

MISSOURI RIVER MAIN STEM

06131200 NELSON CREEK NEAR VAN NORMAN, MT

LOCATION.--Lat 47°32'08", long 106°09'11" (NAD 27), in SW¼ NW¼ sec.36, T.21 N., R.43 E., McCone County, Hydrologic Unit 10040104, on left bank at upstream side of bridge on State Highway 24, 1.5 mi upstream from Fort Peck Lake, and 19 mi northeast of Van Norman.

DRAINAGE AREA.--100 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1975 to September 1985, February 2000 to September 2004, (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,300 ft (NGVD 29).

REMARKS.--Records fair except those for estimated discharges, which are poor. Diversions for irrigation of about 163 acres upstream from station of which about 158 acres are flood irrigated. Some storage in stock ponds 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	0.00	0.01	e0.00	e0.00	0.00	e2.0	0.47	0.05	0.15	0.00	0.00	0.00
2	0.00	0.00	e0.00	e0.00	0.00	e1.0	0.45	0.05	0.12	0.00	0.00	0.00
3	0.00	0.00	e0.00	e0.00	0.00	e0.60	0.43	0.04	0.09	0.00	0.00	0.00
4	0.00	e0.00	e0.00	e0.00	0.00	e0.20	0.40	0.04	0.08	0.00	0.00	0.00
5	0.00	e0.00	e0.00	e0.00	0.00	e0.10	0.34	0.07	0.06	0.00	0.00	0.00
6	0.00	e0.00	e0.00	e0.00	0.00	e0.10	0.29	0.06	0.04	0.00	0.00	0.00
7	0.00	e0.00	e0.00	e0.00	0.00	e1.0	0.25	0.06	0.01	1.7	0.00	0.00
8	0.00	e0.00	e0.00	e0.00	0.00	e4.0	0.23	0.05	0.01	0.69	0.00	0.00
9	0.00	e0.00	0.00	e0.00	0.00	e40	0.20	0.05	0.01	0.05	0.00	0.00
10	0.00	e0.00	0.00	e0.00	0.00	e80	0.18	0.04	0.07	0.01	0.00	0.00
11	0.00	e0.00	0.00	e0.00	0.00	e20	0.16	0.06	0.31	0.00	0.00	0.00
12	0.00	e0.00	0.00	0.00	0.00	e40	0.16	0.12	0.21	0.00	0.00	0.00
13	0.00	e0.00	0.00	0.00	0.00	e30	0.15	0.11	0.27	0.00	0.00	0.00
14	0.00	e0.00	0.00	0.00	0.00	e12	0.13	0.09	0.21	0.00	0.00	0.00
15	0.00	e0.00	0.00	0.00	0.00	e10	0.13	0.07	0.13	0.00	0.00	0.00
16	0.00	e0.00	0.00	0.00	0.00	e10	0.13	0.05	0.08	0.00	0.00	0.00
17	0.00	e0.00	0.00	0.00	0.00	e8.0	0.13	0.05	0.21	0.00	0.00	0.00
18	0.00	e0.00	0.00	0.00	e0.05	e15	0.13	0.05	0.18	0.00	0.00	0.00
19	0.00	e0.00	0.00	0.00	e0.10	18	0.12	0.14	0.17	0.00	0.00	0.00
20	0.00	e0.00	0.00	0.00	e0.00	13	0.12	0.17	0.12	0.00	0.00	0.00
21	0.00	e0.00	0.00	0.00	e0.00	7.1	0.12	0.12	0.08	0.00	0.00	0.00
22	0.00	e0.00	0.00	0.00	e0.00	4.4	0.12	0.10	0.07	0.00	0.00	0.00
23	0.00	e0.00	0.00	0.00	e0.00	3.1	0.13	0.16	0.08	0.00	0.00	0.00
24	0.00	e0.00	0.00	0.00	e0.00	3.7	0.10	0.44	0.06	0.00	0.00	0.00
25	0.00	e0.00	0.00	0.00	e0.00	4.3	0.09	0.60	0.04	0.00	0.00	0.00
26	0.00	e0.00	0.00	0.00	e0.00	3.4	0.08	0.43	0.01	0.00	0.00	0.00
27	0.00	e0.00	e0.00	0.00	e10	3.0	0.07	0.44	0.00	0.00	0.00	0.00
28	0.00	e0.00	e0.00	0.00	e20	2.1	0.06	0.31	0.00	0.00	0.00	0.00
29	0.00	e0.00	e0.00	0.00	e4.0	1.1	0.07	0.28	0.00	0.00	0.00	0.00
30	0.00	e0.00	e0.00	0.00	---	0.81	0.06	0.22	0.00	0.00	0.00	0.00
31	0.00	---	e0.00	0.00	---	0.63	---	0.20	---	0.00	0.00	---
TOTAL	0.00	0.01	0.00	0.00	34.15	338.64	5.50	4.72	2.87	2.45	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	1.18	10.9	0.18	0.15	0.096	0.079	0.000	0.000
MAX	0.00	0.01	0.00	0.00	20	80	0.47	0.60	0.31	1.7	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.10	0.06	0.04	0.00	0.00	0.00	0.00
AC-FT	0.00	0.02	0.00	0.00	68	672	11	9.4	5.7	4.9	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2004, BY WATER YEAR (WY)\*

MEAN	0.16	0.016	0.019	0.35	2.19	5.49	3.08	1.38	1.61	2.41	1.23	1.08
MAX	1.47	0.14	0.15	2.90	19.0	37.4	39.9	13.1	5.64	16.0	9.37	15.4
(WY)	(1982)	(1979)	(1976)	(1983)	(1982)	(1978)	(1979)	(1978)	(1977)	(1978)	(1981)	(1978)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.001	0.000	0.000	0.000	0.000
(WY)	(1977)	(1977)	(1977)	(1977)	(1978)	(2002)	(2000)	(2001)	(1981)	(1980)	(1977)	(1976)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1976 - 2004\*

ANNUAL TOTAL	429.86	388.34		
ANNUAL MEAN	1.18	1.06		
HIGHEST ANNUAL MEAN			1.64	
LOWEST ANNUAL MEAN			7.57	1978
HIGHEST DAILY MEAN	174	80	0.14	1980
LOWEST DAILY MEAN	0.00	0.00	445	Jul 4, 1978
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	60.00	Oct 1, 1975
MAXIMUM PEAK FLOW		unknown	0.00	Oct 1, 1975
MAXIMUM PEAK STAGE		a5.85	1,750	Jul 4, 1978
ANNUAL RUNOFF (AC-FT)	853	770	9.30	Jul 4, 1978
10 PERCENT EXCEEDS	0.32	0.44	1,190	
50 PERCENT EXCEEDS	0.00	0.00		
90 PERCENT EXCEEDS	0.00	0.00		

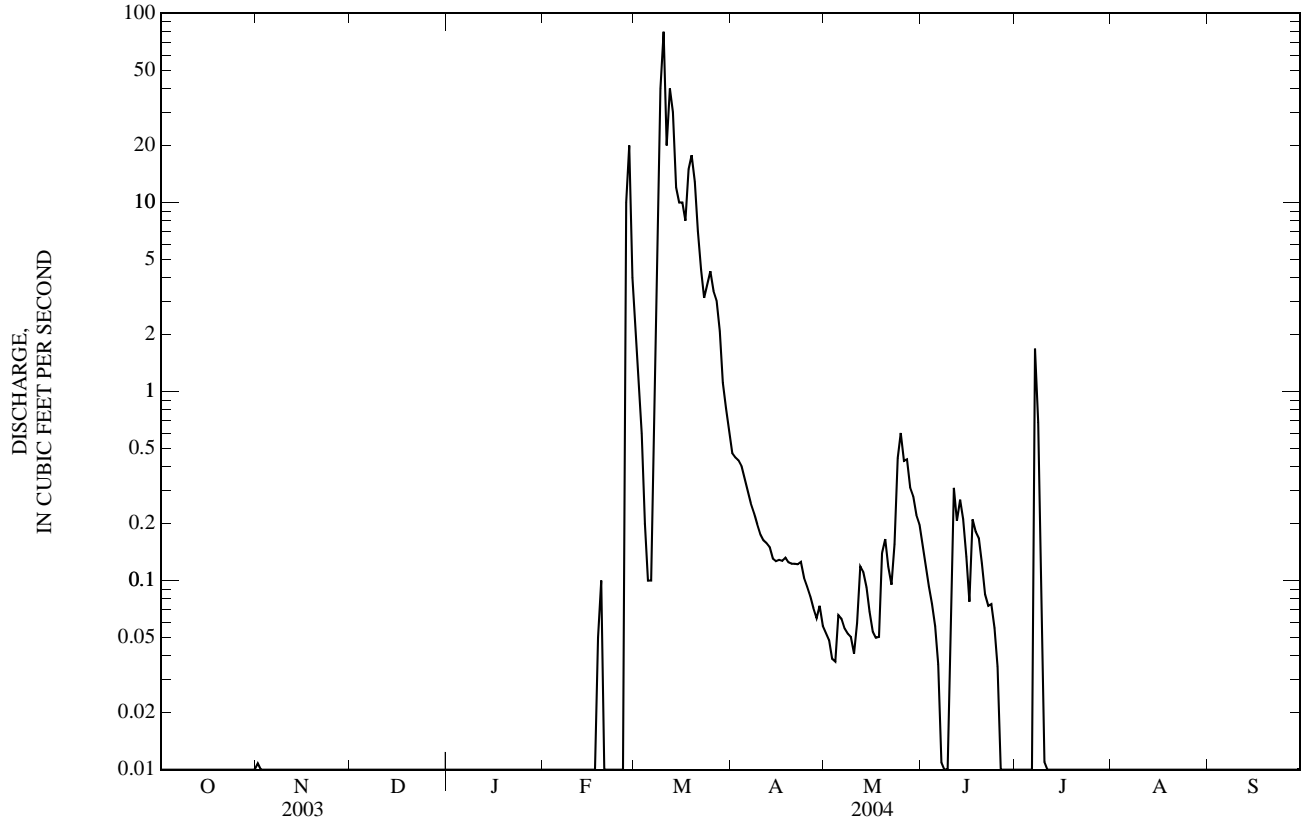
\*--During period of operation (1975-1985, February 2000 to September 2004).

a--Backwater from ice.

b--No flow at times most years.

c--Estimated.

06131200 NELSON CREEK NEAR VAN NORMAN, MT—Continued



## 06131500 FORT PECK LAKE AT FORT PECK, MT

LOCATION.--Lat 48°00'26", long 106°23'49" (NAD 27), in sec. 14, T.26 N., R.41 E., McCone County, Hydrologic Unit 10040104, in No. 4 emergency gate shaft of Fort Peck Dam on Missouri River at Fort Peck, 2 mi downstream from Bear Creek, 9.5 mi southwest of Nashua, 9.5 mi upstream from Milk River, and at river mile 1,771.6.

DRAINAGE AREA.--57,500 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. (Monthend contents only, except October 1938 to September 1940, when elevations were included.) Monthend contents for October 1937 to August 1938, published only in WSP 1309. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Prior to October 1970, published as "Fort Peck Reservoir." Daily elevations on file in Helena district office.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Prior to May 1, 1941, nonrecording gage at same site and elevation. Elevation of gage is 2095.00 (NGVD 29).

REMARKS.--Reservoir is formed by earthfill dam completed in 1939; storage began in 1937. The following capacity figures are from capacity table effective July 1, 1973; see previous reports for superseded figures. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Total capacity, 18,910,000 acre-ft between elevation 2,095.00 ft, invert of lower ring gates, and 2,250.00 ft, top of 25 ft gates. Elevation of spillway crest, 2,225.00 ft. Normal operating level, 17,930,000 acre-ft, elevation, 2,246.00 ft. Dead storage, 542,800 acre-ft below elevation 2,095.00 ft. Minimum operating level, 4,283,000 acre-ft, elevation, 2,160.00 ft, for on-site power generation. Figures given herein represent total contents; usable contents published in previous water-supply papers for October 1950 to September 1955. Water is used for navigation, recreation, flood control, and power generation. Elevations materially affected by wind.

COOPERATION.--Elevations and capacity table furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 19,310,000 acre-ft, July 15-17, 1975, elevation, 2,251.6 ft; minimum since first filling, 5,061,000 acre-ft, Jan. 25, 26, 1956, elevation, 2,167.67 ft, by capacity table used Mar. 1, 1940, to Dec. 31, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 10,650,000 acre-ft, Oct. 1, elevation, 2,209.50 ft; minimum, 8,964,000 acre-ft, Sept. 30, elevation, 2,199.80 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	2,209.53	10,490,000	--
October 31	2,209.26	10,440,000	-50,000
November 30	2,208.35	10,300,000	-140,000
December 31	2,206.83	10,050,000	-250,000
Calendar Year 2003	--	--	-290,000
January 31	2,205.29	9,807,000	-243,000
February 29	2,204.00	9,605,000	-202,000
March 31	2,205.49	9,833,000	+228,000
April 30	2,204.87	9,741,000	-92,000
May 31	2,203.38	9,508,000	-233,000
June 30	2,203.76	9,567,000	+59,000
July 31	2,202.41	9,669,000	+102,000
August 31	2,200.86	9,123,000	-546,000
September 30	2,199.80	8,964,000	-159,000
Water Year 2004	--	--	-1,526,000

## 06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT

LOCATION.--Lat 48°02'39" (NAD 27), long 106°21'21", in NW¼ sec.6, T.26 N., R.42 E., McCone County, Hydrologic Unit 10060001, on right bank 2 mi upstream from Milk River, 6 mi south of Nashua, 8 mi downstream from Fort Peck Dam, and at river mile 1,763.5.

DRAINAGE AREA.--57,556 mi<sup>2</sup>.

## WATER DISCHARGE RECORDS

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,018 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark). Prior to Apr. 14, 1938, at site 0.7 mi upstream at different elevation; Apr. 14, 1938, to Sept. 30, 1963, at present site at elevation 2.00 ft higher, all water-stage recorders. Since Oct. 1, 1969, published discharge is determined by flowmeters and spillway discharge at Fort Peck Dam.

REMARKS.--Flow completely regulated by Fort Peck Lake. Diversions for irrigation of about 880,400 acres upstream from station. Operational level in Fort Peck Lake was reached beginning 1944 water year.

COOPERATION.--Records since Oct. 1, 1969, furnished by U.S. Army Corps of Engineers; 2 to 4 discharge measurements are made each year and the records are reviewed by Geological Survey. Records for March 1934 to September 1969 collected and computed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft<sup>3</sup>/s including 32,000 ft<sup>3</sup>/s inflow from spillway 1 mi downstream from station, Aug. 8, 1946; maximum gage height observed, 12.30 ft, Mar. 10, 1936 (ice jam), site and elevation then in use; maximum daily reverse flow, 400 ft<sup>3</sup>/s, Mar. 29, 1943, backwater from Milk River.

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	4,400	4,800	8,800	9,000	9,000	7,100	5,500	10,900	6,700	7,400	8,000	7,000
2	4,400	4,800	8,300	9,000	9,000	6,600	5,500	10,700	7,500	7,200	8,100	6,900
3	4,800	4,800	9,000	8,800	8,900	6,400	5,500	10,800	7,600	7,300	7,100	7,100
4	4,800	4,600	8,900	8,800	9,100	6,200	5,230	10,600	7,400	7,300	6,600	7,500
5	4,700	4,700	8,900	8,700	9,000	6,400	4,900	10,800	7,100	7,400	7,400	7,000
6	4,700	4,700	8,900	8,500	9,300	6,100	4,500	10,600	7,100	7,800	7,200	7,100
7	4,700	4,600	8,800	8,600	9,400	6,400	4,600	10,500	7,400	7,300	7,200	7,200
8	4,800	4,600	8,800	8,800	9,300	6,400	4,800	10,800	6,800	7,200	7,300	7,100
9	4,500	4,700	8,900	8,900	9,100	6,100	4,500	10,700	6,800	7,300	6,500	6,900
10	4,600	4,600	8,940	8,800	8,900	6,100	4,900	10,800	7,200	7,000	6,600	6,600
11	4,600	4,700	8,940	8,800	8,700	6,000	4,800	10,900	7,200	7,100	6,700	6,600
12	4,600	4,700	8,930	9,000	8,900	5,600	4,900	10,900	7,000	7,100	6,700	6,900
13	4,600	4,700	8,910	9,000	8,900	5,500	6,600	10,700	7,200	7,000	6,600	6,600
14	4,600	4,600	8,910	8,600	8,700	5,300	6,500	10,700	7,300	7,400	7,300	6,300
15	4,700	4,800	8,900	8,800	8,700	5,500	6,300	10,600	6,400	7,300	6,500	6,700
16	4,500	4,800	8,900	9,000	8,800	5,800	6,300	10,800	6,000	7,200	6,400	6,700
17	4,500	4,600	8,900	9,200	8,700	5,300	6,300	10,700	6,200	7,200	7,400	6,300
18	4,400	4,700	8,900	9,400	8,400	5,400	6,200	10,900	6,000	6,900	6,300	5,500
19	4,400	4,900	9,000	9,100	8,200	4,900	6,400	10,600	6,300	7,000	7,200	5,600
20	4,900	4,700	8,900	9,100	8,400	5,000	7,100	10,700	6,500	6,900	7,300	5,200
21	4,700	4,600	8,900	9,100	8,800	4,900	7,300	10,700	6,500	6,900	6,300	5,200
22	4,700	6,300	9,300	8,900	9,500	5,100	7,200	10,700	6,000	7,100	6,300	3,900
23	4,600	6,500	8,800	9,000	9,300	5,100	6,200	10,400	6,100	6,900	6,500	4,300
24	4,400	7,000	8,800	8,800	9,000	5,400	8,800	10,800	5,600	6,400	6,700	5,000
25	4,600	7,900	8,600	9,000	9,100	5,600	8,700	10,400	5,600	6,600	6,700	5,200
26	4,700	8,700	8,900	9,100	9,100	5,500	10,600	10,600	5,800	6,800	6,700	5,100
27	4,700	9,000	9,000	8,900	8,900	5,700	11,200	9,300	6,100	7,100	7,000	5,100
28	4,600	8,500	9,200	8,900	7,600	5,700	10,600	6,900	6,100	7,500	7,100	5,200
29	4,700	8,800	9,100	8,900	7,600	5,600	10,500	7,300	6,200	7,600	7,100	5,100
30	4,500	8,800	8,800	8,800	---	5,400	10,600	6,700	6,200	7,400	7,200	4,900
31	4,700	---	8,900	8,800	---	5,400	---	6,600	---	7,500	6,900	---
TOTAL	143,100	170,200	275,730	276,100	256,300	177,500	203,030	315,100	197,900	222,100	214,900	181,800
MEAN	4,616	5,673	8,895	8,906	8,838	5,726	6,768	10,160	6,597	7,165	6,932	6,060
MAX	4,900	9,000	9,300	9,400	9,500	7,100	11,200	10,900	7,600	7,800	8,100	7,500
MIN	4,400	4,600	8,300	8,500	7,600	4,900	4,500	6,600	5,600	6,400	6,300	3,900
AC-FT	283,800	337,600	546,900	547,600	508,400	352,100	402,700	625,000	392,500	440,500	426,300	360,600

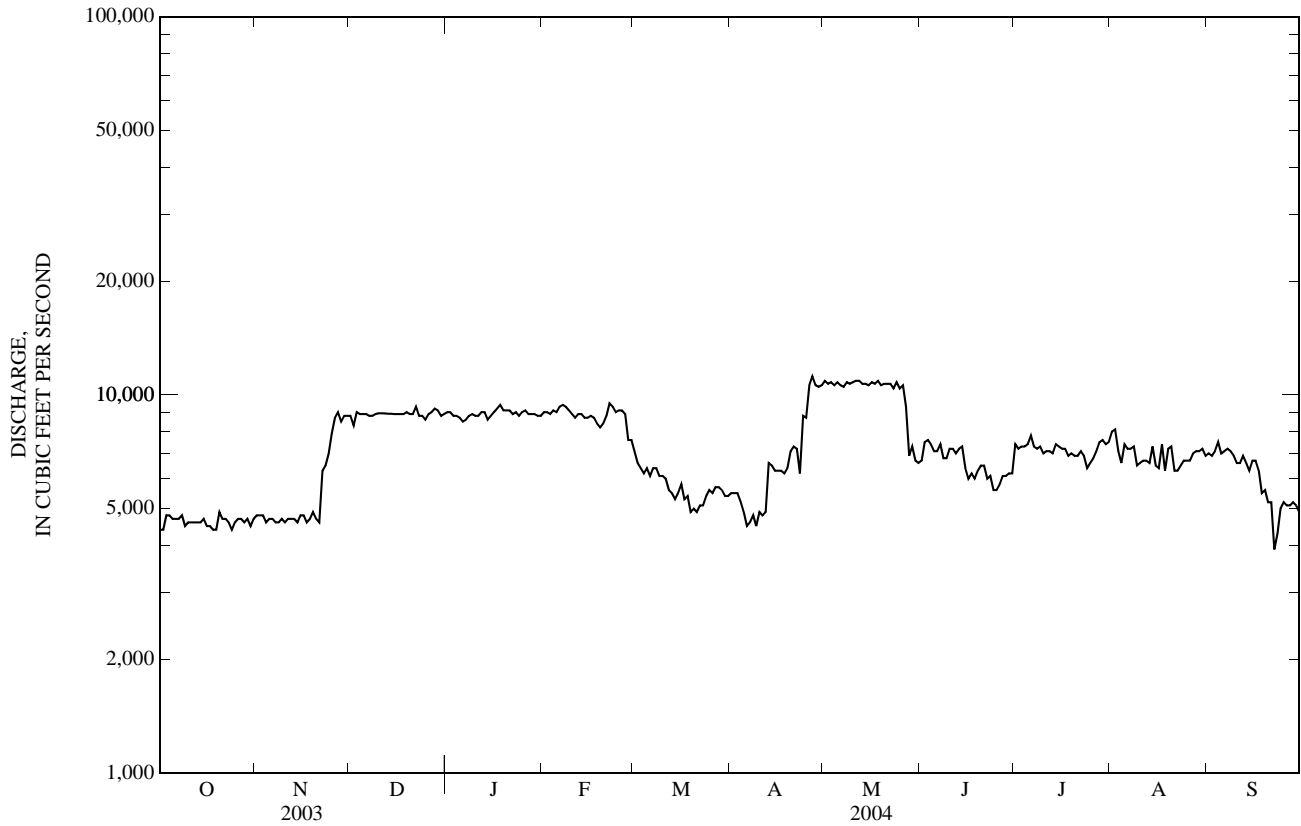
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2004, BY WATER YEAR (WY)\*

	11,120	8,994	9,171	9,810	9,754	7,388	7,232	8,519	8,675	9,911	11,790	11,410
MEAN	11,120	8,994	9,171	9,810	9,754	7,388	7,232	8,519	8,675	9,911	11,790	11,410
MAX	28,800	21,150	13,330	14,010	15,240	13,390	17,230	18,830	26,190	35,030	26,180	27,120
(WY)	(1956)	(1998)	(1944)	(1971)	(1979)	(1982)	(1979)	(1979)	(1975)	(1975)	(1955)	(1948)
MIN	3,016	2,085	1,490	1,390	1,180	1,050	856	950	832	1,163	3,449	2,997
(WY)	(1994)	(1947)	(1946)	(1946)	(1945)	(1944)	(1945)	(1944)	(1944)	(1945)	(1963)	(1992)

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1944 - 2004*	
ANNUAL TOTAL	2,744,130		2,633,760			
ANNUAL MEAN	7,518		7,196		9,484	
HIGHEST ANNUAL MEAN					14,950	1975
LOWEST ANNUAL MEAN					5,313	1963
HIGHEST DAILY MEAN	10,800	May 22	11,200	Apr 27	35,400	Jul 7, 1975
LOWEST DAILY MEAN	3,700	Mar 14	3,900	Sep 22	16	Apr 6, 1978
ANNUAL SEVEN-DAY MINIMUM	3,890	Mar 13	4,530	Oct 13	161	Mar 26, 1944
INSTANTANEOUS LOW FLOW					161	Mar 26, 1944
ANNUAL RUNOFF (AC-FT)	5,443,000		5,224,000		6,871,000	
10 PERCENT EXCEEDS	10,000		9,300		14,700	
50 PERCENT EXCEEDS	8,100		7,100		8,400	
90 PERCENT EXCEEDS	4,500		4,700		4,100	

\*--Period of record after operational level in Fort Peck Lake was reached.



06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964, 1975 to 1987, May 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Water years 1974 to 1981.

WATER TEMPERATURE: Water years, 1974 to 1979; seasonal records, July 2002 to current year.

INSTRUMENTATION.--Temperature recorder installed July 31, 2002.

REMARKS.--Daily water temperature record rated excellent except for Apr. 1-26 when equipment problems affected data transmission. .

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1975-81): Maximum daily, 1,080 microsiemens per centimeter (µS/cm), Nov. 30, 1976; minimum daily, 520 µS/cm, June 29, 1978.

WATER TEMPERATURE: Maximum, 19.0°C, Aug. 31 and Sept. 1, 2004; minimum, 0.0°C, on several days from December 1977 to January 1978.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: During period of seasonal operation, maximum, 19.0°C, Aug. 31 and Sept. 1; minimum, 3.0°C, Apr. 1.

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)	Specific 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)	
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)
Date		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)	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)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, fltrd, ug/L (01030)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)
MAR 24...	1015		5,400	712	12.8	105	8.6	555	10.0	4.0	220	54.0	21.0	4.00
MAY 18...	0900		10,900	719	11.0	97	7.5	549	11.0	7.5	210	52.6	18.8	3.55
AUG 05...	1015		7,400	718	8.3	90	8.4	554	24.0	16.5	220	54.1	20.1	3.85
AUG 30...	1115		7,200	716	9.5	111	8.2	553	22.0	19.5	210	50.7	19.6	3.71
MAR 24...	1	41.1	28	160	9.31	.9	6.6	122	355	.48	5,170	<.010	<.016	
MAY 18...	1	32.3	25	157	9.30	.9	5.9	112	330	.45	9,710	<.010	<.016	
AUG 05...	1	35.6	26	157	8.91	.9	6.6	114	338	.46	6,750	<.010	E.015	
AUG 30...	1	36.9	27	157	8.88	.9	6.9	115	336	.46	6,540	<.010	<.016	
MAR 24...	<.002	.20	<.006	.010	3.7	4	37	35	<.04	<.04	<.8	<.8	1.5	
MAY 18...	<.002	.23	<.006	.007	3.7	3	32	35	<.04	<.04	<.8	<.8	1.7	
AUG 05...	<.002	.20	E.004	.013	3.8	4	36	37	<.04	<.04	<.8	<.8	1.7	
AUG 30...	<.002	.15	E.005	.014	4.0	4	38	34	<.04	<.04	<.8	<.8	1.5	

E--Estimated.

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

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

Date	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)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)
MAR 24...	2.0	<6	20	<.08	E.05	2.7	5	<.02	<.02	1.98	2.11
MAY 18...	2.1	<6	110	<.08	.11	.6	6	<.02	<.02	2.15	2.20
AUG 05...	2.9	<6	90	<.08	.09	1.5	6	<.02	<.02	1.63	2.54
30...	2.3	<6	150	<.08	.10	1.8	9	<.02	<.02	2.37	3.02

Date	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	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 24...	.7	.7	E.4	<2	80	2	29
MAY 18...	.5	.5	.8	<2	69	11	324
AUG 05...	.7	.8	E.3	E1	80	4	80
30...	.8	.6	<.6	E1	73	8	156

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
	APRIL			MAY			JUNE			JULY		
1	4.5	3.0	3.5	8.5	5.0	6.5	14.5	9.0	11.5	14.5	12.5	13.5
2	6.5	4.0	5.5	9.0	5.0	7.0	15.5	9.5	12.5	17.0	12.0	14.5
3	8.0	4.0	6.5	9.0	6.5	7.5	16.0	10.5	13.0	17.5	13.0	15.0
4	8.5	5.0	7.0	10.0	6.0	8.0	15.0	11.0	13.0	13.5	12.0	13.0
5	9.0	5.0	7.5	10.5	7.0	8.5	16.0	11.0	13.0	13.0	11.5	12.5
6	5.0	5.0	5.0	9.5	6.0	7.5	16.0	11.5	13.5	16.5	11.5	14.0
7	8.5	5.5	7.5	11.0	7.0	9.0	14.0	11.0	12.5	16.5	13.0	14.5
8	8.0	5.5	7.0	9.5	7.0	8.5	11.5	10.5	11.0	16.5	12.5	14.5
9	7.5	4.5	6.5	10.5	7.0	8.5	14.0	10.0	12.0	17.0	12.5	14.5
10	---	---	---	9.5	6.5	8.0	11.5	11.0	11.0	17.0	12.5	14.5
11	---	---	---	7.0	6.0	6.5	12.0	11.0	11.5	17.5	13.5	15.5
12	8.5	7.5	8.0	7.5	6.0	7.0	13.5	11.0	12.0	17.5	13.5	15.0
13	9.5	6.0	7.5	10.0	6.5	8.0	15.0	11.0	12.5	18.0	13.0	15.5
14	---	---	---	11.0	6.5	8.5	15.5	11.0	13.5	18.0	13.5	15.5
15	9.5	7.5	8.5	10.0	7.0	8.5	15.5	11.5	13.5	18.0	13.5	15.5
16	---	---	---	9.5	7.0	8.0	16.5	11.5	14.0	17.5	13.5	15.0
17	---	---	---	11.5	7.0	9.0	14.5	12.0	13.0	18.5	13.5	15.5
18	---	---	---	11.0	7.5	9.0	16.5	10.5	13.5	18.0	13.5	15.5
19	---	---	---	11.0	8.5	9.5	16.5	11.5	14.0	16.5	14.0	15.0
20	8.5	5.5	7.5	11.5	8.0	10.0	16.0	12.0	14.0	16.5	13.0	15.0
21	9.5	6.5	8.5	11.5	9.0	10.0	16.5	12.0	14.0	17.0	13.0	15.0
22	9.0	6.5	8.0	9.5	8.0	9.0	16.5	12.5	14.0	16.5	12.5	14.5
23	10.0	6.0	8.5	8.5	8.0	8.0	14.5	12.0	13.0	17.5	12.5	15.0
24	9.0	6.5	8.0	8.5	7.5	8.0	16.5	11.5	14.0	18.0	13.0	15.5
25	8.5	6.0	7.5	11.5	7.0	9.5	17.5	12.0	14.5	18.0	13.0	15.5
26	8.5	6.0	7.0	11.0	8.5	9.5	14.5	13.0	13.5	16.0	12.5	14.5
27	9.5	6.0	7.5	13.5	8.5	11.0	17.5	12.0	14.5	15.5	12.5	13.5
28	7.0	5.0	5.5	13.5	9.5	11.0	18.0	12.5	15.0	15.5	12.0	13.5
29	8.5	4.5	6.0	14.0	10.0	12.0	18.0	13.0	15.5	16.0	12.0	14.0
30	7.5	5.0	6.0	12.0	9.5	10.5	17.0	13.5	14.5	17.5	13.0	15.0
31	---	---	---	13.5	8.5	11.0	---	---	---	17.5	14.0	15.5
MONTH	10.0	3.0	7.0	14.0	5.0	9.0	18.0	9.0	13.0	18.5	11.5	14.5

06132000 MISSOURI RIVER BELOW FORT PECK DAM, MT—Continued

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

DAY	MAX	MIN	MEAN	AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.5	13.5	15.0	19.0	14.5	16.5			
2	17.5	13.0	15.0	16.5	14.5	15.5			
3	15.0	13.5	14.0	15.0	13.5	14.0			
4	17.0	13.0	14.5	18.5	13.5	15.5			
5	18.0	13.0	15.5	18.5	15.0	16.5			
6	18.5	14.0	16.0	17.0	14.0	15.0			
7	17.0	14.0	15.5	15.5	13.0	14.0			
8	15.5	13.5	14.5	18.5	13.5	15.5			
9	17.5	14.0	15.5	18.0	14.5	16.0			
10	18.0	14.5	16.0	17.0	14.0	15.5			
11	17.0	13.5	15.5	16.0	12.0	14.0			
12	17.5	13.5	15.5	16.0	13.5	14.5			
13	17.5	13.0	15.0	15.0	13.5	14.0			
14	18.0	13.0	15.5	16.5	13.0	14.5			
15	18.0	13.0	15.5	17.5	14.0	15.5			
16	16.0	13.0	14.5	18.0	14.5	16.0			
17	17.5	12.5	14.5	18.0	14.0	16.0			
18	16.0	12.5	14.0	18.0	14.0	16.0			
19	17.0	12.0	14.5	15.5	14.0	14.5			
20	16.5	13.0	15.0	14.0	12.0	13.0			
21	17.5	13.5	15.5	16.0	11.5	13.5			
22	15.5	13.5	14.5	17.0	12.5	14.5			
23	15.5	12.5	13.5	18.0	14.0	15.5			
24	17.5	12.5	15.0	18.5	14.5	16.0			
25	16.5	13.5	15.0	18.5	14.0	16.0			
26	15.0	14.0	14.5	18.0	14.0	15.5			
27	18.0	13.5	15.5	16.5	13.5	15.0			
28	17.0	14.0	15.5	17.0	12.5	14.5			
29	18.5	14.5	16.5	18.0	14.5	15.5			
30	18.5	14.5	16.5	15.5	12.0	14.0			
31	19.0	15.0	17.0	---	---	---			
MONTH	19.0	12.0	15.0	19.0	11.5	15.0			



## MILK RIVER BASIN

## 06132200 SOUTH FORK MILK RIVER NEAR BABB, MT

LOCATION.--Lat 48°45'14", long 113°10'00" (NAD 27), in NE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.34, T.35 N., R.12 W., Glacier County, Hydrologic Unit 10050001, Blackfeet Indian Reservation, on right bank 0.4 mi upstream from bridge on FAS 464 ("Duck Lake Road"), 14.4 mi southeast of Babb, 15.2 mi northwest of Browning, and at river mile 17.3.

DRAINAGE AREA.--70.4 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1961 to current season (seasonal records only).

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,731.6 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Many small diversions for irrigation 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, CALENDAR YEAR JANUARY TO DECEMBER 2004  
DAILY MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			e7.5	27	66	25	42	6.3	6.7	8.3		
2			e7.0	21	50	23	32	7.1	6.5	6.3		
3			e7.0	19	50	21	25	8.5	6.6	6.8		
4			e7.0	23	56	20	27	8.5	6.1	7.4		
5			e7.4	25	39	20	44	7.5	5.9	7.2		
6			e7.8	23	31	21	33	6.4	5.7	6.9		
7			e8.0	22	28	27	26	7.1	5.7	5.9		
8			e11	22	21	34	24	9.0	6.3	6.3		
9			e12	28	19	30	22	9.7	6.1	7.1		
10			e11	26	18	31	18	9.7	5.4	6.2		
11			e12	22	25	29	17	8.3	5.6	6.6		
12			e13	20	33	25	15	7.6	5.1	6.3		
13			e12	18	34	22	13	6.2	5.8	7.0		
14			e14	22	37	21	12	6.1	7.5	7.0		
15			e13	27	59	22	11	5.3	7.1	12		
16			e15	30	68	23	11	5.2	6.6	20		
17			e14	33	48	32	10	5.8	6.8	17		
18			e15	31	39	30	8.6	21	7.0	15		
19			e15	25	31	25	8.5	21	6.7	13		
20			e13	19	27	22	8.6	14	7.9	11		
21			e14	15	39	24	8.6	21	8.8	8.9		
22			e14	14	60	23	9.2	21	8.1	10		
23			e14	14	86	20	9.2	17	7.3	10		
24			e15	12	74	33	8.1	21	6.8	9.3		
25			e15	11	66	29	7.4	14	6.4	8.9		
26			e20	10	51	27	6.7	12	6.4	8.5		
27			e17	10	43	31	6.4	12	6.5	8.7		
28			14	18	37	26	6.6	11	6.5	9.1		
29			18	34	33	22	7.5	9.4	5.6	9.8		
30			20	50	29	35	7.5	8.2	6.7	10		
31			26	---	26	---	6.6	7.6	---	10		
TOTAL			408.7	671	1,323	773	491.5	334.5	196.2	286.5		
MEAN			13.2	22.4	42.7	25.8	15.9	10.8	6.54	9.24		
MAX			26	50	86	35	44	21	8.8	20		
MIN			7.0	10	18	20	6.4	5.2	5.1	5.9		
AC-FT			811	1,330	2,620	1,530	975	663	389	568		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1961 - 2004

MEAN	46.0	31.6	65.3	85.6	89.3	36.6	17.2	14.8	16.4		
MAX	46.0	136	153	239	465	96.6	42.6	43.8	37.0		
(WY)	(1963)	(1972)	(1969)	(1967)	(1975)	(1975)	(1993)	(1993)	(1986)		
MIN	46.0	5.76	20.7	10.2	0.89	0.00	0.38	0.22	5.07		
(WY)	(1963)	(2001)	(1984)	(1977)	(1977)	(1977)	(2001)	(2001)	(1964)		

SUMMARY STATISTICS

FOR 2004 SEASON

SEASONS 1961 - 2004

HIGHEST DAILY MEAN	86	May 23	5,590	Jun 20, 1975
LOWEST DAILY MEAN	5.1	Sep 12	0.00	Aug 23, 1973
MAXIMUM PEAK FLOW	a108	May 1	c12,000	Jun 8, 1964
MAXIMUM PEAK STAGE	b3.43	Mar 9	7.17	Feb 24, 1986
INSTANTANEOUS LOW FLOW			0.00	Aug 23, 1973

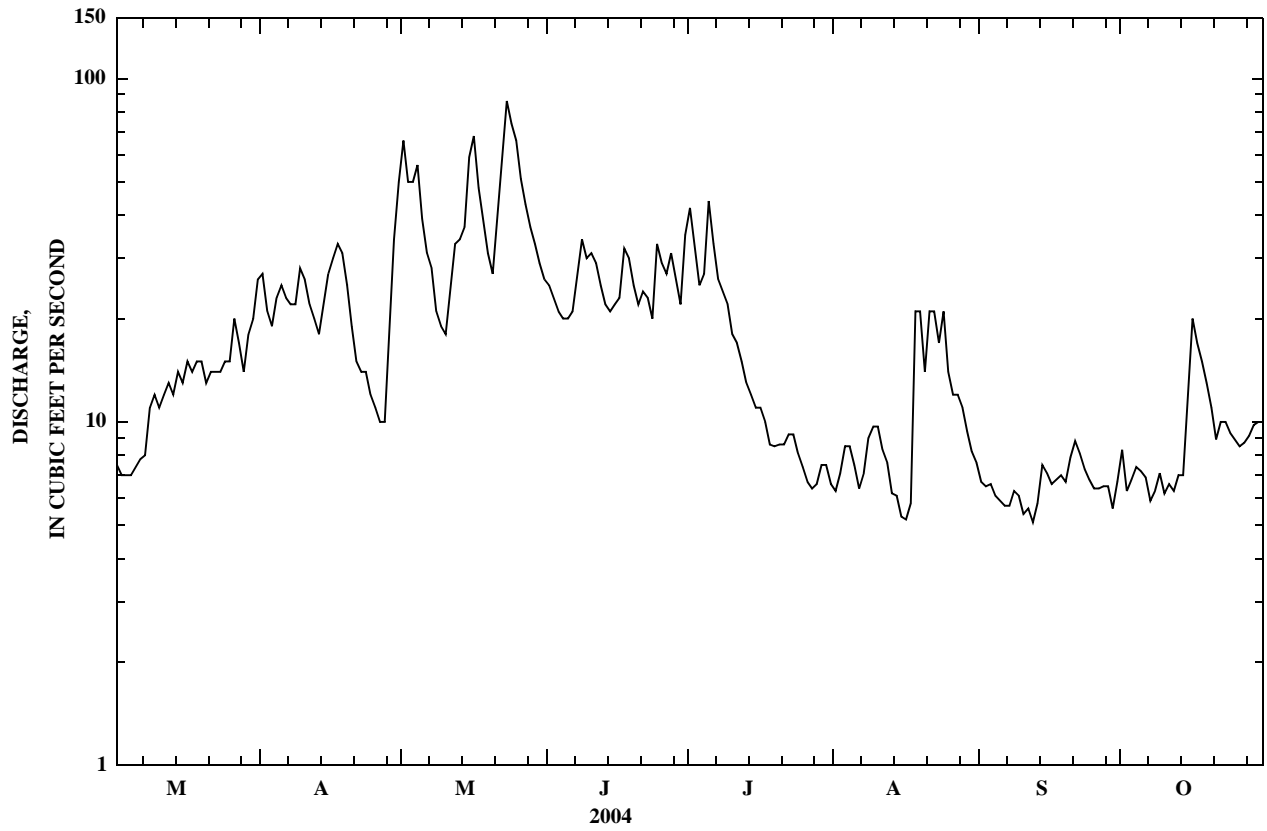
a--Gage height, 3.23 ft.

b--Backwater from ice.

c--Gage height, 6.61 ft, from rating curve extended above 400 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

e--Estimated.

06132200 SOUTH FORK MILK RIVER NEAR BABB, MT—Continued



06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY  
(International gaging station)

LOCATION.--Lat 49°00'27", long 112°32'42" (NAD 27), in NE $\frac{1}{4}$  sec.1, T.1, R.20 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on left bank 0.8 mi north of international boundary, 22 mi upstream from North Milk River, 23 mi southwest of Milk River, Alberta, and at river mile 656.4.

DRAINAGE AREA.--401 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1931 to current season (seasonal records only). Prior to October 1961, published as South Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1389: 1934(M), 1935, 1936(M), 1937, 1942(M), 1947-48(M). W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,820 ft (NGVD 29). Prior to Aug. 9, 1948, and Aug. 9, 1948, to Oct. 31, 1958, water-stage recorders at sites 0.4 mi and 0.5 mi downstream, respectively, at different elevations.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several diversions for irrigation upstream from station. Environment Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

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			e23	45	80	53	44	0.18	7.7	3.9		
2			e23	53	100	47	39	0.11	7.0	3.7		
3			e22	52	108	43	51	0.04	5.0	4.8		
4			e21	47	100	39	45	0.11	4.2	5.4		
5			e23	45	97	35	33	0.04	3.4	5.5		
6			e27	47	87	38	25	0.11	2.9	6.4		
7			e33	48	70	36	42	0.42	2.6	6.6		
8			e39	48	59	39	42	0.49	2.4	6.5		
9			e40	48	51	49	30	0.46	2.0	6.1		
10			e42	49	44	63	23	0.57	1.7	5.8		
11			e99	52	53	58	22	0.57	1.4	5.9		
12			e90	49	59	52	16	0.35	1.1	5.6		
13			e87	45	69	46	13	0.21	1.1	6.1		
14			e85	43	81	38	13	0.07	1.1	7.4		
15			e83	44	93	32	11	0.00	0.92	13		
16			e81	51	123	32	9.0	0.00	0.85	12		
17			e77	57	126	47	7.3	0.00	0.74	15		
18			e71	60	109	64	5.7	0.00	0.60	24		
19			e67	58	89	69	4.4	0.00	0.60	30		
20			e64	53	76	58	3.5	0.00	1.2	29		
21			e61	46	79	49	2.6	0.00	6.0	26		
22			e60	41	80	40	6.0	0.00	5.3	23		
23			58	35	131	37	3.6	0.00	4.6	21		
24			53	33	183	36	2.2	0.00	4.3	e22		
25			55	31	167	32	1.6	18	5.3	e23		
26			61	29	125	44	1.2	21	5.8	e23		
27			61	27	109	50	0.78	21	5.6	e23		
28			50	33	91	43	0.60	17	4.8	e23		
29			44	38	79	42	0.53	13	4.5	e23		
30			36	53	70	39	0.39	10	4.2	e22		
31			40	---	59	---	0.25	8.5	---	e21		
TOTAL			1,676	1,360	2,847	1,350	498.65	112.23	98.91	452.7		
MEAN			54.1	45.3	91.8	45.0	16.1	3.62	3.30	14.6		
MAX			99	60	183	69	51	21	7.7	30		
MIN			21	27	44	32	0.25	0.00	0.60	3.7		
AC-FT			3,320	2,700	5,650	2,680	989	223	196	898		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1931 - 2004

MEAN	104	206	206	179	57.5	20.3	20.4	24.9
MAX	717	615	679	907	348	142	168	133
(WY)	(1972)	(1969)	(1967)	(2002)	(1951)	(1951)	(1951)	(1952)
MIN	1.95	41.5	13.3	3.07	0.01	0.00	0.00	0.00
(WY)	(2002)	(1941)	(1941)	(1977)	(1977)	(1939)	(1939)	(1964)

SUMMARY STATISTICS

FOR 2004 SEASON

SEASONS 1931 - 2004

HIGHEST DAILY MEAN	183	May 24	5,410	Jun 9, 1964
LOWEST DAILY MEAN	0.00	Aug 15	0.00	Jul 31, 1931
MAXIMUM PEAK FLOW	a188	May 24	c7,930	Jun 9, 1964
MAXIMUM PEAK STAGE	b6.43	Mar 04	b12.55	Mar 18, 1976

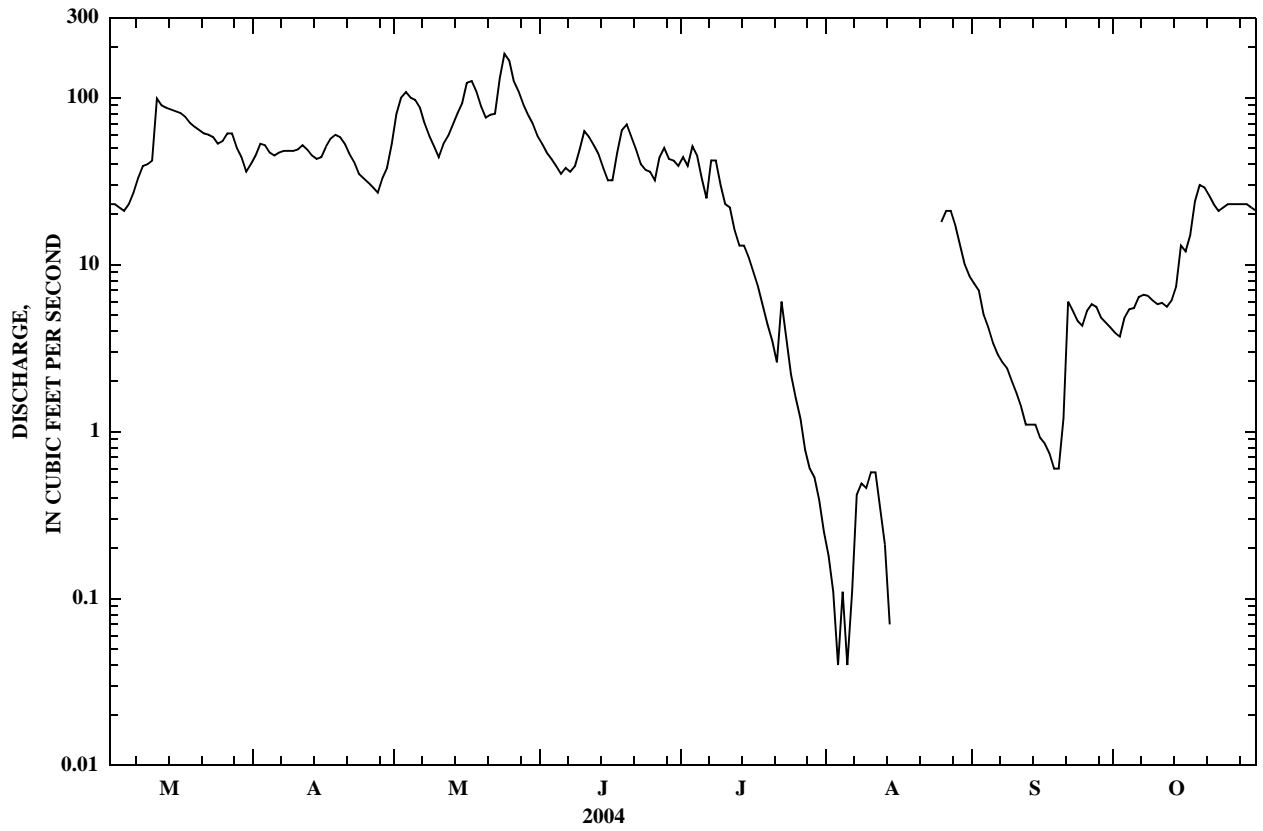
a--Gage height, 3.16 ft.

b--Backwater from ice.

c--Gage height, 9.77 ft.

e--Estimated.

06133000 MILK RIVER AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY—Continued



## MILK RIVER BASIN

06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT  
(International gaging station)

LOCATION.--Lat 48°57'48", long 113°03'43" (NAD 27), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.16, T.37 N., R.11 W., Glacier County, Hydrologic Unit 10050001, Blackfeet Indian Reservation, on left bank 2.3 mi upstream from outlet of canal, 2.3 mi south of international boundary, 29 mi north of Browning, and at river mile 58.3.

DRAINAGE AREA.--59.0 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1911 to July 1912 and June to July 1918 (published as "near Browning"), May 1919 to current season (seasonal records only). Monthly discharge only for some periods published in WSP 1309.

REVISED RECORDS.--W 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,240 ft (NGVD 29). Prior to June 20, 1921, nonrecording gages at several sites within 1 mi of present site at different elevations. June 20, 1921 to Mar. 19, 1997 water-stage recorder at site 0.5 mile downstream from current site at elevation 15 ft lower.

REMARKS.--Records fair. Many small diversions for irrigation upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

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			e15	15	23	11	15	7.7	9.3	11		
2			e13	16	21	11	12	8.6	10	10		
3			e14	17	19	11	12	9.0	10	10		
4			e15	17	17	11	12	8.8	10	9.9		
5			e15	18	16	10	17	8.0	10	9.7		
6			e17	18	16	13	14	7.6	10	9.3		
7			e18	17	14	15	12	8.5	11	9.5		
8			e20	17	13	15	12	9.6	13	9.6		
9			e20	17	13	12	11	10	12	9.6		
10			e18	17	12	13	10	9.8	13	9.2		
11			17	17	17	12	10	9.2	12	9.4		
12			16	16	17	11	9.6	8.4	11	8.5		
13			15	16	17	11	9.4	7.8	12	9.2		
14			14	17	19	10	9.0	7.3	15	9.5		
15			13	18	23	11	8.7	7.2	13	13		
16			13	18	20	11	8.1	7.2	12	12		
17			13	18	16	29	8.0	7.4	13	13		
18			13	18	14	16	8.0	10	12	11		
19			12	17	13	13	8.0	11	12	11		
20			10	15	14	13	8.1	14	13	10		
21			11	15	16	15	8.6	13	13	10		
22			10	15	21	13	9.6	19	12	10		
23			9.9	15	31	12	9.4	16	11	9.8		
24			10	14	26	12	8.9	16	11	9.5		
25			9.1	14	23	13	8.3	12	10	e9.0		
26			8.7	14	18	13	8.4	13	9.9	8.7		
27			7.8	14	15	13	8.0	13	10	8.5		
28			7.2	21	13	12	8.2	11	10	8.5		
29			7.2	18	13	12	8.6	9.7	10	8.4		
30			10	21	12	15	8.1	9.3	11	8.4		
31			12	---	12	---	7.4	8.8	---	8.2		
TOTAL			403.9	500	534	389	307.4	317.9	341.2	303.4		
MEAN			13.0	16.7	17.2	13.0	9.92	10.3	11.4	9.79		
MAX			20	21	31	29	17	19	15	13		
MIN			7.2	14	12	10	7.4	7.2	9.3	8.2		
AC-FT			801	992	1,060	772	610	631	677	602		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1911 - 2004\*

MEAN	23.9	37.5	34.0	30.1	19.6	16.5	18.2	17.7
MAX	72.1	167	164	147	101	65.5	86.8	55.0
(WY)	(1997)	(1948)	(1967)	(1995)	(1995)	(1951)	(1911)	(1996)
MIN	8.14	9.47	7.14	6.95	4.12	3.30	3.90	4.95
(WY)	(2001)	(2002)	(1941)	(1988)	(1985)	(1940)	(1940)	(1941)

SUMMARY STATISTICS

FOR 2004 SEASON

SEASONS 1911 - 2004\*

HIGHEST DAILY MEAN	31	Jun 23	1,320	Apr 22, 1953
LOWEST DAILY MEAN	7.2	Mar 28	1.7	Sep 17, 1940
MAXIMUM PEAK FLOW	a44	Jun 17	c3,090	May 8, 1967
MAXIMUM PEAK STAGE	b3.31	Mar 7	d10.50	Mar 19, 1997

\*--During periods of operation (May 1911 to July 1912, June to July 1918, May 1919 to current season).

a--Gage height, 2.84 ft.

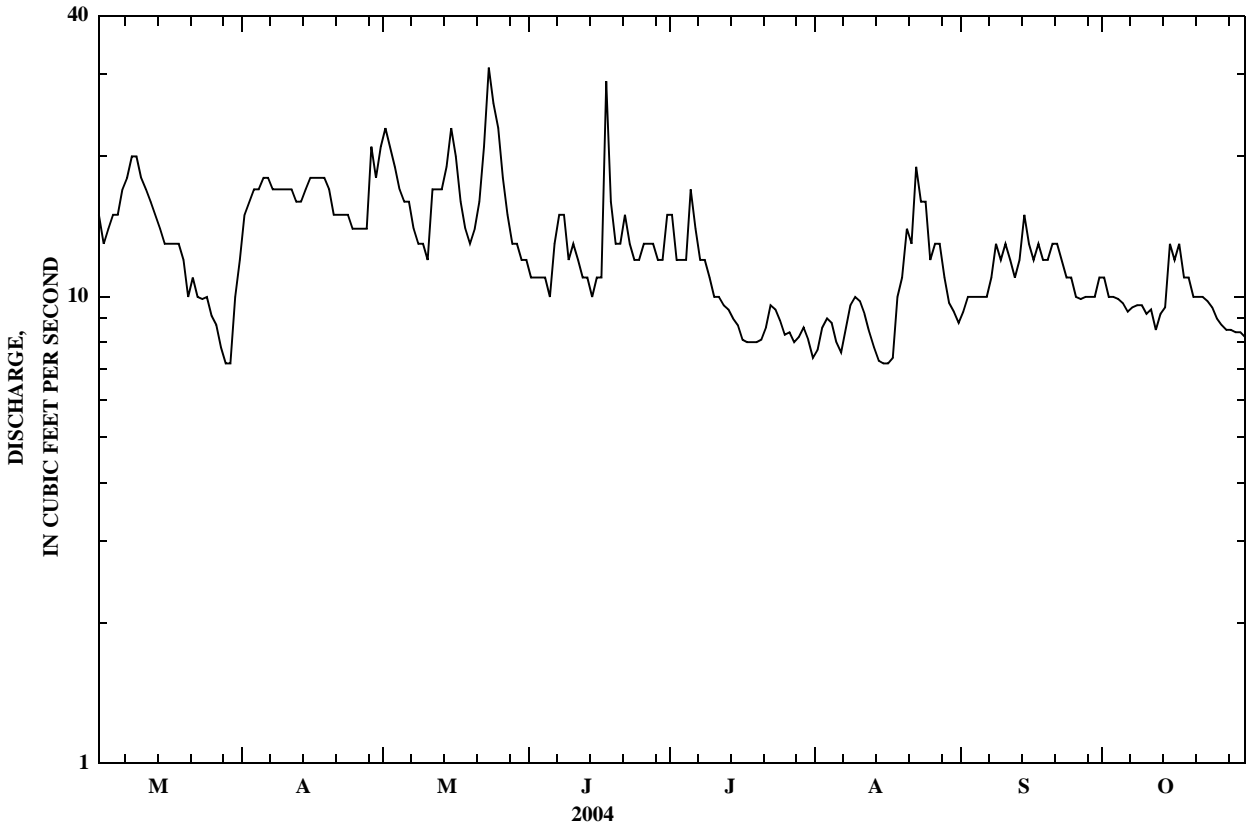
b--Backwater from ice.

c--Gage height, 7.95 ft, from rating curve extended above 130 ft<sup>3</sup>/s, on basis of slope-area measurements at gage heights 7.55 ft and 7.95 ft, at previous site and datum.

d--Backwater from ice, gage height, 9.07 ft, from floodmarks at previous site, which was destroyed.

e--Estimated.

06133500 NORTH FORK MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MT—Continued



## MILK RIVER BASIN

06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY  
(International gaging station)

LOCATION.--Lat 49°01'19", long 112°58'16" (NAD 27), in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.11, T.1, R.23 W., fourth meridian, in Alberta, Hydrologic Unit 10050001, on right bank 0.4 mi upstream from highway bridge, 1.6 mi north of international boundary, 2.8 mi east of Whiskey Gap, Alberta, 11 mi southeast of Kimball, Alberta, and at river mile 49.9.

DRAINAGE AREA.--91.8 mi<sup>2</sup>. Area at site used Apr. 12, 1930, to Aug. 15, 1962, 97.4 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1909 to October 1912 (seasonal records only), January 1913 to October 1922, March 1923 to current season (seasonal records only). Records for November and December 1912, published in WSP 1309, have been found to be unreliable and should not be used. Published as "near Kimball, Alberta" 1913-16. Prior to February 1962, published as North Fork Milk River near international boundary.

REVISED RECORDS.--WSP 1309: 1909-13, 1915(M), 1920(M), 1937(M). WSP 1559: 1948(M). WSP 1729: 1944(M). W 1983: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 4,112.16 ft, Canadian Geodetic Vertical Datum 1928. Prior to May 1913, nonrecording gage at site 2 mi downstream at different elevation. May 1, 1913, to Apr. 11, 1930, water-stage recorder 700 ft downstream at different elevation. Apr. 12, 1930, to Aug. 15, 1962, water-stage recorder 1,500 ft downstream at different elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Several small diversions for irrigation upstream from station. Water Survey of Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

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			e16	93	519	523	622	494	576			9.2
2			e16	133	523	526	614	516	569			8.7
3			e16	211	512	565	614	530	561			8.5
4			e16	339	519	597	618	537	561			8.3
5			e16	406	551	607	618	544	558			8.3
6			e16	420	579	614	614	544	554			8.2
7			e20	420	576	622	611	551	554			8.2
8			e23	420	576	622	579	554	551			8.1
9			e30	424	561	618	544	554	558			8.1
10			e30	424	558	618	540	551	569			8.0
11			e31	424	579	614	540	540	572			7.9
12			e27	427	576	604	526	540	565			7.9
13			e25	441	561	604	523	551	572			8.2
14			e23	470	558	597	519	554	554			9.2
15			e22	470	558	593	519	558	487			12
16			e21	477	544	604	519	554	403			12
17			e20	491	533	625	516	551	334			11
18			e21	516	526	597	516	558	304			11
19			e20	523	526	607	516	551	227			10
20			e21	533	533	607	509	544	148			10
21			e21	554	526	604	509	551	96			10
22			e21	558	565	600	477	558	43			9.9
23			e21	561	618	600	261	551	21			9.6
24			e20	551	600	607	111	554	16			e9.2
25			e20	551	583	611	37	558	15			e8.8
26			e20	554	572	614	20	565	14			e8.1
27			e20	561	569	614	19	572	11			e7.4
28			e20	551	569	618	17	579	9.8			e6.8
29			20	512	551	622	173	586	11			e6.5
30			20	516	523	625	427	583	10			e6.4
31			21	---	523	---	473	579	---			e6.2
TOTAL			654	13,531	17,167	18,079	13,701	17,112	10,023.8			271.7
MEAN			21.1	451	554	603	442	552	334			8.76
MAX			31	561	618	625	622	586	576			12
MIN			16	93	512	523	17	494	9.8			6.2
AC-FT			1,300	26,840	34,050	35,860	27,180	33,940	19,880			539

## STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004

MEAN	65.8	197	424	522	558	529	308	58.5
MAX	402	633	732	745	727	721	702	524
(WY)	(1981)	(1991)	(2001)	(1976)	(1936)	(1969)	(2002)	(1951)
MIN	9.67	23.6	38.6	43.5	84.3	16.0	5.57	6.06
(WY)	(2002)	(1940)	(1918)	(1952)	(2002)	(1982)	(1988)	(1942)

## SUMMARY STATISTICS

## FOR 2004 SEASON

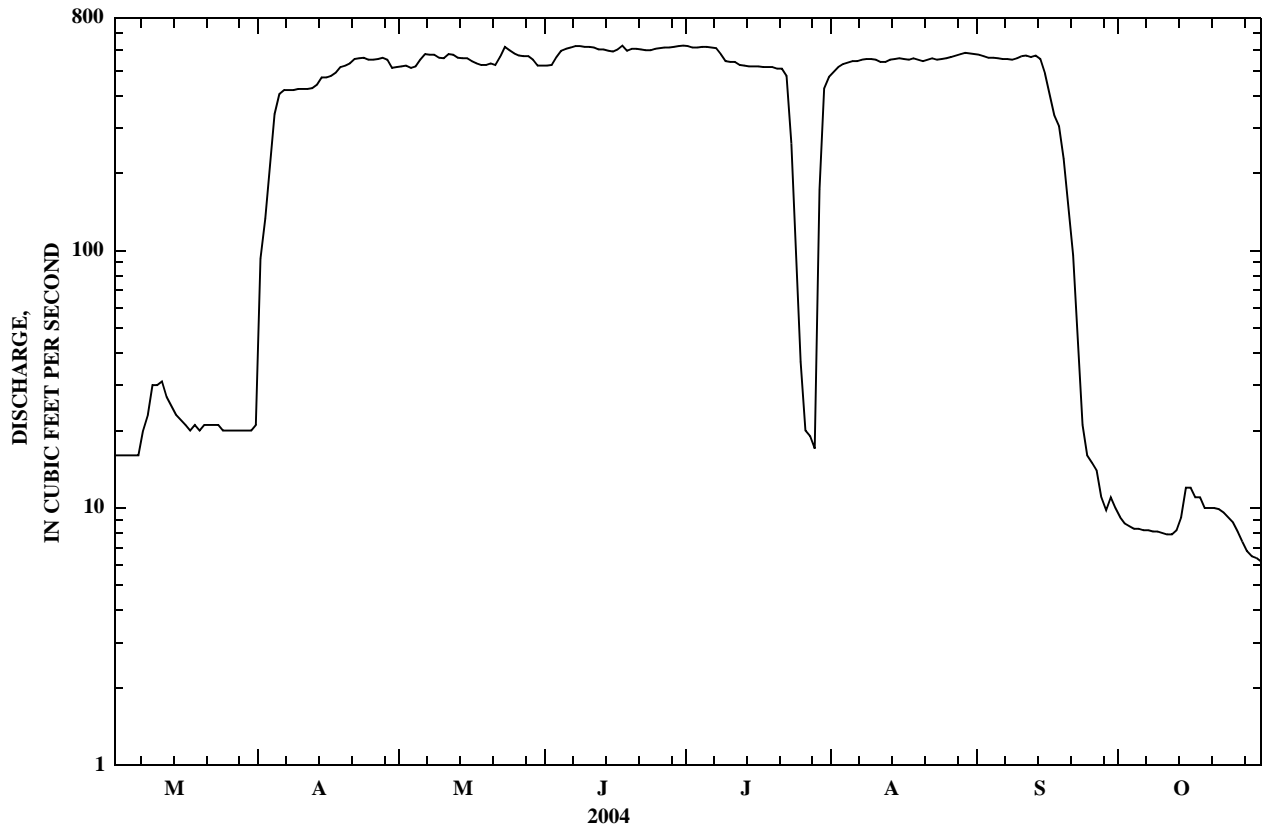
## SEASONS 1917 - 2004

HIGHEST DAILY MEAN	625	Jun 30	2,170	June 7, 1995
LOWEST DAILY MEAN	6.2	Oct 31	0.00	Mar 1, 1940
MAXIMUM PEAK FLOW	657	Jun 5	a3,670	Jun 6, 1995
MAXIMUM PEAK STAGE	3.22	Jun 5	6.89	Jun 6, 1995

a--From rating curve extended above 1,500 ft<sup>3</sup>/s.

e--Estimated.

06134000 NORTH MILK RIVER NEAR INTERNATIONAL BOUNDARY—Continued





## MILK RIVER BASIN

06134500 MILK RIVER AT MILK RIVER, ALBERTA  
(International gaging station)

LOCATION.--Lat 49°08'37", long 112°04'44" (NAD 27), in NE $\frac{1}{4}$  sec.21, T.2, R.16 W., fourth meridian, in Alberta, Hydrologic Unit 10050002, on right bank 5 ft downstream from highway bridge at Milk River, Alberta, 22 mi downstream from North Milk River, and at river mile 613.4.

DRAINAGE AREA.--1,050 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1909 to October 1910 (no winter records), April 1911 to current year. Monthly discharge only for June 1909, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1599: 1916, 1927(M), 1947(M). W 1983: Drainage area. W 1984: 1983 (M).

GAGE.--Water-stage recorder. Elevation of gage is 3,402.78 ft, Canadian Geodetic Vertical Datum 1928. Prior to June 17, 1919, nonrecording gages, and June 17, 1919, to Nov. 2, 1921, water-stage recorder at several sites 300 ft upstream at elevation 0.61 ft higher. Nov. 3, 1921, to Aug. 28, 1947, water-stage recorder at site 60 ft upstream at present elevation. Aug. 29, 1947, to Nov. 10, 1976, water-stage recorder located 700 ft downstream on left bank at present elevation.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Several diversions for irrigation upstream from station. Environment Canada satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--This is one of a number of stations which are maintained jointly by Canada and the United States.

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	e14	e37	e7.8	e9.1	e41	63	586	604	706	480	604
2	25	e16	e38	e7.7	e9.3	e41	67	611	597	692	505	593
3	23	e17	e37	e7.1	e9.7	e40	150	625	590	671	526	593
4	23	e19	e38	e6.2	e10	e40	232	625	622	685	544	586
5	23	e19	e37	e5.3	e11	e41	374	622	650	692	551	579
6	21	e19	e34	e4.6	e11	e62	456	653	682	678	551	576
7	21	e18	e31	e4.1	e12	e102	473	664	685	664	576	576
8	20	e18	e28	e4.2	e13	e155	487	653	689	678	579	579
9	19	e17	e25	e5.5	e14	e221	494	639	678	643	554	572
10	18	e17	e22	e6.7	e15	e215	487	629	696	604	540	579
11	18	e19	e21	e6.5	e15	e208	487	667	703	597	533	586
12	18	e22	e22	e6.4	e15	e184	484	678	685	583	530	593
13	18	e22	e25	e6.5	e15	e168	484	675	664	561	526	597
14	19	e23	e27	e7.1	e15	e152	505	671	650	558	526	600
15	20	e24	e29	e9.5	e16	e136	530	682	636	558	523	583
16	21	e31	e29	e12	e17	e124	533	692	639	558	526	530
17	20	e34	e29	e13	e19	e117	544	713	660	554	523	448
18	19	e36	e30	e13	e20	e109	565	699	675	554	523	381
19	18	e38	e29	e12	e23	e104	583	675	667	551	519	352
20	17	e38	e29	e12	e26	e100	579	660	675	544	526	298
21	17	e35	e29	e12	e30	e96	593	699	664	537	547	215
22	17	e34	e29	e12	e34	e102	604	692	653	544	565	167
23	17	e32	e29	e13	e36	e106	600	759	653	512	572	110
24	16	e34	e29	e12	e40	106	597	833	646	324	561	77
25	16	e35	e28	e11	e42	95	590	830	646	180	572	59
26	17	e35	e25	e9.9	e42	91	590	773	653	103	593	48
27	16	e35	e20	e9.1	e42	92	586	731	667	66	600	41
28	17	e36	e15	e8.8	e42	89	636	703	667	44	607	39
29	e15	e38	e13	e8.8	e41	77	607	689	664	30	604	36
30	e14	e37	e10	e8.8	---	72	572	671	678	23	607	34
31	e14	---	e8.5	e8.9	---	64	---	614	---	388	607	---
TOTAL	582	812	832.5	271.5	644.1	3,350	14,552	21,113	19,738	15,082	17,096	11,631
MEAN	18.8	27.1	26.9	8.76	22.2	108	485	681	658	487	551	388
MAX	25	38	38	13	42	221	636	833	703	706	607	604
MIN	14	14	8.5	4.1	9.1	40	63	586	590	23	480	34
AC-FT	1,150	1,610	1,650	539	1,280	6,640	28,860	41,880	39,150	29,920	33,910	23,070

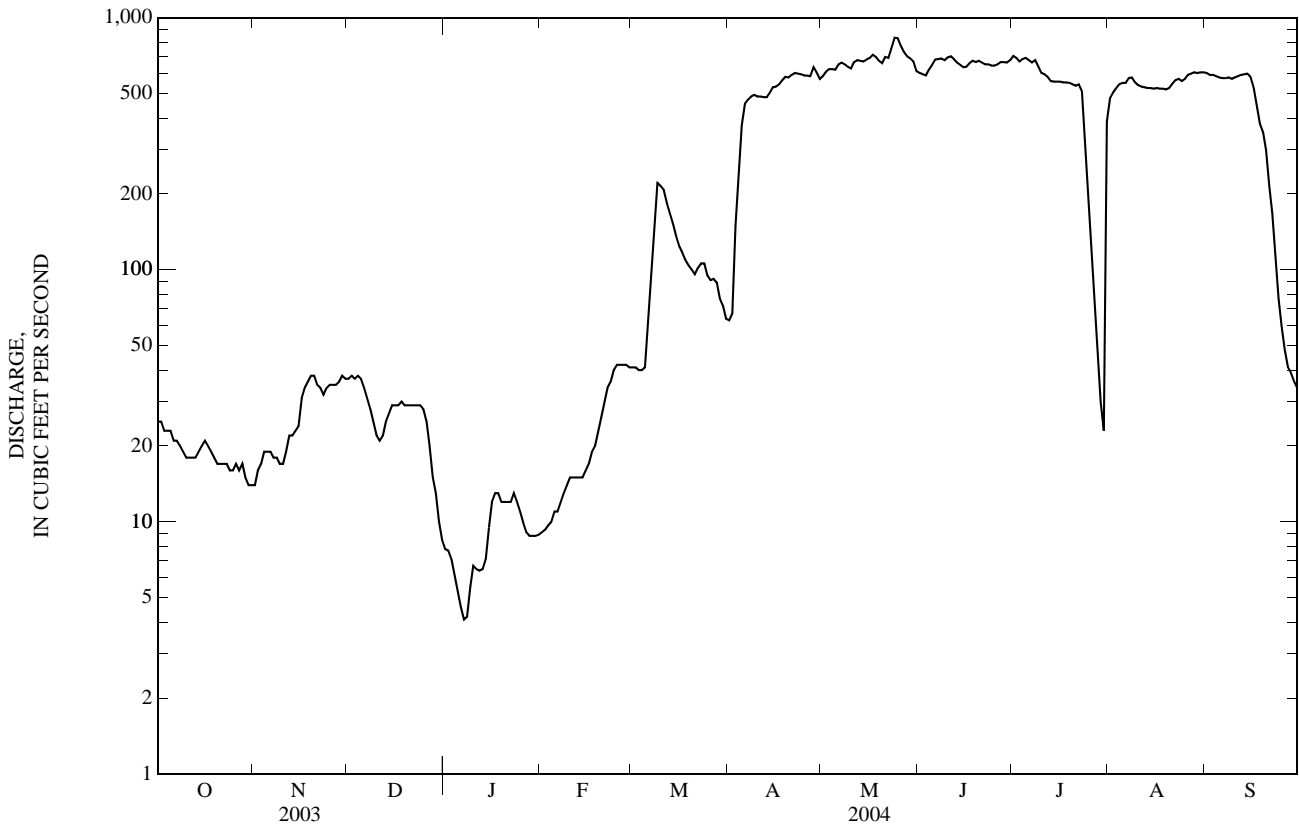
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2004, BY WATER YEAR (WY)\*

MEAN	102	56.6	33.9	30.3	61.1	228	496	659	719	615	552	352
MAX	555	216	133	268	616	1,025	1,384	1,179	1,633	965	795	713
(WY)	(1951)	(1952)	(1952)	(1928)	(1986)	(1972)	(1917)	(1967)	(1953)	(1951)	(1976)	(1959)
MIN	7.83	8.74	2.06	0.00	0.00	3.44	94.5	236	162	192	29.2	3.65
(WY)	(1989)	(2002)	(1923)	(1923)	(1922)	(1922)	(1945)	(1918)	(1952)	(2002)	(1982)	(2001)

06134500 MILK RIVER AT MILK RIVER, ALBERTA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1917 - 2004*	
ANNUAL TOTAL	113,414.5		105,704.1			
ANNUAL MEAN	311		289		326	
HIGHEST ANNUAL MEAN					489	
LOWEST ANNUAL MEAN					157	
HIGHEST DAILY MEAN	2,650	Mar 16	833	May 24	7,840	Jun 11, 2002
LOWEST DAILY MEAN	8.5	Dec 31	4.1	Jan 7	0.00	Jan 19, 1922
ANNUAL SEVEN-DAY MINIMUM	15	Oct 27	5.2	Jan 4	0.00	Jan 19, 1922
MAXIMUM PEAK FLOW			858		9,850	
MAXIMUM PEAK STAGE			3.28		a12.46	
ANNUAL RUNOFF (AC-FT)	225,000		209,700		236,500	
10 PERCENT EXCEEDS	682		667		739	
50 PERCENT EXCEEDS	168		104		158	
90 PERCENT EXCEEDS	20		12		13	

\*--Flow increased during irrigation season by water from St. Mary Canal since 1917.  
a--From floodmarks, backwater from ice.  
e--Estimated.



## MILK RIVER BASIN

06134700 VERDIGRIS COULEE NEAR THE MOUTH, NEAR MILK RIVER, ALBERTA  
(International gaging station)

LOCATION.--Lat 49°06'39", long 111°45'31" (NAD 27), in NW<sup>1</sup>/<sub>4</sub> sec.12, T.2, R.14 W., fourth meridian, in Alberta, Hydrologic Unit 10050002, on left bank, 0.6 mi upstream from mouth, 5 mi downstream from culvert on provincial highway 501, and 15 mi east of Milk River, Alberta.

DRAINAGE AREA.--137 mi<sup>2</sup>, of which 130 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1985 to current season (seasonal records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,040 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Nearly all flow is the result of interbasin diversion from St. Mary River into Weston Lake 25 miles upstream. Environment Canada satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

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			e0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2			e0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3			e0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4			e0.04	0.00	0.00	0.00	0.14	0.00	0.00	0.00		
5			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7			e0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8			e0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9			e0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10			e0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
11			e0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12			e0.11	0.00	0.28	0.00	0.00	0.00	0.00	0.00		
13			e0.11	0.00	0.21	0.00	0.00	0.00	0.00	0.00		
14			e0.11	0.00	0.07	0.00	0.00	0.00	0.00	0.00		
15			e0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00		
16			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19			e0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20			0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
21			0.04	0.00	0.00	0.00	0.00	0.00	0.04	0.00		
22			0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23			0.04	0.00	1.3	0.00	0.00	0.00	0.00	0.00		
24			0.04	0.00	0.53	0.00	0.00	0.00	0.00	0.00		
25			0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00		
26			0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00		
27			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
28			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
29			0.00	0.00	0.04	0.00	0.00	0.00	0.00	e0.00		
30			0.00	0.00	0.07	0.00	0.00	0.00	0.00	e0.00		
31			0.00	---	0.04	---	0.00	0.00	---	e0.00		
TOTAL			2.17	0.00	2.95	0.00	0.14	0.00	0.04	0.00		
MEAN			0.07	0.00	0.10	0.00	0.00	0.00	0.00	0.00		
MAX			0.21	0.00	1.3	0.00	0.14	0.00	0.04	0.00		
MIN			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
AC-FT			4.3	0.00	5.9	0.00	0.3	0.00	0.08	0.00		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1985 - 2004

MEAN	5.53	5.73	6.26	7.09	4.91	5.66	6.53	5.94
MAX	43.9	29.6	20.8	18.1	16.4	24.1	25.5	26.2
(WY)	(1996)	(1996)	(1994)	(1989)	(1991)	(1993)	(1985)	(1986)
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(2001)	(2004)	(1998)	(2000)	(1999)	(1998)	(1999)	(2000)

SUMMARY STATISTICS

FOR 2004 SEASON

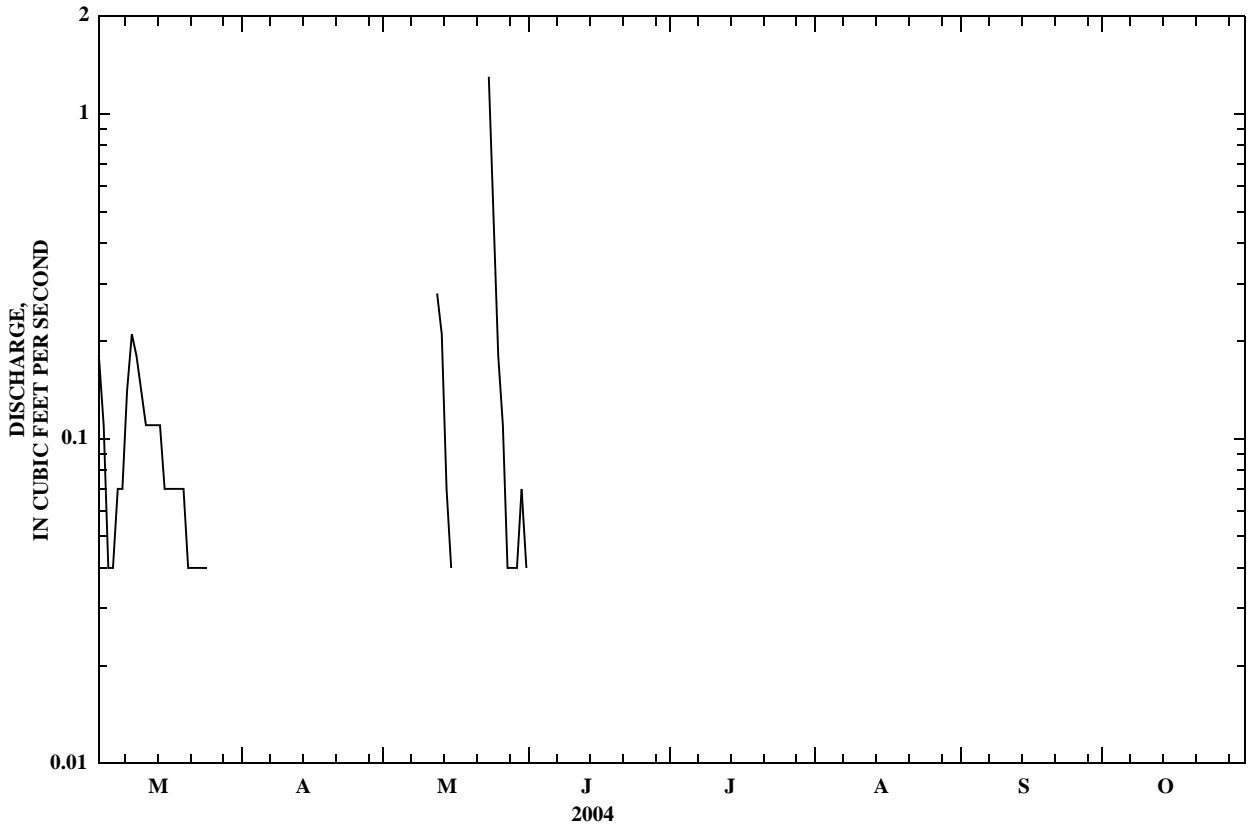
SEASONS 1985-2004

HIGHEST DAILY MEAN	1.3	May 23	264	Mar 11, 1996
LOWEST DAILY MEAN	0.00	many day	0.00	Nov 19, 1985
MAXIMUM PEAK FLOW	2.44	May 23	a280	Mar 11, 1996
MAXIMUM PEAK STAGE	3.48	May 23	6.51	Mar 2, 1994

a--About, gage height not determined (backwater from ice).

e--Estimated.

06134700 VERDIGRIS COULEE NEAR THE MOUTH, NEAR MILK RIVER, ALBERTA—Continued



06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY  
(International gaging station)

LOCATION.--Lat 48°58'30", long 110°25'19" (NAD 27), in NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.9, T.37 N., R.9 E., Hill County, Hydrologic Unit 10050002, on left bank 1.6 mi south of international boundary, 1.7 mi upstream from Lost River, 10 mi northwest of Simpson, 35.5 mi north of Rudyard, and at river mile 479.6.

DRAINAGE AREA.--2,506 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1909 to current season (seasonal records only). A few winter records were collected and are on file in the Helena District office. Monthly discharge only for April 1912, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1927, 1935. WSP 1559: 1920(M), 1922(M), 1926, 1928(M), 1929, 1930(M), 1932(M). WSP 1729: 1912-13, 1921-22, 1929(M). WRD MT-94-1(M). W 1983: Drainage area. WRD MT-98-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,660 ft (NGVD 29). Prior to Mar. 1, 1998, water-stage recorder or nonrecording gages at several sites within 15 mi upstream at different elevation.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since 1917, flow increased during irrigation season by water from St. Mary Canal (station number 05018500). Many diversions for irrigation upstream from station. Bureau of Reclamation satellite telemeter at station.

COOPERATION.--This is one of a number of stations which are maintained jointly by the United States and Canada.

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			e110	97	626	584	686	113	616	82		
2			e110	96	591	644	673	97	628	75		
3			e100	92	562	683	684	86	611	68		
4			e100	88	575	798	690	342	598	62		
5			e100	80	591	715	720	455	581	58		
6			e110	74	603	765	660	467	591	55		
7			e150	86	569	729	671	513	591	52		
8			e400	215	561	749	677	555	585	47		
9			e800	396	579	732	637	560	593	44		
10			e691	425	591	785	599	579	596	41		
11			e478	423	611	734	591	586	589	38		
12			e396	421	685	749	552	580	586	36		
13			e351	419	705	736	518	585	592	35		
14			e290	418	640	734	493	550	616	34		
15			e270	399	618	700	489	543	620	35		
16			e255	411	602	709	540	534	593	39		
17			240	432	600	720	552	531	582	43		
18			205	464	619	666	494	525	569	46		
19			195	469	646	618	479	518	524	46		
20			165	495	654	647	471	513	496	48		
21			136	510	660	711	463	527	416	49		
22			125	535	674	704	443	546	385	51		
23			126	544	855	624	437	692	328	51		
24			114	557	870	618	440	823	265	49		
25			106	585	723	603	444	591	239	49		
26			115	557	801	607	427	567	200	52		
27			116	544	857	607	e300	604	158	52		
28			105	547	810	599	e230	660	129	52		
29			100	568	668	616	184	613	110	50		
30			95	597	771	646	161	596	95	48		
31			95	---	618	---	132	611	---	45		
TOTAL MEAN			6,749	11,544	20,535	20,532	15,537	16,062	14,082	1,532		
MAX			218	385	662	684	501	518	469	49.4		
MIN			800	597	870	798	720	823	628	82		
AC-FT			95	74	561	584	132	86	95	34		
			13,390	22,900	40,730	40,730	30,820	31,860	27,930	3,040		

STATISTICS OF MONTHLY MEAN DATA FOR SEASONS 1917 - 2004\*

MEAN		372	564	711	780	617	543	382	126
MAX		1,522	1,691	1,943	2,561	1,046	886	740	566
(WY)		(1978)	(1965)	(1927)	(2002)	(1951)	(1927)	(1972)	(1990)
MIN		9.88	80.1	257	200	262	77.4	2.21	0.16
(WY)		(2002)	(1945)	(1918)	(1952)	(1977)	(1982)	(2001)	(2002)

SUMMARY STATISTICS

FOR 2004 SEASON

SEASONS 1917 - 2004\*

HIGHEST DAILY MEAN	870	May 24	12,400	Jun 12, 2002
LOWEST DAILY MEAN	34	Oct. 14	0.00	Feb 1, 1922
MAXIMUM PEAK FLOW	a1,140	May 23	c14,440	Jun 12, 2002
MAXIMUM PEAK STAGE	b5.03	Mar 8	15.03	Mar 13, 1996

\*--Flow increased during irrigation season by water from St. Mary Canal since 1917.

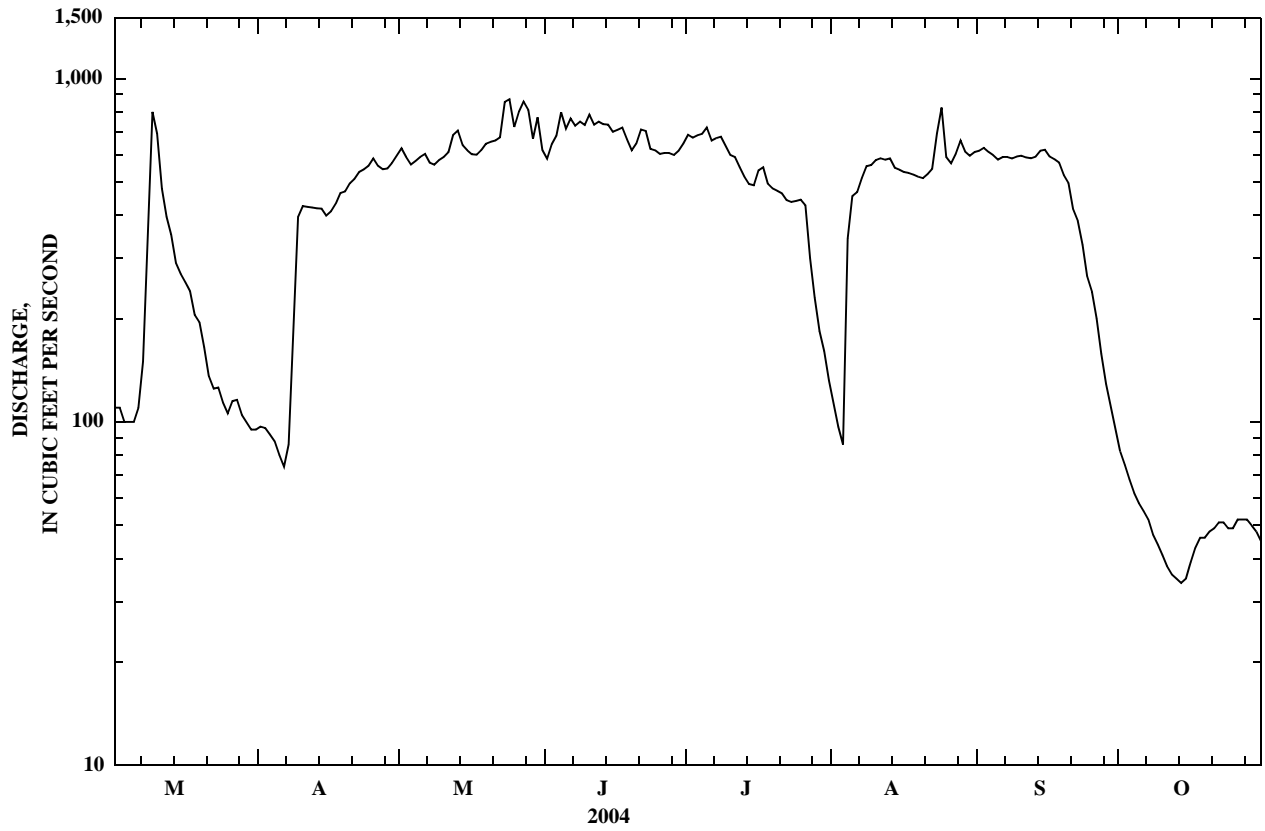
a--Gage height, 4.23 ft.

b--Backwater from ice.

c--Gage height, 10.78 ft, from floodmarks.

e--Estimated.

06135000 MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY—Continued



## 06137400 BIG SANDY CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT

LOCATION.--Lat 48°10'27", long 109°49'23" (NAD 27), in SW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 20, T.28 N., R.15 E., Chouteau County, Hydrologic Unit 10050005, on left bank 0.9 mi downstream from Muddy Creek, 6.0 mi south of Rocky Boy Agency, and at river mile 90.6.

DRAINAGE AREA.--24.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,830 ft (NGVD 29). Prior to Sept. 6, 2001, water-stage recorder at site 0.1 mi downstream at different elevation.

REMARKS.--Records good except those for flows over 15 ft<sup>3</sup>/s, which are fair and those for estimated daily discharges, which are poor. No known regulation or diversions upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperatures 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	1.6	e2.1	e2.2	e1.6	1.9	e2.2	8.3	4.9	20	18	6.4	4.9
2	1.7	e2.3	2.1	e1.5	1.9	2.3	6.6	4.5	18	18	6.3	4.9
3	1.6	e2.3	2.0	e1.5	1.9	e2.3	6.2	4.3	17	17	7.9	4.8
4	1.7	e2.3	e1.9	e1.5	1.9	2.3	7.0	4.2	16	18	8.0	4.7
5	1.6	e2.2	e2.0	e1.4	1.9	e2.3	7.8	4.0	15	19	6.7	4.6
6	1.6	2.3	2.2	e1.5	1.9	2.3	7.5	3.8	20	16	6.5	4.5
7	1.7	2.3	2.1	e1.5	2.0	e2.4	7.2	3.7	19	14	6.9	4.4
8	1.7	2.3	2.0	e1.6	2.2	2.6	6.6	3.6	18	13	7.2	4.4
9	1.7	2.3	e2.0	e1.6	2.3	3.5	6.1	3.6	16	13	6.6	4.3
10	1.6	2.4	e1.8	e1.7	2.3	4.4	5.6	3.5	16	13	6.3	4.2
11	1.7	2.4	e1.7	e1.7	2.2	5.7	5.5	3.9	22	12	6.0	4.0
12	1.7	2.3	e1.6	e1.7	2.3	4.4	5.3	4.4	40	12	5.7	4.5
13	1.9	2.3	1.7	e1.7	2.3	4.4	5.3	4.0	37	11	5.6	5.1
14	1.9	2.3	2.0	1.7	2.3	4.9	5.3	3.9	34	10	5.5	5.4
15	2.1	2.2	e2.0	1.7	2.3	3.5	5.3	3.8	33	10	5.3	5.1
16	2.0	2.2	e2.1	1.7	2.2	3.5	5.4	3.8	31	9.7	5.2	4.6
17	2.0	2.2	1.9	1.7	2.2	3.6	5.3	3.5	29	9.5	5.2	4.5
18	1.9	2.3	e1.8	1.8	2.2	4.4	5.1	3.7	27	9.0	5.1	4.4
19	1.9	2.8	1.8	1.8	2.3	7.5	4.9	8.8	26	9.1	5.1	4.9
20	1.9	3.1	1.9	1.8	e2.7	6.4	4.6	6.5	25	8.9	4.9	7.3
21	1.9	e2.5	1.9	1.8	e4.0	5.0	4.4	5.7	24	8.5	5.0	6.6
22	1.9	e2.1	e1.8	1.9	e4.5	5.3	4.4	8.1	23	8.2	5.3	5.4
23	1.9	1.9	1.8	1.9	2.5	6.4	4.3	11	23	8.1	12	5.1
24	1.9	2.1	1.8	1.8	2.6	7.8	4.1	13	23	7.8	18	4.7
25	1.9	2.2	1.8	1.9	2.2	7.3	4.1	13	22	7.4	8.2	4.6
26	2.0	2.2	1.9	1.8	2.2	7.3	3.9	19	24	7.0	8.3	4.5
27	2.0	e2.0	e1.7	1.9	2.4	7.4	3.7	17	23	7.1	7.1	4.4
28	2.6	2.1	e1.7	1.9	2.2	6.6	4.7	16	21	7.1	6.3	4.4
29	5.7	2.2	e1.7	2.0	2.2	6.1	5.1	17	20	7.1	6.2	4.6
30	3.4	2.2	e1.6	2.0	---	7.0	5.4	35	20	7.0	5.8	4.5
31	2.6	---	e1.6	1.9	---	8.1	---	23	---	6.5	5.2	---
TOTAL	63.3	68.4	58.1	53.5	68.0	149.2	165.0	264.2	702	342.0	209.8	144.3
MEAN	2.04	2.28	1.87	1.73	2.34	4.81	5.50	8.52	23.4	11.0	6.77	4.81
MAX	5.7	3.1	2.2	2.0	4.5	8.1	8.3	35	40	19	18	7.3
MIN	1.6	1.9	1.6	1.4	1.9	2.2	3.7	3.5	15	6.5	4.9	4.0
AC-FT	126	136	115	106	135	296	327	524	1,390	678	416	286

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2004, BY WATER YEAR (WY)

MEAN	5.18	4.57	4.07	3.45	4.21	6.43	10.4	13.5	16.8	12.7	6.38	5.26
MAX	14.0	11.1	11.8	9.44	21.7	28.0	32.6	68.3	50.0	53.7	29.3	18.8
(WY)	(1986)	(1994)	(1996)	(1996)	(1996)	(1996)	(1994)	(1986)	(1982)	(1993)	(1993)	(1993)
MIN	0.66	0.92	0.81	0.71	0.76	0.90	3.67	1.84	1.42	1.01	0.50	0.65
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1988)	(1988)	(2001)	(1988)	(2001)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 1982 - 2004

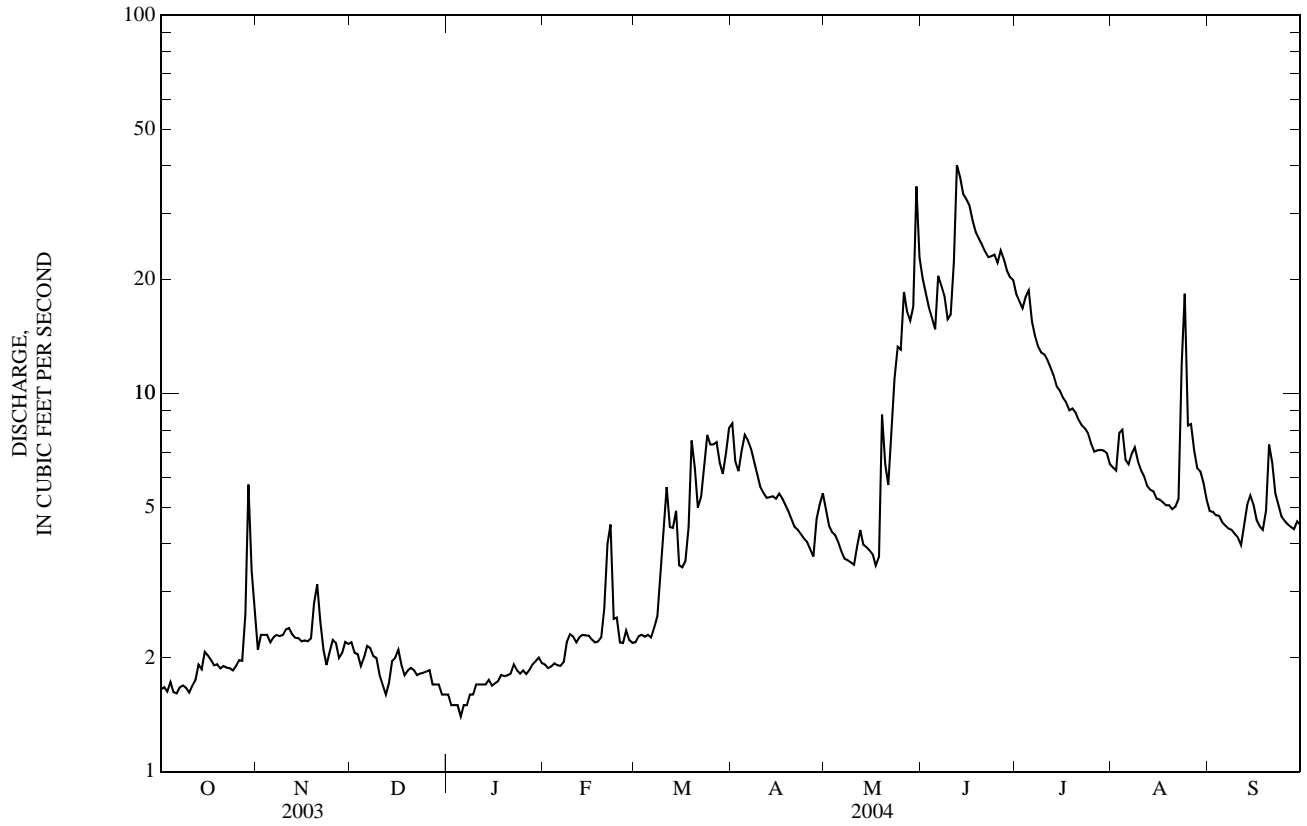
ANNUAL TOTAL	1,351.99	2,287.8		
ANNUAL MEAN	3.70	6.25	7.60	
HIGHEST ANNUAL MEAN			18.1	1986
LOWEST ANNUAL MEAN			1.79	2001
HIGHEST DAILY MEAN	50	Mar 14	40	Jun 12, 1998
LOWEST DAILY MEAN	0.60	Feb 23	1.4	Jan 5, 1988
ANNUAL SEVEN-DAY MINIMUM	0.74	Feb 22	1.5	Jan 1, 1988
MAXIMUM PEAK FLOW			51	May 30, 1998
MAXIMUM PEAK STAGE			2.05	May 30, 1998
INSTANTANEOUS LOW FLOW				6.07, Jun 27, 1998
ANNUAL RUNOFF (AC-FT)	2,680	4,540	5,510	Jun 26, 1992
10 PERCENT EXCEEDS	7.8	17	16	
50 PERCENT EXCEEDS	1.9	4.3	4.5	
90 PERCENT EXCEEDS	0.93	1.7	1.5	

a--On basis of slope-area measurement of peak flow.

b--Gage height, 2.32 ft, site and datum then in use.

e--Estimated.

06137400 BIG SANDY CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT—Continued





## 06139500 BIG SANDY CREEK NEAR HAVRE, MT

LOCATION.--Lat 48°31'36", long 109°50'27" (NAD 27), in SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.18, T.32 N., R.15 E., Hill County, Hydrologic Unit 10050005, on right bank, 6 mi upstream from mouth, 7.7 mi west southwest of Havre post office, and 22 mi downstream from Sage Creek.

DRAINAGE AREA.--1,805 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1946 to November 1953 (monthly discharge only for February 1946, published in WSP 1309 as "Big Sandy Creek near Assiniboine"), annual maximum, water years 1955-67 (published as "Big Sandy Creek near Assiniboine"), and May 1984 to current year (seasonal records only).

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,510 ft (NGVD 29).

REMARKS.--Records fair. Diversions for irrigation of about 1,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 30, 1978, reached a stage of 15.15 ft, from floodmarks, discharge, about 6,000 ft<sup>3</sup>/s.

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				7.9	1.5	20	30	3.0	1.5			
2				8.1	1.3	37	24	2.4	1.5			
3				7.2	1.5	29	19	2.4	2.1			
4				6.5	1.3	23	22	0.91	2.0			
5				6.3	1.2	19	21	0.61	1.6			
6				6.0	1.3	21	16	0.58	1.4			
7				4.8	1.1	21	13	0.50	1.2			
8				3.7	1.0	20	10	0.41	1.0			
9				3.2	1.0	24	9.2	0.38	0.83			
10				2.5	1.0	26	8.7	0.30	0.87			
11				1.8	1.2	24	8.3	0.29	0.88			
12				4.7	1.5	21	7.9	0.30	0.98			
13				5.0	1.8	18	7.3	0.26	1.1			
14				3.4	1.7	17	6.8	0.27	1.3			
15				1.9	1.6	24	8.0	0.26	1.4			
16				2.0	1.3	35	8.9	0.24	1.3			
17				2.0	1.1	30	9.0	0.22	1.2			
18				2.6	1.0	26	8.7	0.19	1.2			
19				3.5	1.6	27	7.5	0.18	1.1			
20				2.2	2.0	26	6.8	0.18	1.2			
21				1.9	2.3	23	5.8	0.19	1.2			
22				3.4	2.3	21	5.3	0.19	1.0			
23				3.0	5.3	20	5.1	0.21	1.00			
24				3.2	26	18	5.1	0.37	0.88			
25				2.9	23	15	4.7	0.77	1.8			
26				2.6	45	12	4.3	0.91	e2.4			
27				2.3	47	11	4.0	0.82	e1.9			
28				2.2	29	10	3.8	0.82	e1.3			
29				2.1	28	12	3.5	1.1	e0.90			
30				2.0	26	27	3.5	2.4	e1.0			
31				---	21	---	3.0	1.9	---			
TOTAL				110.9	281.9	657	300.2	23.56	39.04			
MEAN				3.70	9.09	21.9	9.68	0.76	1.30			
MAX				8.1	47	37	30	3.0	2.4			
MIN				1.8	1.0	10	3.0	0.18	0.83			
AC-FT				220	559	1,300	595	47	77			

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004\*

	0.48	6.68	61.3	60.5	14.1	26.1	17.7	5.43	4.17	7.96	0.04	0.02
MEAN	0.48	6.68	61.3	60.5	14.1	26.1	17.7	5.43	4.17	7.96	0.04	0.02
MAX	3.39	19.5	343	1,218	108	222	137	85.9	54.4	54.5	0.31	0.14
(WY)	(1947)	(1947)	(1947)	(1952)	(1986)	(1953)	(1993)	(1993)	(1993)	(1987)	(1953)	(1953)
MIN	0.00	0.00	0.63	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1948)	(1948)	(1949)	(2002)	(1949)	(1949)	(1946)	(1946)	(1946)	(1947)	(1947)	(1947)

## SUMMARY STATISTICS

## FOR THE 2004 SEASON

## SEASONS 1946 - 2004\*

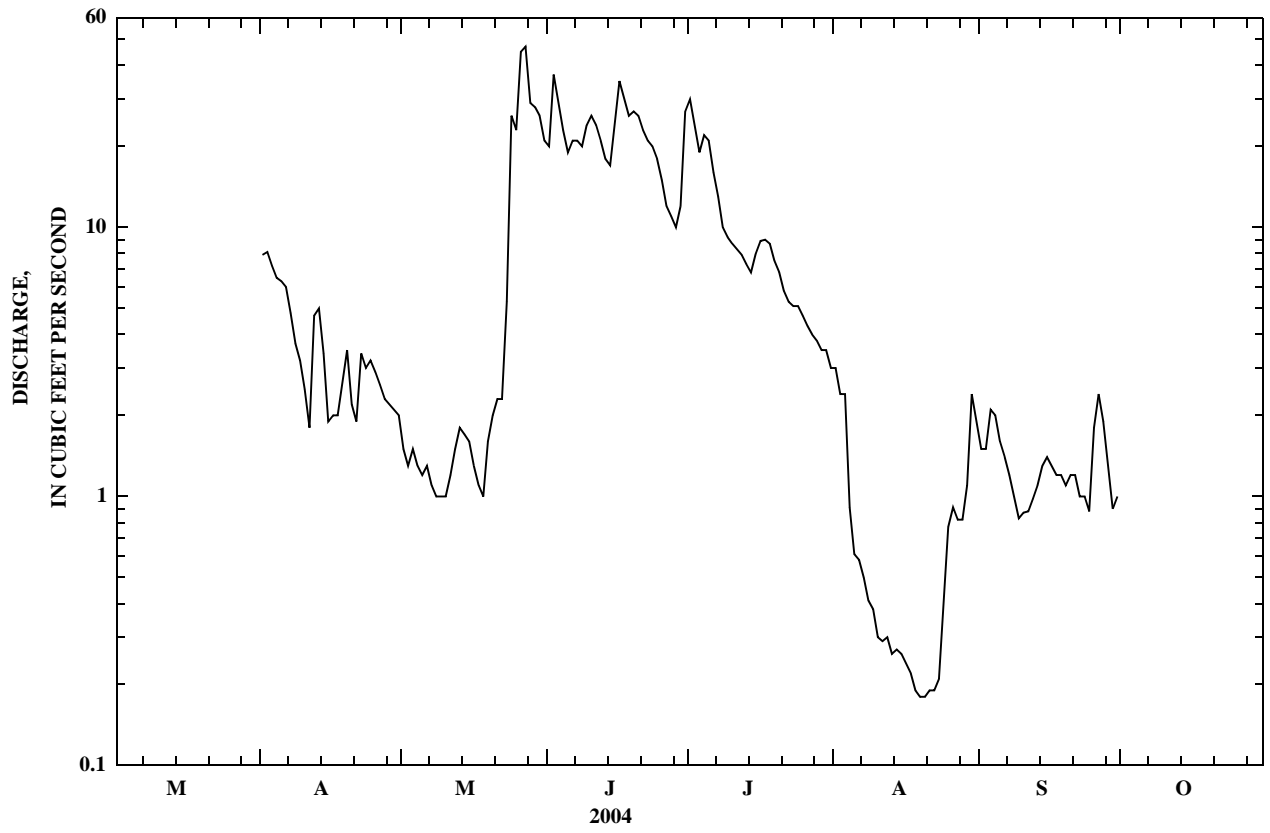
HIGHEST DAILY MEAN	47	May 27	5,100	Apr 3, 1952
LOWEST DAILY MEAN	0.18	Aug 19	0.00	many days
MAXIMUM PEAK FLOW	498	Mar 10	5,570	Apr 3, 1952
MAXIMUM PEAK STAGE	7.09	Mar 10	a14.70	Apr 3, 1952

\*--During period of operation.

a--From floodmarks.

e--Estimated.

06139500 BIG SANDY CREEK NEAR HAVRE, MT—Continued



## 06139900 BEAVER CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT

LOCATION.--Lat 48°13'17", long 109°39'01" (NAD 27), in NW¼NW¼NE¼ sec. 3, T.28 N., R.16 E., Hill County, Hydrologic Unit 10050004, in Rocky Boy.s Indian Reservation, on left bank, 20 ft upstream from reservation boundary, 0.4 mi upstream from Blackie Coulee, 6.7 mi southeast of Rocky Boy, 25 mi south of Havre, and at river mile 39.9.

DRAINAGE AREA.--16.1 mi<sup>2</sup>.

PERIOD OF RECORD.--July 2001 to September 2004, (discontinued). Miscellaneous measurements and water-quality samples were obtained at this site between 1982 and 1991.

GAGE.--Water-stage recorder. Elevation of gage is 4,200 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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	0.77	2.2	1.4	e0.70	1.1	1.5	8.4	5.2	55	20	4.0	2.6
2	0.76	2.2	1.4	e0.70	1.1	1.5	6.8	4.6	50	19	3.9	2.7
3	0.71	2.1	1.4	e0.60	1.1	1.3	6.6	4.6	35	17	4.3	2.7
4	0.72	e1.7	1.3	e0.60	0.98	1.5	8.2	4.5	20	18	4.1	2.6
5	0.70	1.3	1.1	e0.50	0.95	1.2	10	4.3	14	19	4.2	2.5
6	0.70	e1.7	1.4	e0.60	0.93	1.4	10	4.1	16	13	4.2	2.5
7	0.70	e1.5	1.4	e0.70	0.92	1.4	10	3.8	16	12	4.2	2.5
8	0.65	e1.4	1.3	e0.90	0.91	3.2	8.9	3.5	18	12	4.6	2.4
9	0.69	1.4	1.3	1.0	0.89	6.6	8.0	3.3	15	14	4.1	2.4
10	0.73	1.5	1.0	1.2	0.91	8.0	7.1	3.0	13	11	3.7	2.4
11	0.76	1.6	0.85	1.2	0.91	6.2	6.7	3.3	21	7.0	3.4	2.3
12	0.82	1.5	0.93	1.2	1.1	5.5	6.3	3.4	58	7.6	3.0	2.7
13	0.92	1.5	1.0	1.2	1.1	5.0	6.6	3.7	67	6.3	2.8	3.6
14	1.1	1.5	1.0	1.2	1.0	4.3	7.1	3.8	53	6.1	2.6	3.8
15	e1.3	1.5	0.98	1.2	1.00	4.0	7.6	3.6	49	5.9	2.5	3.3
16	1.4	1.5	0.98	1.3	0.98	4.0	8.2	3.3	35	5.7	2.4	3.1
17	1.3	1.5	0.90	1.3	1.0	5.9	7.7	2.9	29	5.5	2.4	2.9
18	1.2	1.6	0.92	1.3	1.3	6.5	7.5	2.9	25	5.3	2.3	2.8
19	1.1	2.4	0.94	1.2	1.6	8.3	6.7	6.4	22	5.3	2.5	3.4
20	1.0	2.9	0.96	1.2	1.5	7.2	5.9	5.7	21	5.4	2.3	6.7
21	0.92	1.9	0.98	1.2	1.3	6.8	5.6	5.2	18	5.1	2.3	5.3
22	0.91	1.5	1.0	1.2	1.3	6.2	5.2	9.0	18	4.9	2.5	3.9
23	0.89	1.4	1.0	1.2	1.4	5.5	4.9	15	16	4.9	4.7	3.5
24	0.89	1.8	0.98	1.1	1.4	6.5	4.8	17	15	4.9	9.5	3.1
25	0.87	1.8	0.94	0.71	1.5	6.5	4.3	19	18	4.5	5.1	2.8
26	0.88	1.6	0.94	e0.70	1.5	6.3	4.3	31	30	4.4	5.0	2.7
27	0.93	1.5	0.52	e0.60	1.7	6.8	4.2	29	22	4.4	4.2	2.5
28	1.2	1.5	e0.80	e0.80	1.7	6.4	5.1	24	20	4.3	3.8	2.4
29	5.0	1.5	e0.80	e1.0	1.6	6.2	5.4	21	23	4.4	3.9	2.5
30	3.2	1.6	e0.70	1.2	---	7.0	5.7	64	21	4.3	3.4	2.4
31	e3.0	---	e0.70	1.2	---	8.4	---	67	---	4.1	3.0	---
TOTAL	36.72	50.6	31.82	30.71	34.68	157.1	203.8	381.1	833	265.3	114.9	91.0
MEAN	1.18	1.69	1.03	0.99	1.20	5.07	6.79	12.3	27.8	8.56	3.71	3.03
MAX	5.0	2.9	1.4	1.3	1.7	8.4	10	67	67	20	9.5	6.7
MIN	0.65	1.3	0.52	0.50	0.89	1.2	4.2	2.9	13	4.1	2.3	2.3
AC-FT	73	100	63	61	69	312	404	756	1,650	526	228	180

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
MEAN	1.75	1.56	0.86	0.76	0.97	4.88	6.74	8.07	20.0	4.19	2.28	1.55
MAX	3.50	2.35	1.24	1.13	1.20	9.06	9.00	12.3	27.9	8.56	4.61	3.03
(WY)	(2003)	(2003)	(2003)	(2003)	(2004)	(2003)	(2003)	(2004)	(2002)	(2004)	(2002)	(2004)
MIN	0.58	0.63	0.33	0.16	0.55	0.50	4.44	5.25	4.40	0.59	0.31	0.20
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2001)	(2003)	(2001)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 2001 - 2004

ANNUAL TOTAL	1,134.87	2,230.73		
ANNUAL MEAN	3.11	6.09	4.65	
HIGHEST ANNUAL MEAN			6.09	2004
LOWEST ANNUAL MEAN			3.38	2003
HIGHEST DAILY MEAN	41	Mar 14	67	May 31
LOWEST DAILY MEAN	0.19	Aug 16	0.50	Jan 5
ANNUAL SEVEN-DAY MINIMUM	0.22	Sep 2	0.63	Dec 31
MAXIMUM PEAK FLOW			105	May 30
MAXIMUM PEAK STAGE			3.36	May 30
INSTANTANEOUS LOW FLOW				0.00
ANNUAL RUNOFF (AC-FT)	2,250	4,420	3,370	
10 PERCENT EXCEEDS	7.9	16	9.6	
50 PERCENT EXCEEDS	1.3	2.8	1.9	
90 PERCENT EXCEEDS	0.36	0.91	0.38	

e--Estimated.

06139900 BEAVER CREEK AT RESERVATION BOUNDARY, NEAR ROCKY BOY, MT—Continued

