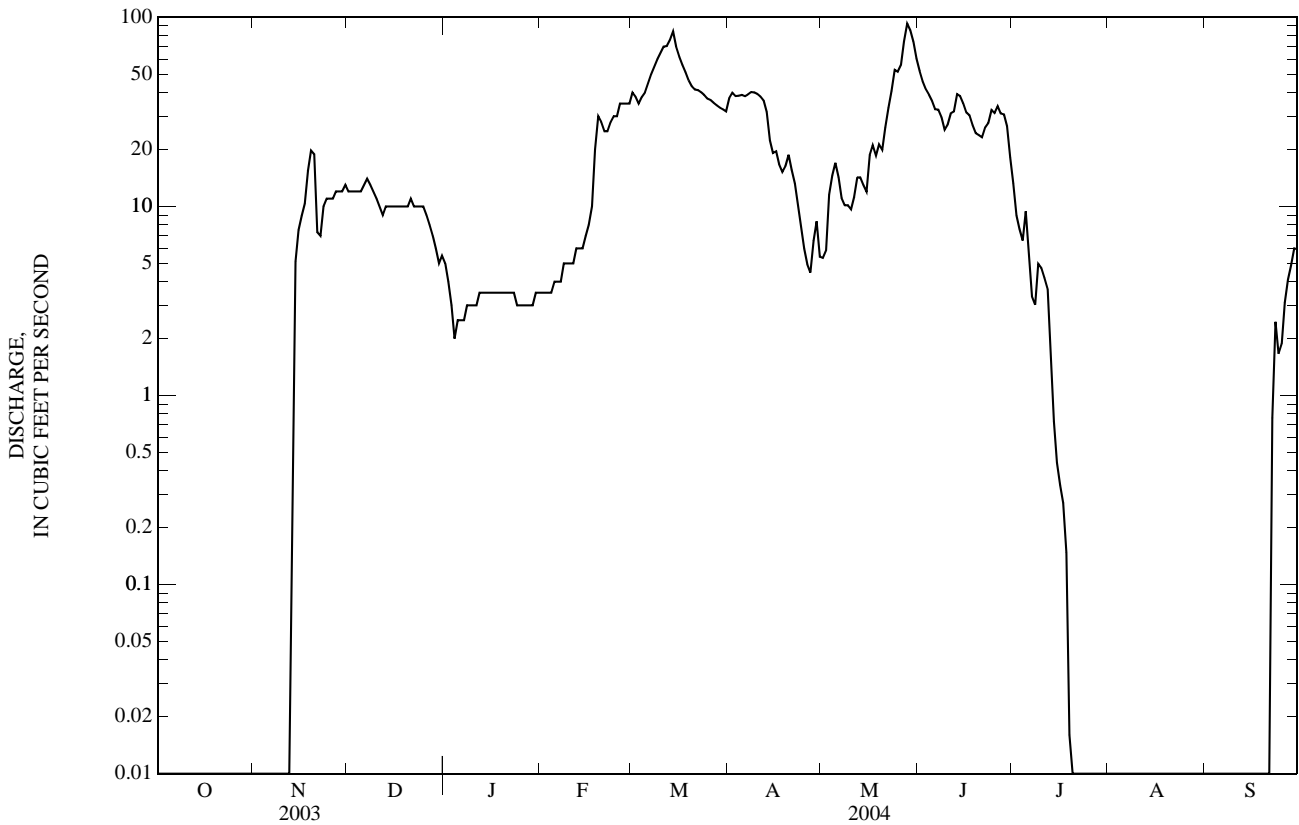
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2004, BY WATER YEAR (WY)

MEAN	14.8	19.7	18.1	14.6	21.8	65.2	64.5	39.8	113	33.1	11.7	8.52
MAX	30.6	44.0	39.5	35.0	31.6	109	109	74.8	304	151	62.6	24.8
(WY)	(2003)	(2003)	(2000)	(2000)	(2000)	(2003)	(2003)	(1999)	(2002)	(1998)	(1998)	(1999)
MIN	0.00	0.00	0.82	3.24	14.8	20.2	23.5	10.2	4.98	2.48	0.00	0.00
(WY)	(2002)	(2002)	(2002)	(2004)	(2001)	(2002)	(2004)	(2000)	(2001)	(2000)	(2000)	(2000)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1998 - 2004	
ANNUAL TOTAL	12,673.73		5,242.37			
ANNUAL MEAN	34.7		14.3		28.7	
HIGHEST ANNUAL MEAN					42.6	
LOWEST ANNUAL MEAN					14.3	
HIGHEST DAILY MEAN	430	Mar 17	93	May 28	1,740	Jun 13, 2002
LOWEST DAILY MEAN	0.00	Jul 11	0.00	Oct 1	0.00	Jul 30, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 11	0.00	Oct 1	0.00	Jul 30, 1999
MAXIMUM PEAK FLOW			a98	Mar 14	c2,000	Jun 13, 2002
MAXIMUM PEAK STAGE			b3.42	Feb 23	d6.98	Mar 16, 2003
ANNUAL RUNOFF (AC-FT)	25,140		10,400		20,790	
10 PERCENT EXCEEDS	102		39		66	
50 PERCENT EXCEEDS	17		6.0		14	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a--Gage height, 2.28 ft.
 b--Backwater from ice.
 c--Gage height, 5.87 ft.
 d--Backwater from ice, from floodmarks.
 e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1965, May 1998 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1999 to September 2003.

REMARKS.--No samples collected during July through September due to no flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (October 1999 to current year): Maximum, 35.5°C, July 13, 2002; minimum, 0.0°C on many days during winter months.

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

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specific conductance, water unfltrd 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, water unfltrd mg/L (62855)
JAN 13...	1510	3.4	8.1	1,410	8.0	.0	.016	.473	.003	.59
MAR 23...	1715	39	8.5	920	28.0	9.0	E.005	<.016	E.001	.23
APR 20...	1530	21	8.5	1,100	16.0	18.0	E.009	<.016	E.001	.25
MAY 18...	0920	18	8.6	1,110	12.0	13.0	<.010	<.016	E.001	.25
JUN 23...	1030	29	8.5	1,060	22.0	19.0	<.010	<.016	<.002	.34

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Selenium, water, unfltrd ug/L (01147)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN 13...	<.006	.006	1.9	37	9	.08
MAR 23...	<.006	.028	.9	99	49	5.2
APR 20...	<.006	.014	.9	90	50	2.8
MAY 18...	<.006	.011	.7	89	40	1.9
JUN 23...	<.006	.029	.8	99	65	5.1

E--Estimated.