

## 06295000 YELLOWSTONE RIVER AT FORSYTH, MT

LOCATION.--Lat 46°15'58", long 106°41'24" (NAD 27), in NE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.23, T.6 N., R.40 E., Rosebud County, Hydrologic Unit 10100001, on right bank 0.3 mi downstream from U.S. Highway 12 bridge, at Forsyth, and at river mile 238.2.

DRAINAGE AREA.--40,146 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 16, 1921 to September 30, 1923 (no winter records), October 1977 to current year. Miscellaneous discharge measurements were made in 1974 to 1976 and are available in files of Helena district office.

REVISED RECORDS.--WDR MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,504.62 ft (NGVD 29), from nearby elevation determined by City of Forsyth. July 1921 to March 1922, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at different elevation. March 1922 to September 1923, nonrecording gage on discontinued highway bridge 10 ft downstream from gage at elevation 2 ft higher.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 838,000 acres upstream from station. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, revised, on Bighorn River. Small diversion dam about 4,200 ft downstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1918 reached a stage of about 20 ft, elevation used in 1921, information from local residents.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,500	4,990	e4,100	e4,300	e3,500	e4,300	4,380	5,050	10,500	15,000	5,980	4,390
2	3,610	5,040	e4,300	e3,700	e3,400	e4,400	4,280	5,050	9,450	15,800	5,840	4,060
3	3,640	4,730	e4,300	e3,700	e3,400	e4,400	4,460	4,270	8,330	15,500	5,630	4,070
4	3,590	e4,300	e4,200	e4,000	e3,900	e4,500	4,780	3,920	7,710	14,900	5,380	4,250
5	3,560	e4,500	e4,200	e3,900	e3,600	e4,500	5,110	3,950	7,940	14,300	5,380	4,600
6	3,540	e4,500	e4,200	e3,600	e3,600	e4,500	5,080	5,020	9,750	15,000	5,630	4,740
7	3,490	e4,500	e4,200	e3,300	e3,900	4,600	4,970	7,070	13,400	16,000	5,380	4,710
8	3,480	e4,200	e4,100	e3,300	e4,000	4,650	5,290	9,500	17,500	14,700	5,180	4,550
9	3,470	e4,100	e4,200	e3,400	e4,000	4,860	5,650	10,600	19,500	13,700	5,030	4,460
10	3,420	e4,100	e4,400	e3,600	e4,000	4,770	6,010	10,900	18,500	13,400	4,840	4,460
11	3,540	e4,200	e4,400	e4,000	e4,000	4,850	6,530	10,600	21,100	12,400	4,550	4,350
12	3,710	e4,400	e4,500	e4,300	e4,000	5,060	6,470	9,840	29,200	11,300	4,260	4,260
13	3,840	e4,600	e4,500	e4,400	e3,800	5,110	6,000	9,550	26,300	10,600	4,050	4,240
14	3,990	4,700	e4,300	e4,500	e3,400	4,900	5,650	9,300	22,500	9,890	3,800	4,440
15	4,090	4,670	e4,300	e4,500	e3,200	4,800	5,500	8,090	19,400	9,270	3,670	4,610
16	4,220	4,640	e4,400	e4,500	e3,400	4,670	5,630	7,180	17,200	8,700	3,590	4,630
17	4,260	4,600	e4,500	e4,500	e3,600	4,570	6,060	6,540	16,200	8,460	3,470	4,890
18	4,180	4,590	4,550	e4,500	e3,800	4,500	6,130	6,090	15,600	8,290	3,320	5,270
19	4,140	4,580	4,520	e4,500	e4,000	4,460	5,770	5,990	14,700	7,980	3,200	5,190
20	4,170	4,570	4,570	e4,600	e4,200	4,440	5,370	5,950	14,000	7,610	3,230	5,420
21	4,610	4,700	4,600	e4,600	e4,200	4,500	5,330	6,000	13,600	7,550	3,410	5,630
22	4,440	4,700	4,600	e4,600	e4,200	4,520	5,320	6,850	13,400	8,290	3,530	5,800
23	4,270	e4,600	4,690	e4,600	e4,200	4,590	4,970	7,400	12,900	7,960	3,450	5,960
24	4,000	e4,200	4,650	e4,600	e4,200	4,530	4,700	8,300	12,900	7,810	3,360	6,080
25	4,170	e4,000	e4,500	e4,600	e4,200	4,430	4,370	9,540	13,600	7,850	3,280	5,880
26	4,180	e4,000	e4,500	e4,600	e4,200	4,500	4,330	9,600	15,200	7,530	3,310	5,710
27	4,240	e3,900	e4,400	e4,500	e4,200	4,670	4,190	8,720	16,600	7,000	3,650	5,690
28	4,270	e3,900	e4,600	e4,500	e4,200	4,810	3,970	7,920	16,900	6,610	4,000	5,810
29	4,480	e4,000	e4,600	e4,400	e4,200	4,800	3,860	7,610	16,400	6,490	5,090	5,660
30	4,570	e4,000	e4,100	e4,000	---	4,700	4,080	7,970	15,300	6,310	5,110	5,570
31	4,740	---	e4,200	e3,500	---	4,540	---	10,300	---	6,110	4,760	---
TOTAL	123,410	132,510	136,180	129,600	112,500	143,430	154,240	234,670	465,580	322,310	134,360	149,380
MEAN	3,981	4,417	4,393	4,181	3,879	4,627	5,141	7,570	15,520	10,400	4,334	4,979
MAX	4,740	5,040	4,690	4,600	4,200	5,110	6,530	10,900	29,200	16,000	5,980	6,080
MIN	3,420	3,900	4,100	3,300	3,200	4,300	3,860	3,920	7,710	6,110	3,200	4,060
AC-FT	244,800	262,800	270,100	257,100	223,100	284,500	305,900	465,500	923,500	639,300	266,500	296,300

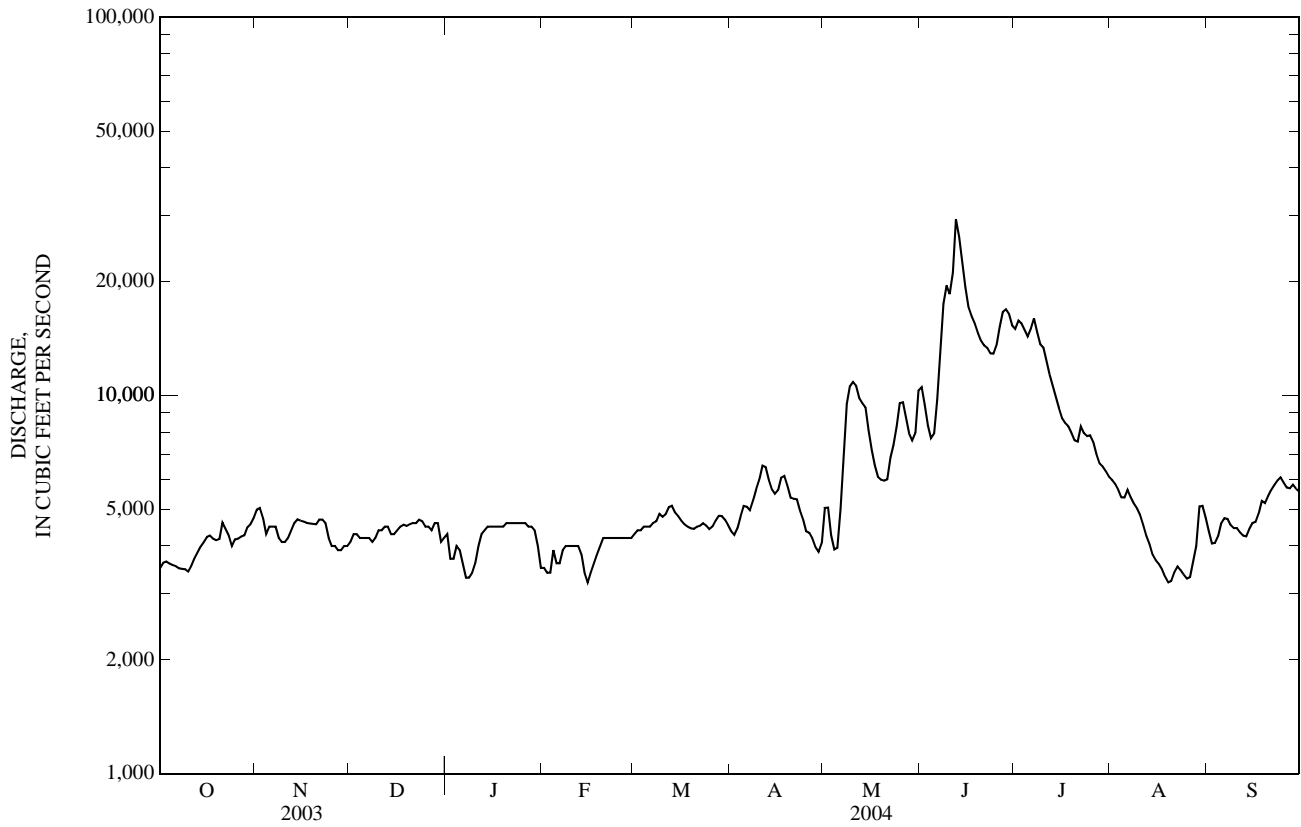
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	7,256	6,804	5,954	5,580	5,970	6,959	7,562	16,760	29,130	17,660	7,850	6,761
MAX	10,720	10,490	8,927	7,796	10,210	15,120	13,270	27,850	63,710	34,430	17,570	11,320
(WY)	(1983)	(1983)	(1983)	(1983)	(1997)	(1979)	(1997)	(1997)	(1997)	(1982)	(1997)	(1978)
MIN	3,519	4,186	3,624	3,242	3,511	3,223	4,220	7,570	14,690	6,135	2,742	2,723
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(1981)	(2004)	(1987)	(1988)	(2001)	(2001)

06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	2,753,190		2,238,170			
ANNUAL MEAN	7,543		6,115		10,360	
HIGHEST ANNUAL MEAN					17,590	
LOWEST ANNUAL MEAN					6,026	
HIGHEST DAILY MEAN	49,100	Jun 3	29,200	Jun 12	97,000	May 21, 1978
LOWEST DAILY MEAN	2,700	Jan 24	3,200	Feb 15	1,400	Nov 23, 1977
ANNUAL SEVEN-DAY MINIMUM	3,190	Jan 22	3,350	Aug 19	2,030	Aug 26, 2001
MAXIMUM PEAK FLOW			a30,800	Jun 12	106,000	May 21, 1978
MAXIMUM PEAK STAGE			b6.93	Nov 25	14.53	May 21, 1978
ANNUAL RUNOFF (AC-FT)	5,461,000		4,439,000		7,507,000	
10 PERCENT EXCEEDS	14,900		11,000		21,800	
50 PERCENT EXCEEDS	4,400		4,590		7,100	
90 PERCENT EXCEEDS	3,480		3,630		4,240	

a--Gage height, 6.43 ft.  
 b--Backwater from ice.  
 e--Estimated.



## 06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

## WATER-QUALITY DATA

PERIOD OF RECORD.--Water years 1974 to 1982, January 1999 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1978 to September 1979 (seasonal records).

SUSPENDED-SEDIMENT DISCHARGE: March 1978 to September 1981.

REMARKS.--Samples collected this year as part of the National Water-Quality Assessment Program (NAWQA) for the Yellowstone River study unit under the direction of the Wyoming District.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum observed, 26.0°C, July 27, 1978, Aug. 3 and 7, 1979.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily mean, 4,010 mg/L, May 19, 1978; minimum daily mean 5 mg/L, Dec. 23, 1979.

SEDIMENT LOAD: Maximum daily, 761,000 tons, May 20, 1978; minimum daily 74 tons, Apr. 18, 1981.

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
OCT													
10...	0830	5,280	693	8.7	94	8.4	619	8.5	14.0	152	142	172	1
NOV													
21...	1330	5,380	695	13.7	110	7.2	642	-1.0	2.5	163	144	176	--
DEC													
17...	1600	E4,500	705	13.2	98	8.2	649	6.5	0.0	162	182	222	--
JAN													
23...	1000	E4,600	693	10.8	81	8.5	664	8.5	0.0	156	196	239	--
FEB													
25...	1700	E4,200	698	12.1	91	7.5	659	10.0	0.0	143	146	177	.0
MAR													
24...	1500	4,520	687	10.7	107	8.2	679	23.5	11.0	159	152	176	5
MAY													
26...	1100	9,640	678	9.7	105	7.8	439	20.5	13.5	108	111	135	--
JUN													
15...	1200	19,300	696	9.2	105	7.9	300	22.0	17.5	80	74	91	--
JUL													
15...	1000	9,420	685	8.8	116	8.3	356	31.0	23.5	95	85	101	1
AUG													
27...	1030	3,610	701	9.2	104	8.4	647	23.5	17.0	153	133	145	8
SEP													
08...	1200	4,550	696	9.6	108	8.4	616	21.5	16.5	153	137	165	1

E--Estimated.

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

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-fluralin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF (82687)
OCT 10...	9.05	158	<.04	.08	<.008	.42	<.006	.027	16	228	<.006	E.004	<.006	<.005	<.005	E.007	<.050	<.010	<.004	E.005	<.020	<.005	<.006
NOV 21...	9.08	163	<.04	.35	E.005	.62	<.006	.027	16	232	<.006	<.006	<.006	<.005	<.005	E.007	<.050	<.010	<.004	<.041	<.020	<.005	<.006
DEC 17...	8.96	167	E.03	.51	E.005	.71	<.006	.021	15	E182	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
JAN 23...	9.04	168	<.04	.51	E.004	.75	<.006	.014	4	E49.7	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
FEB 25...	8.89	175	.06	.39	E.007	.96	.006	.100	88	E998	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
MAR 24...	9.90	181	<.04	.37	.012	.86	<.006	.069	48	586	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
MAY 26...	6.29	102	E.02	.29	.016	.46	.012	.23	218	5,670	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
JUN 15...	3.69	55.0	<.04	.20	.010	.39	.013	.30	318	16,600	<.006	<.006	<.006	<.005	<.005	E.006	<.050	<.010	<.004	<.041	<.020	<.005	<.006
JUL 15...	5.08	72.7	<.04	.09	<.008	.37	<.006	.071	55	1,400	<.006	<.006	<.006	<.005	<.005	.017	<.050	<.010	<.004	<.041	<.020	<.005	<.006
AUG 27...	9.46	170	<.04	E.03	<.008	.41	<.006	.045	23	224	<.006	<.010	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005	<.006
SEP 08...	8.50	150	<.04	.15	E.005	.52	<.006	.056	37	455	<.006	<.006	<.006	<.005	<.005	<.010	<.050	<.010	<.004	<.041	<.020	<.005	<.006

E--Estimated.

## 06295000 YELLOWSTONE RIVER AT FORSYTH, MT—Continued

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

Date	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf- inyl fipro- nil, water, fltrd, ug/L (62170)	Diazi- non, water, fltrd, ug/L (39572)	Diel- drin, water, fltrd, ug/L (39381)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Desulf- inyl- fipro- nil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)
NOV 21...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
JAN 23...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
MAR 24...	<.018	<.003	<.012	<.005	<.009	<.02	<.020	<.009	<.005	<.029	<.013	<.024	<.016
MAY 26...	<.018	<.003	<.012	<.005	<.009	<.02	.016	<.009	<.005	<.029	<.013	<.024	<.016
JUN 15...	<.018	<.003	<.012	<.005	<.009	<.02	<.106	<.009	<.005	<.029	<.013	<.024	<.016
JUL 15...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
AUG 27...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
SEP 08...	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005	<.029	<.013	<.024	<.016
Date	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala- thion, water, fltrd, ug/L (39532)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)
NOV 21...	<.003	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JAN 23...	<.003	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022
MAR 24...	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022
MAY 26...	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JUN 15...	<.003	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022
JUL 15...	<.003	<.004	<.035	<.027	<.015	.023	<.006	<.003	<.007	<.003	<.010	<.004	<.022
AUG 27...	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007	<.003	<.010	<.004	<.022
SEP 08...	<.003	<.004	<.035	<.027	<.015	.016	<.006	<.003	<.007	<.003	<.010	<.004	<.022
Date	Phorate water fltrd 0.7u GF ug/L (82664)	Prome- ton, water, fltrd, ug/L (04037)	Propy- zamide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Simaz- ine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
NOV 21...	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.006	<.009
JAN 23...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
MAR 24...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.004	<.009
MAY 26...	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.008	<.009
JUN 15...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	.003	<.009
JUL 15...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
AUG 27...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009
SEP 08...	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009

E--Estimated.

## 451302106583201 ROSEBUD CREEK NEAR ROSEBUD BATTLEFIELD, NEAR KIRBY, MT

LOCATION.--Lat 45°13'02", long 106°58'32" (NAD 27), NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 20, T.7S., R.39E., Bighorn County, Hydrologic Unit 10100003, at farm road crossing, on Kobold Ranch 0.1 mi south of county road, and about 15 mi south of Busby.

DRAINAGE AREA.--28.9 mi<sup>2</sup>.

PERIOD OF RECORD.--May 2003 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 4,270 ft (NGVD 29).

REMARKS.--Due to extensive ponding of water by beaver dams, actual sampling location was upstream at Rosebud Battlefield.

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

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	
Date	Time	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
Date	Time	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)
Date	Time			Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover-able, ug/L (01077)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)		
MAY 04...	1400	.10	1.35	651	8.2	102	7.8	1,400	26.0	18.0	800	137	112	
MAY 04...	7.58	.6	38.4	9	399	4.94	.5	12.4	377	930	1.26	.25	E.006	
MAY 04...		<.016	<.002	.38	E.004	.017	<2	48	73	<.04	<.8	2.8	80	<.06
MAY 04...				62.1	<.02	4.90	E.3	<.16	E1	50	44	.01		

E--Estimated.

## 451618106590001 INDIAN CREEK AT MOUTH, NEAR KIRBY, MT

LOCATION.--Lat 45°16'18", long 106°59'00" (NAD 27), NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW/4 sec. 32, T.6S., R.39E., Bighorn County, Hydrologic Unit 10100003 on county road 68, 0.1 mi west of Highway 314, and 5.0 mi south of Kirby.

DRAINAGE AREA.--25.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 4,000 ft (NGVD 29).

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

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
MAY 03...	1630	.12	6.26	660	6.2	76	7.6	870	19.0	18.0	450	70.2	67.3
Date	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 03...	10.1	.5	26.2	11	404	5.34	.8	14.3	82.2	519	.71	.17	E.005
Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)
MAY 03...	<.016	E.001	.40	.011	.057	<2	112	112	<.04	<.8	.9	520	.23
Date	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover-able, ug/L (01077)	Zinc, water, unfltrd recover-able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)				
MAY 03...	83.0	<.02	2.38	E.3	<.16	E1	58	25	.01				

E--Estimated.

## 06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT

LOCATION.--Lat 45°21'40", long 106°59'23" (NAD 27), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.36, T.5 S., R.38 E., Big Horn County, Hydrologic Unit 10100003, on right bank, 0.2 mi upstream from Dry Creek, 0.5 mi north of reservation boundary, 1.9 mi downstream from Cache Creek, 2.0 mi north of Kirby, and at river mile 179.6.

DRAINAGE AREA.-- 123 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,780 ft (NGVD 29).

REMARKS.--Water-discharge records poor. Numerous small diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 231 ft<sup>3</sup>/s was measured May 9, 1978, at site 1.9 mi upstream from present site. Flow was known to be higher during flood of May 19-21, 1978, from information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.53	e0.40	e1.3	e1.1	e1.7	e6.0	1.4	1.1	e2.9	5.5	6.7	0.61
2	0.44	e0.40	e1.2	e1.0	e1.5	e5.0	1.4	0.87	e3.0	4.9	6.8	0.38
3	0.31	e0.50	e1.2	e1.0	e1.3	e4.0	1.4	0.81	e3.2	4.5	5.1	0.21
4	0.15	e0.60	e1.1	e0.90	e1.4	e3.0	1.4	0.80	e3.2	3.8	4.3	0.11
5	0.12	e0.70	e0.90	e0.80	e1.3	e2.0	1.4	0.79	e3.3	3.0	3.5	0.02
6	0.06	e0.80	e1.1	e0.70	e1.2	e1.0	1.5	0.74	e3.4	2.6	4.3	0.05
7	0.05	e0.90	e1.2	e1.0	e1.1	e0.70	1.5	0.72	e3.4	2.8	6.1	0.26
8	0.06	e1.0	e1.2	e1.3	e1.2	e0.50	1.5	0.74	e3.4	2.0	5.3	0.36
9	0.12	e1.0	e1.0	e1.5	e1.4	e0.40	1.5	0.74	e3.4	2.1	3.9	0.23
10	0.14	e1.0	e1.0	e1.4	e1.6	e0.30	1.3	0.75	e3.6	2.4	2.9	0.09
11	0.21	e1.0	e1.0	e1.4	e1.7	e0.26	1.3	0.80	e4.5	2.1	1.8	0.00
12	0.25	e0.90	e0.90	e1.4	e1.8	0.27	1.3	0.80	5.2	2.0	0.23	0.00
13	0.23	e1.0	e1.0	e1.3	e1.8	0.40	1.4	0.89	4.8	1.6	0.20	0.22
14	0.22	e0.90	e1.2	e1.3	e1.8	0.28	1.4	0.94	4.8	2.1	0.18	0.60
15	3.2	e1.0	e1.3	e1.5	e1.8	0.18	1.5	0.99	4.5	2.2	0.16	0.95
16	0.96	e1.2	e1.3	e1.5	e1.8	0.20	1.4	1.00	5.3	1.7	0.13	1.1
17	0.26	e1.2	e1.3	e1.5	e2.0	0.31	1.3	e1.2	5.7	1.3	0.13	1.3
18	1.4	1.3	e1.3	e1.4	e2.2	0.40	1.3	e1.3	6.1	1.1	0.12	1.6
19	0.86	1.2	e1.3	e1.5	e2.5	0.36	1.3	e1.3	5.9	0.89	0.11	1.3
20	0.16	1.4	e1.3	e1.5	e3.2	0.43	1.2	e1.4	6.2	0.67	0.22	1.9
21	0.21	e1.1	e1.3	e1.5	e8.0	0.51	1.4	e1.4	6.3	0.45	0.26	2.6
22	0.23	e0.90	e1.3	e1.3	e6.4	0.49	1.5	e1.5	6.8	0.25	0.25	2.1
23	0.28	e0.80	e1.3	e1.3	e5.0	0.62	1.4	e1.6	7.3	0.16	0.52	2.2
24	0.47	e0.90	e1.3	e1.5	e6.0	0.59	1.2	e1.6	7.4	0.13	0.95	2.3
25	0.21	e1.1	e1.3	e1.7	e6.6	0.60	1.1	e1.7	7.5	0.07	1.6	2.1
26	0.26	e1.1	e1.2	e1.6	e6.0	0.87	1.1	e1.9	7.5	0.05	2.1	2.2
27	e0.20	e1.1	e1.2	e1.3	e7.4	1.0	0.96	e2.1	7.5	0.03	1.8	2.6
28	e0.30	e1.2	e1.2	e0.90	e7.4	0.80	1.0	e2.2	6.8	0.05	1.3	1.9
29	e0.40	e1.3	e1.1	e0.90	e7.4	1.5	1.2	e2.4	6.2	0.02	0.96	2.0
30	e0.60	e1.4	e1.1	e1.0	---	1.7	1.1	e2.6	5.8	0.03	0.79	1.8
31	e0.50	---	e1.1	e1.3	---	1.5	---	e2.8	---	0.16	0.70	---
TOTAL	13.39	29.30	36.50	39.30	94.5	36.17	39.66	40.48	154.9	50.66	63.41	33.09
MEAN	0.43	0.98	1.18	1.27	3.26	1.17	1.32	1.31	5.16	1.63	2.05	1.10
MAX	3.2	1.4	1.3	1.7	8.0	6.0	1.5	2.8	7.5	5.5	6.8	2.6
MIN	0.05	0.40	0.90	0.70	1.1	0.18	0.96	0.72	2.9	0.02	0.11	0.00
AC-FT	27	58	72	78	187	72	79	80	307	100	126	66

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2004, BY WATER YEAR (WY)

	2.71	3.06	3.08	3.21	6.00	12.8	14.0	11.8	8.13	3.45	1.61	1.55
MEAN												
MAX	8.02	11.7	12.7	10.0	29.0	41.8	40.7	23.9	19.7	11.1	4.60	3.18
(WY)	(1980)	(1980)	(1980)	(1980)	(1996)	(1996)	(1985)	(1984)	(1986)	(1993)	(1993)	(1984)
MIN	0.33	0.37	0.34	1.02	1.01	1.01	1.32	1.31	1.04	0.03	0.01	0.00
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2004)	(2004)	(2002)	(2002)	(2002)	(2002)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 1980 - 2004

ANNUAL TOTAL	1,075.47	631.36	
ANNUAL MEAN	2.95	1.73	5.95
HIGHEST ANNUAL MEAN			11.7
LOWEST ANNUAL MEAN			0.77
HIGHEST DAILY MEAN	40	Mar 16	8.0
LOWEST DAILY MEAN	0.00	Jul 24	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 3	0.05
MAXIMUM PEAK FLOW		Unknown	b219
MAXIMUM PEAK STAGE		a3.85	Feb 21
INSTANTANEOUS LOW FLOW			0.00
ANNUAL RUNOFF (AC-FT)	2,130	1,250	4,310
10 PERCENT EXCEEDS	8.0	4.6	14
50 PERCENT EXCEEDS	1.1	1.3	3.2
90 PERCENT EXCEEDS	0.01	0.21	0.75

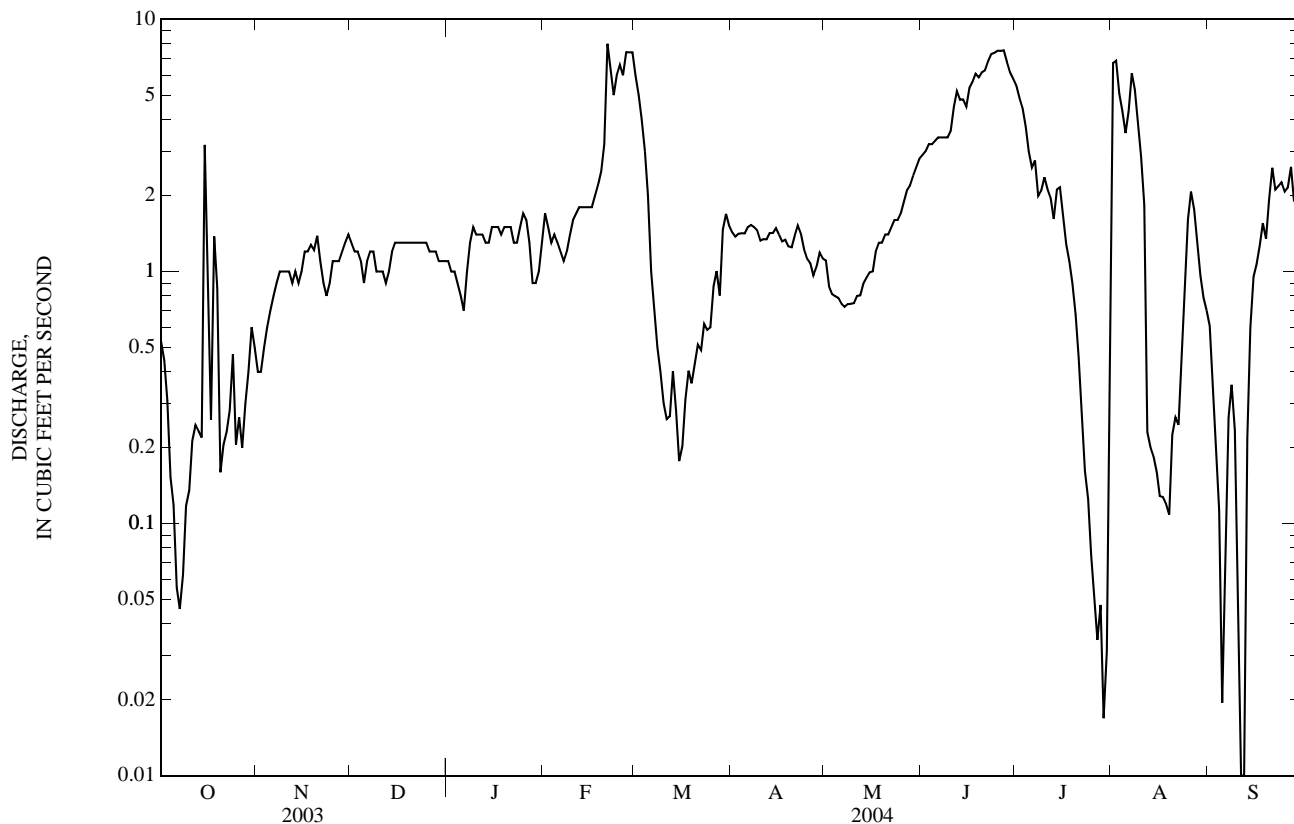
a--Backwater from ice.

b--Gage height, 6.30 ft.

e--Estimated.



06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued



## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980-84, July 2003 to current year.

REMARKS.--Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT	06...	E.03	666	6.6	62	8.2	1,190	23.0	6.5	600	82.0	95.3	12.3
NOV	18...	1.2	661	12.2	105	8.4	1,090	14.0	3.0	570	81.8	88.4	9.72
DEC	04...	1.7	678	11.6	90	7.8	1,140	-2.0	.0	650	90.2	104	8.83
JAN	08...	E1.3	667	9.2	72	7.7	1,110	2.0	.0	580	85.8	88.5	8.49
FEB	23...	E5.0	664	11.5	91	7.5	1,040	4.0	.0	540	80.7	82.8	8.92
MAR	08...	E.50	674	12.7	103	7.7	880	17.0	1.5	460	68.8	71.0	8.42
APR	13...	1.4	665	8.2	77	8.2	1,140	23.0	6.5	530	78.0	82.5	8.74
MAY	12...	.86	667	9.2	87	8.3	1,150	4.0	7.0	530	73.6	83.4	9.92
JUN	10...	E3.6	657	5.4	67	8.4	1,020	19.5	18.0	490	57.3	85.4	8.87
JUL	13...	1.7	668	4.7	58	8.3	977	24.5	18.5	450	54.5	77.3	8.41
AUG	19...	.12	669	4.0	45	8.2	1,090	17.5	15.0	550	63.8	94.9	11.4
SEP	14...	.51	662	3.4	37	8.2	1,090	11.5	12.5	550	67.2	92.6	12.9

E--Estimated.

## 06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd end lab, mg/L as CaCO <sub>3</sub> (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
OCT 06...	1	59.9	18	540	5.97	1.1	21.1	125	726	.99	E0.06	<.016	E.001
NOV 18...	.9	46.8	15	438	5.98	.8	19.1	141	656	.89	2.13	E.010	E.001
DEC 04...	.8	44.9	13	554	5.05	.8	20.1	158	763	1.04	3.50	<.016	E.001
JAN 08...	.8	44.6	14	479	5.11	.8	22.1	151	694	.94	E2.44	.059	.003
FEB 23...	.7	36.9	13	422	4.38	.7	19.0	149	636	.86	E8.59	.076	.003
MAR 08...	.8	37.3	15	339	3.76	.5	12.9	101	508	.69	E.69	E.013	E.001
APR 13...	.9	45.8	15	437	5.13	.8	15.5	134	633	.86	2.39	<.016	<.002
MAY 12...	.9	47.8	16	494	4.88	.9	14.9	129	661	.90	1.53	<.016	E.001
JUN 10...	1	52.2	18	494	4.31	.9	11.5	119	636	.86	E6.18	<.016	E.001
JUL 13...	.9	46.2	18	491	3.88	.9	14.6	94.1	594	.81	2.73	<.016	<.002
AUG 19...	1	55.9	18	558	4.58	1.0	7.9	110	685	.93	.22	<.016	<.002
SEP 14...	1	54.7	17	557	5.15	1.0	8.7	100	676	.92	.93	<.016	E.001

Date	Total nitrogen, watr unfltrd mg/L (62855)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 06...	.48	.029	.067	43	103	<.01
NOV 18...	.33	.011	.044	68	113	.37
DEC 04...	.33	.010	.036	74	28	.13
JAN 08...	.41	.011	.033	69	90	E.32
FEB 23...	.44	.011	.048	74	24	E.32
MAR 08...	--	.012	.108	87	69	E.01
APR 13...	.36	.009	.039	76	48	.18
MAY 12...	.43	.025	.059	66	41	.10
JUN 10...	.49	.031	.067	69	43	E.42
JUL 13...	.57	.059	.092	85	39	.18
AUG 19...	.58	.057	.100	87	23	.01
SEP 14...	.59	.056	.119	80	28	.04

E--Estimated.

06295113 ROSEBUD CREEK AT RESERVATION BOUNDARY, NEAR KIRBY, MT—Continued

## BIOLOGICAL SAMPLE, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Biomass periphyton, ashfree drymass g/m <sup>2</sup> (49954)	Periphyton biomass ash weight, g/m <sup>2</sup> (00572)	Periphyton biomass dry weight, g/m <sup>2</sup> (00573)	Biomass chlorophyll ratio, periphyton, number (70950)	Pheophytin a, periphyton, mg/m <sup>2</sup> (62359)	Chlorophyll a periphyton, mg/m <sup>2</sup> (70957)
SEP 25...	1100	.01	8.1	1,150	24.0	9.0	63.4	1,400	1,482	810	36	78.3

BENTHIC INVERTEBRATE SAMPLES  
SEPTEMBER 25, 2003

Qualitative multiple habitat sample--visual selection Equipment type--D-frame net; mesh size--500 µm				Richest targeted habitat sample--riffles Composite of 17 samples (area 0.023 m <sup>2</sup> /sample) Equipment type--Mini-Surber sample; mesh size--500 µm			
Organism	No. of individuals	Percentage of composition		Organism	No. of individuals	Percentage of composition	
<b>NON INSECTS</b>				<b>NON INSECTS</b>			
Naididae	12	0.5		Naididae	3	0.2	
Tubificidae	6	0.2		Tubificidae	17	1.1	
Sphaeriidae	24	1.0		Sphaeriidae	13	0.9	
Lymnaeidae	12	0.5		Physidae	7	0.4	
Physidae	30	1.2		<i>Hyaella azteca</i>	83	5.3	
Planorbidae	30	1.2		Acari	3	0.2	
<i>Hyaella azteca</i>	738	30.0		<b>ODONATA</b>			
<b>ODONATA</b>				<b>ODONATA</b>			
Aeshnidae	12	0.5		Coenagrionidae	3	0.2	
Coenagrionidae	240	9.8		<b>EPHEMEROPTERA</b>			
<b>EPHEMEROPTERA</b>				<b>EPHEMEROPTERA</b>			
<i>Callibaetis</i>	180	7.3		<i>Caenis</i>	57	3.6	
<i>Caenis</i>	84	3.4		<i>Paraleptophlebia</i>	17	1.1	
<i>Paraleptophlebia</i>	42	1.7		<b>HEMIPTERA</b>			
<b>HEMIPTERA</b>				<b>HEMIPTERA</b>			
<i>Belostoma</i>	6	0.2		Corixidae	13	0.9	
Corixidae	6	0.2		<i>Ambrysus</i>	30	1.9	
<i>Ambrysus</i>	24	1.0		<b>TRICHOPTERA</b>			
<i>Notonecta</i>	6	0.2		<b>TRICHOPTERA</b>			
<i>Microvelia</i>	12	0.5		<i>Cheumatopsyche</i>	40	2.5	
<b>TRICHOPTERA</b>				<b>TRICHOPTERA</b>			
<i>Cheumatopsyche</i>	6	0.2		Limnephilidae	3	0.2	
Limnephilidae	54	2.2		<b>COLEOPTERA</b>			
<b>COLEOPTERA</b>				<b>COLEOPTERA</b>			
<i>Agabus</i>	6	0.2		<i>Nebrioporus</i>	7	0.4	
<i>Neoporus</i>	12	0.5		<i>Stictotarsus</i>	3	0.2	
<i>Dubiraphia</i>	414	16.8		<i>Dubiraphia</i>	852	54.4	
<i>Microcylloepus</i>	18	0.7		<i>Microcylloepus</i>	37	2.3	
<i>Stenelmis</i>	24	1.0		<i>Stenelmis</i>	47	3.0	
<i>Halipus</i>	24	1.0		<i>Halipus</i>	3	0.2	
<i>Tropisternus</i>	6	0.2		<b>DIPTERA</b>			
<b>DIPTERA</b>				<b>DIPTERA</b>			
<i>Dixa</i>	6	0.2		Ceratopogoninae	10	0.6	
<i>Dixella</i>	12	0.5		<i>Simulium</i>	3	0.2	
Ephydriidae	12	0.5		<i>Pilaria</i>	7	0.4	
<i>Tipula</i>	6	0.2		<i>Tipula</i>	3	0.2	
<b>CHIRONOMIDAE</b>				<b>CHIRONOMIDAE</b>			
<i>Chironomidae-pupae</i>	6	0.2		<i>Cryptochironomus</i>	33	2.1	
<i>Corynoneura</i>	12	0.5		<i>Dicrotendipes</i>	7	0.4	
<i>Cryptochironomus</i>	6	0.2		<i>Micropsectra</i>	13	0.9	
<i>Dicrotendipes</i>	42	1.7		<i>Paralauterborniella</i>	10	0.6	
<i>Eukiefferiella Devonica Group</i>	6	0.2		<i>Pentaneura</i>	13	0.9	
<i>Micropsectra</i>	24	1.0		<i>Phaenopsectra</i>	3	0.2	
<i>Parakiefferiella</i>	6	0.2		<i>Polypedilum</i>	3	0.2	
<i>Paralauterborniella</i>	12	0.5		<i>Procladius</i>	130	8.3	
<i>Parametrioicnemus</i>	6	0.2		<i>Rheotanytarsus</i>	60	3.8	
<i>Pentaneura</i>	66	2.7		<i>Stempellinella</i>	3	0.2	
<i>Procladius</i>	96	3.9		<i>Thienemannimyia Complex</i>	30	1.9	
<i>Pseudochironomus</i>	6	0.2		Total number of taxon	34		
<i>Rheotanytarsus</i>	6	0.2		Total number of organisms	1568		
<i>Thienemannimyia Complex</i>	102	4.1		Organisms per m <sup>2</sup>	4020		
				Hilsenhoff biotic index	7.75		
				EPT abundance	117		
				Number of EPT taxon <sub>2</sub>	4		
				EPT abundance per m <sup>2</sup>	300		

BENTHIC INVERTEBRATE SAMPLES--CONTINUED  
SEPTEMBER 25, 2003Qualitative multiple habitat sample--visual selection  
Equipment type--D-frame net;  
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
Total number of taxon	44	
Total number of organisms	2460	
Hilsenhoff biotic index	7.76	
EPT abundance	366	
Number of EPT taxon	5	

ALGAE SAMPLES  
SEPTEMBER 25, 2003Richest targeted habitat sample--gravel, cobble  
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm <sup>2</sup>
<b>BACILLARIOPHYTA</b>		
<i>Achnanthydium minutissimum</i>	0.64	6.21
<i>Adlafia minuscula</i>	0.06	0.62
<i>Amphipleura pellucida</i>	0.45	4.35
<i>Amphora inariensis</i>	0.45	4.35
<i>Amphora libyca</i>	0.13	1.24
<i>Amphora pediculus</i>	0.39	3.73
<i>Bacillaria paradoxa</i>	0.13	1.24
<i>Caloneis bacillum</i>	0.52	4.97
<i>Caloneis silicula</i>	0.39	3.73
<i>Cocconeis pediculus</i>	1.35	13.0
<i>Cocconeis placentula</i>	10.2	98.2
<i>Cyclotella meneghiniana</i>	1.10	10.6
<i>Cymatopleura solea</i>	0.19	1.86
<i>Cymbella mexicana</i>	0.06	0.62
<i>Diploneis puella</i>	0.84	8.08
<i>Epithemia sorex</i>	0.64	6.21
<i>Epithemia turgida</i>	0.26	2.48
<i>Fragilaria capucina</i>	0.13	1.24
<i>Fragilaria vaucheriae</i>	0.13	1.24
<i>Gomphonema acuminatum</i>	0.06	0.62
<i>Gomphonema gracile</i>	0.06	0.62
<i>Gomphonema hedinii</i>	0.06	0.62
<i>Gomphonema mexicanum</i>	0.13	1.24
<i>Gomphonema minutum</i>	0.13	1.24
<i>Gomphonema olivaceum</i>	0.13	1.24
<i>Gomphonema parvulum</i>	0.06	0.62
<i>Gomphonema rhombicum</i>	0.06	0.62
<i>Gyrosigma acuminatum</i>	0.06	0.62
<i>Melosira varians</i>	1.67	16.2
<i>Navicula canalis</i>	0.32	3.11
<i>Navicula capitatoradiata</i>	0.58	5.59
<i>Navicula caterva</i>	0.77	7.45
<i>Navicula cryptotenella</i>	0.39	3.73
<i>Navicula erifuga</i>	0.19	1.86
<i>Navicula germainii</i>	0.71	6.83
<i>Navicula goersii</i>	0.52	4.97
<i>Navicula gregaria</i>	0.32	3.11
<i>Navicula libonensis</i>	0.06	0.62
<i>Navicula minima</i>	1.10	10.6
<i>Navicula radiosa</i>	0.13	1.24
<i>Navicula reichardtiana</i>	0.19	1.86
<i>Navicula tenera</i>	0.39	3.73
<i>Navicula tripunctata</i>	0.13	1.24
<i>Navicula trivialis</i>	0.13	1.24
<i>Navicula veneta</i>	0.84	8.08
<i>Nitzschia agnita</i>	0.97	9.32
<i>Nitzschia archibaldii</i>	0.06	0.62
<i>Nitzschia dissipata</i>	0.97	9.32
<i>Nitzschia frustulum</i>	4.90	47.2
<i>Nitzschia incognita</i>	0.39	3.73
<i>Nitzschia linearis</i>	0.26	2.48
<i>Nitzschia microcephala</i>	0.13	1.24
<i>Nitzschia palea</i>	1.10	10.6
<i>Nitzschia recta</i>	0.26	2.48
<i>Nitzschia reversa</i>	0.19	1.86
<i>Nitzschia supralitoreae</i>	0.97	9.32
<i>Nitzschia valdecostata</i>	0.06	0.62

Depositional targeted habitat sample--fine sediment  
Sample method--Inverted petri dish

Organism	Percent of composition	Cell density cells/mm <sup>2</sup>
<b>BACILLARIOPHYTA</b>		
<i>Achnanthydium minutissimum</i>	0.16	0.66
<i>Adlafia minuscula</i>	0.11	0.44
<i>Amphipleura pellucida</i>	0.21	0.88
<i>Amphora inariensis</i>	0.11	0.44
<i>Amphora libyca</i>	0.11	0.44
<i>Amphora pediculus</i>	0.11	0.44
<i>Amphora sp.</i>	0.05	0.22
<i>Biremis circumtexta</i>	0.16	0.66
<i>Caloneis bacillum</i>	0.29	1.20
<i>Caloneis silicula</i>	0.19	0.77
<i>Cocconeis pediculus</i>	0.64	2.63
<i>Cocconeis placentula</i>	4.00	16.5
<i>Cyclotella meneghiniana</i>	0.42	1.75
<i>Cylindrotheca gracilis</i>	0.05	0.22
<i>Cymatopleura solea</i>	0.05	0.22
<i>Cymbella excisa</i>	0.05	0.22
<i>Cymbella tumida</i>	0.05	0.22
<i>Diploneis oculata</i>	0.11	0.44
<i>Diploneis puella</i>	0.19	0.77
<i>Encyonema silesiacum</i>	0.05	0.22
<i>Epithemia adnata</i>	0.08	0.33
<i>Epithemia sorex</i>	0.05	0.22
<i>Epithemia turgida</i>	0.05	0.22
<i>Gomphonema minutum</i>	0.05	0.22
<i>Gomphonema olivaceum</i>	0.05	0.22
<i>Gyrosigma acuminatum</i>	0.08	0.33
<i>Hippodonta hungarica</i>	0.19	0.77
<i>Melosira varians</i>	0.03	0.11
<i>Navicula canalis</i>	0.48	1.97
<i>Navicula capitatoradiata</i>	0.42	1.75
<i>Navicula caterva</i>	0.32	1.31
<i>Navicula cryptotenella</i>	0.05	0.22
<i>Navicula elginensis</i>	0.05	0.22
<i>Navicula erifuga</i>	0.37	1.53
<i>Navicula germainii</i>	0.16	0.66
<i>Navicula goersii</i>	0.45	1.86
<i>Navicula gregaria</i>	0.50	2.08
<i>Navicula lanceolata</i>	0.05	0.22
<i>Navicula lenzii</i>	0.05	0.22
<i>Navicula libonensis</i>	0.48	1.97
<i>Navicula minima</i>	0.56	2.30
<i>Navicula omissa</i>	0.03	0.11
<i>Navicula pseudanglica</i>	0.05	0.22
<i>Navicula reichardtiana</i>	0.42	1.75
<i>Navicula salinicola</i>	0.11	0.44
<i>Navicula soehrensii</i>	0.05	0.22
<i>Navicula sp.</i>	0.05	0.22
<i>Navicula trivialis</i>	0.29	1.20
<i>Navicula veneta</i>	0.45	1.86
<i>Navicula viridula</i>	0.03	0.11
<i>Neidium ampliatum</i>	0.03	0.11
<i>Nitzschia agnita</i>	0.42	1.75
<i>Nitzschia amphibia</i>	0.05	0.22
<i>Nitzschia aurariae</i>	0.05	0.22
<i>Nitzschia dissipata</i>	0.40	1.64
<i>Nitzschia frustulum</i>	0.61	2.52
<i>Nitzschia incognita</i>	0.16	0.66



452312107001501 CORRAL CREEK ABOVE MOUTH, NEAR KIRBY, MT

LOCATION.--Lat 45°23'12", long 107°00'15" (NAD 27), SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 23, T5S., R.38E., Bighorn County, Hydrologic Unit 100100003, 0.10 mi above old homestead, about 1 mi above mouth, and about 5 mi north of Kirby.

DRAINAGE AREA.--Undetermined.

PERIOD OF RECORD.--May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,740 ft (NGVD 29).

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

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	
MAY 03...	1330	.01	2	667	6.8	78	7.4	889	20.0	15.5	460	85.2	60.9	
Date	Time	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
MAY 03...	10.7	.5	24.9	10	427	5.67	.6	17.2	75.9	537	.73	.02	E.008	
Date	Time	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)
MAY 03...	<.016	E.001	.25	.012	.029	<2	120	112	<.04	<.8	.9	150	<.06	
Date	Time	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)				
MAY 03...		179	<.02	2.97	E.2	<.16	<2	56	54	.00				

E--Estimated.

## 452800107001101 THOMPSON CREEK NEAR BUSBY, MT

LOCATION.--Lat 45°28'00", long 107°00'11" (NAD 27), SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 26, T.4S., R.38E., Bighorn County, Hydrologic Unit 10100003, 0.5 mi upstream from mouth at Highway 314 bridge crossing, and 7.0 mi south of Busby.

DRAINAGE AREA.--21.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2002 to May 2004 (discontinued).

GAGE.--None. Elevation at sampling site is 3,560 ft (NGVD 29).

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

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	
Date	Time	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)
Date	Time	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)
Date	Time			Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)		
MAY 03...	1200	.33	14.3	672	8.3	97	7.8	1,100	20.0	16.5	550	67.7	92.8	
MAY 03...	11.1	1	56.5	18	434	6.06	.5	14.5	206	715	.97	.64	E.007	
MAY 03...	<.016	E.001	.53	<.006	.041	E1	62	204	<.04	<.8	1.5	310	.33	
MAY 03...			31.2	<.02	2.55	<.4	<.16	E2	88	27	.02			

E--Estimated.

## 06295250 ROSEBUD CREEK NEAR COLSTRIP, MT

LOCATION.--Lat 45°46'03", long 106°34'10" (NAD 27), in SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.8, T.1 S., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 100 ft downstream from bridge on FAS Route 315, 1.5 mi downstream from Lee Coulee, 8.4 mi southeast of Colstrip, and at river mile 85.6.

DRAINAGE AREA.--799 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,000 ft (NGVD 29).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 800 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e0.90	e2.0	e2.5	24	e7.5	e4.0	0.86	0.18	0.00	0.00
2	0.00	0.00	e0.90	e2.0	e2.5	20	e7.0	e4.0	0.78	0.23	0.00	0.00
3	0.00	0.00	e0.90	e2.0	e2.5	19	e7.0	e3.5	0.61	0.17	0.00	0.00
4	0.00	0.00	0.72	e2.0	e2.5	19	e7.0	e3.5	0.51	0.14	0.00	0.00
5	0.00	0.00	0.94	e1.5	e2.5	19	e7.5	e3.0	0.48	0.28	0.00	0.00
6	0.00	0.00	1.2	e1.5	e2.5	16	e8.0	e3.0	0.38	0.28	0.00	0.00
7	0.00	0.00	1.3	e1.5	e3.0	16	e7.0	e2.5	0.29	0.17	0.00	0.00
8	0.00	0.00	1.3	e2.0	e3.0	17	e7.0	e2.5	0.20	0.12	0.00	0.00
9	0.00	0.00	e1.0	e2.0	e3.0	16	e7.0	e3.0	0.15	0.10	0.00	0.00
10	0.00	0.00	e1.5	e2.5	e3.0	14	e7.5	e3.0	0.69	0.08	0.00	0.00
11	0.00	0.00	e1.5	e2.5	e3.0	16	e8.0	2.7	8.1	0.07	0.00	0.00
12	0.00	0.00	2.0	e3.0	e3.0	13	e8.0	2.6	1.3	0.06	0.00	0.00
13	0.00	0.00	2.0	e3.5	e3.0	14	e8.0	2.5	0.48	0.04	0.00	0.00
14	0.00	0.00	2.1	e4.0	e3.0	17	e7.5	2.1	0.44	0.03	0.00	0.00
15	0.00	0.00	2.0	e4.0	e3.0	15	e7.5	1.8	0.26	0.03	0.00	0.00
16	0.00	0.00	2.1	e4.0	e4.0	14	e7.5	2.2	0.18	0.01	0.00	0.00
17	0.00	0.00	1.9	e4.0	e4.0	e15	e7.0	2.2	0.15	0.00	0.00	0.00
18	0.00	0.00	2.1	e4.0	e5.0	e15	e7.0	2.1	0.17	0.00	0.00	0.00
19	0.00	0.00	2.0	e4.0	e20	e10	e7.0	2.1	0.21	0.00	0.00	0.00
20	0.00	0.00	2.1	e4.0	e80	e10	e6.5	2.0	0.19	0.00	0.00	0.00
21	0.00	e0.20	2.1	e4.0	e70	e9.0	e6.5	1.8	0.15	0.00	0.00	0.00
22	0.00	e0.40	2.2	e4.0	e50	e8.0	e7.0	1.2	0.13	0.00	0.00	0.00
23	0.00	e0.60	2.2	e4.0	e35	e7.0	e7.0	1.4	0.09	0.00	0.00	0.00
24	0.00	e0.80	2.2	e4.0	e30	e6.0	e6.5	1.1	0.15	0.00	0.00	0.00
25	0.00	e0.90	2.1	e4.0	e30	e6.0	e5.5	1.2	0.15	0.00	0.00	0.00
26	0.00	e0.90	2.3	e3.5	27	e7.0	e4.0	1.4	0.18	0.00	0.00	0.00
27	0.00	e0.90	e2.0	e3.0	27	e7.0	e4.5	1.4	0.18	0.00	0.00	0.00
28	0.00	e1.0	e2.0	e2.5	22	e8.0	e4.5	1.1	0.16	0.00	0.00	0.00
29	0.00	e1.0	e2.0	e2.5	19	e9.0	e4.0	0.87	0.17	0.00	0.00	0.00
30	0.00	e0.90	e2.0	e2.5	---	e9.0	e3.5	0.96	0.17	0.00	0.00	0.00
31	0.00	---	e2.0	e2.5	---	e8.0	---	1.1	---	0.00	0.00	---
TOTAL	0.00	7.60	53.56	92.5	465.0	403.0	199.5	67.83	17.96	1.99	0.00	0.00
MEAN	0.00	0.25	1.73	2.98	16.0	13.0	6.65	2.19	0.60	0.06	0.00	0.00
MAX	0.00	1.0	2.3	4.0	80	24	8.0	4.0	8.1	0.28	0.00	0.00
MIN	0.00	0.00	0.72	1.5	2.5	6.0	3.5	0.87	0.09	0.00	0.00	0.00
AC-FT	0.00	15	106	183	922	799	396	135	36	3.9	0.00	0.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

	9.00	11.6	11.7	14.1	26.2	46.0	38.8	49.0	34.3	17.3	8.61	6.35
MEAN	9.00	11.6	11.7	14.1	26.2	46.0	38.8	49.0	34.3	17.3	8.61	6.35
MAX	47.5	46.2	46.0	70.3	105	164	185	306	212	104	57.1	55.8
(WY)	(1979)	(1979)	(1979)	(1975)	(1996)	(1994)	(1979)	(1975)	(1978)	(1975)	(1975)	(1978)
MIN	0.00	0.00	0.00	0.00	3.05	7.42	6.65	2.19	0.60	0.00	0.00	0.00
(WY)	(1991)	(2003)	(2003)	(2003)	(2003)	(1991)	(2004)	(2004)	(2004)	(2002)	(2001)	(1983)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 1975 - 2004

ANNUAL TOTAL	4,417.30	1,308.94	
ANNUAL MEAN	12.1	3.58	22.7*
HIGHEST ANNUAL MEAN			95.9
LOWEST ANNUAL MEAN			2.96
HIGHEST DAILY MEAN	465	Mar 18	80
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
MAXIMUM PEAK FLOW			80
MAXIMUM PEAK STAGE			a4.04
ANNUAL RUNOFF (AC-FT)	8,760	2,600	16,470
10 PERCENT EXCEEDS	21	8.0	49
50 PERCENT EXCEEDS	1.0	0.90	11
90 PERCENT EXCEEDS	0.00	0.00	0.03

\*--Median of yearly mean discharge, 14.3 ft<sup>3</sup>/s, 10,360 acre-ft/yr.

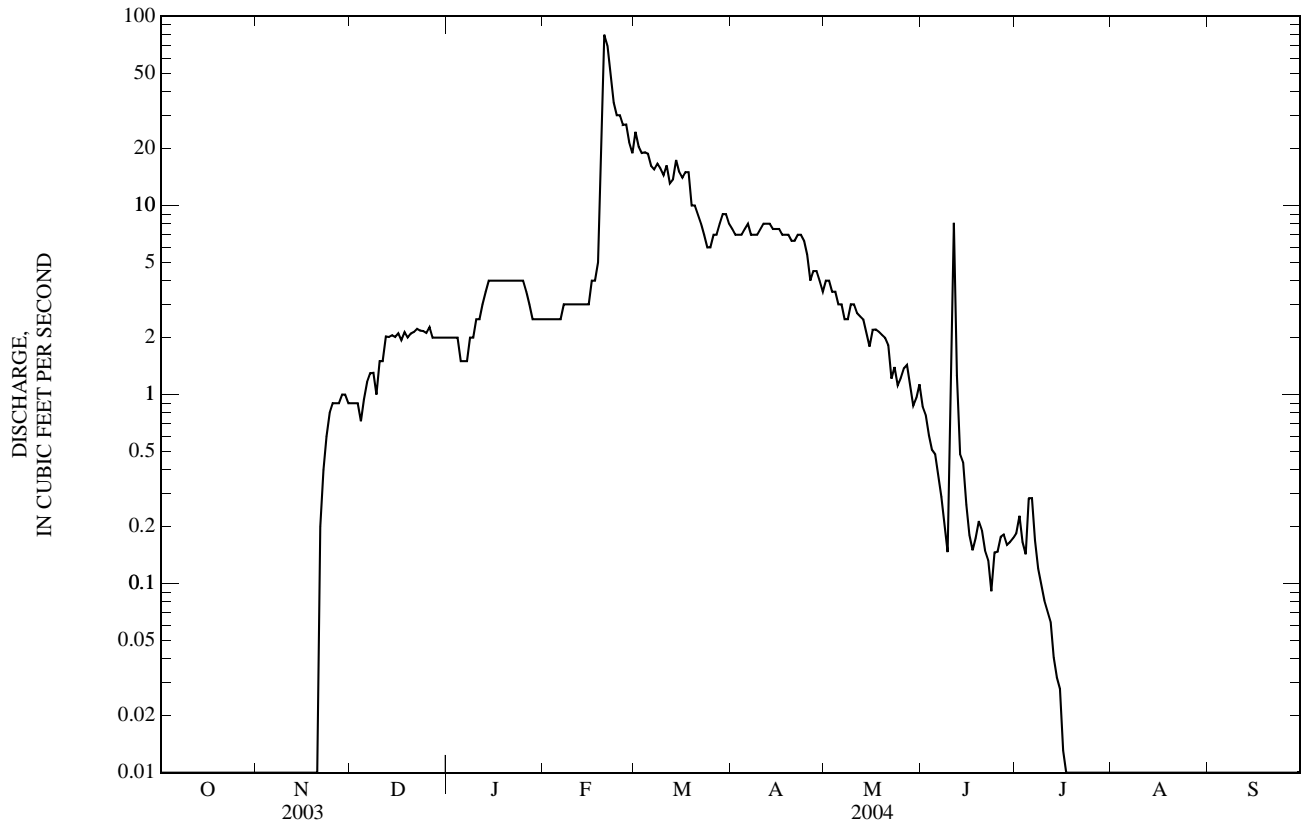
a--Backwater from ice.

b--No flow many days most years.

e--Estimated.



06295250 ROSEBUD CREEK NEAR COLSTRIP, MT—Continued



06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT

LOCATION.--Lat 46°15'53", long 106°28'30" (NAD 27), in SW¼NW¼NE¼ sec.21, T.6 N., R.42 E., Rosebud County, Hydrologic Unit 10100003, on left bank 0.4 mi upstream from bridge on Interstate Highway 94, 0.8 mi upstream from mouth, and 1.6 mi southwest of Rosebud.

DRAINAGE AREA.--1,302 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,480 ft (NGVD 29).

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

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.5	0.19	e0.10	0.00	2.0	0.02	0.04	0.16	0.26	0.00	0.00
2	0.00	0.61	0.19	e0.10	0.00	1.4	0.01	0.03	0.18	0.29	0.00	0.00
3	0.00	0.62	0.18	e0.05	0.00	0.75	0.06	0.03	0.20	0.30	0.08	0.00
4	0.00	0.43	0.27	e0.05	0.00	2.8	0.03	0.05	0.25	0.31	0.20	0.14
5	0.00	0.18	0.16	e0.05	0.00	2.8	0.00	0.03	0.33	0.42	0.06	0.02
6	0.00	0.10	0.15	e0.00	0.00	6.9	0.00	0.01	0.27	0.36	0.01	0.00
7	0.00	0.10	0.17	e0.00	0.00	4.6	0.00	0.02	0.17	3.9	0.05	0.00
8	0.00	0.07	0.17	e0.05	0.00	5.1	0.00	0.03	0.14	0.80	0.03	0.00
9	0.00	0.07	0.17	e0.05	0.00	15	0.00	0.01	0.15	0.43	0.00	0.00
10	0.00	0.06	0.14	e0.05	0.00	8.8	0.00	0.00	0.66	0.37	0.00	0.00
11	0.00	0.16	0.14	e0.05	0.00	1.5	0.00	0.03	99	0.35	0.00	0.00
12	0.00	0.18	0.06	e0.05	0.00	2.8	0.00	0.07	128	0.33	0.00	0.00
13	0.00	0.11	0.05	e0.05	0.00	5.8	0.10	0.05	68	0.25	0.00	0.00
14	0.00	0.11	0.07	e0.05	0.00	6.7	0.01	0.05	15	0.18	0.00	0.02
15	0.00	0.29	0.15	e0.00	0.00	6.1	0.00	0.08	2.1	0.16	0.00	0.06
16	0.00	0.23	0.14	0.00	0.00	9.4	0.01	0.10	0.59	0.16	0.00	0.00
17	0.00	0.17	0.20	0.00	0.00	5.7	0.01	0.16	0.59	0.14	0.00	0.00
18	0.00	0.17	0.21	0.00	0.00	7.4	0.03	0.10	0.48	0.14	0.00	0.00
19	0.00	0.24	0.16	0.00	0.00	2.8	0.05	0.12	0.52	0.10	0.00	0.00
20	0.00	0.27	0.15	0.00	e120	1.9	0.08	0.08	0.52	0.13	0.00	0.08
21	0.00	0.25	0.18	0.00	e200	6.1	0.11	0.11	0.36	0.09	0.00	0.13
22	0.00	0.15	0.18	0.00	e250	12	0.07	0.12	0.40	0.05	0.00	0.00
23	0.00	0.10	0.16	0.00	e150	8.0	0.03	0.29	0.41	0.04	0.00	0.00
24	0.00	0.27	0.12	0.00	e50	0.27	0.03	0.18	0.37	0.14	0.00	0.00
25	0.00	0.25	0.12	0.00	e90	0.07	0.04	0.02	0.40	0.08	0.00	0.00
26	0.00	0.16	0.12	0.00	e100	0.03	0.04	0.01	0.46	0.00	0.00	0.00
27	0.00	0.15	0.13	0.00	28	0.09	0.05	0.04	0.86	0.00	0.00	0.00
28	0.00	0.08	0.14	0.00	22	0.00	0.03	0.06	0.30	0.20	0.00	0.00
29	0.61	0.16	e0.15	0.00	8.6	0.00	0.06	0.13	0.18	0.08	0.00	0.03
30	5.5	0.23	e0.10	0.00	---	0.09	0.05	0.16	0.19	0.05	0.00	0.03
31	7.5	---	e0.10	0.00	---	0.00	---	0.16	---	0.02	0.00	---
TOTAL	13.61	7.47	4.62	0.70	1,018.60	126.90	0.92	2.37	321.24	10.13	0.43	0.51
MEAN	0.44	0.25	0.15	0.02	35.1	4.09	0.03	0.08	10.7	0.33	0.01	0.02
MAX	7.5	1.5	0.27	0.10	250	15	0.11	0.29	128	3.9	0.20	0.14
MIN	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
AC-FT	27	15	9.2	1.4	2,020	252	1.8	4.7	637	20	0.9	1.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

MEAN	7.86	8.81	9.49	18.0	37.2	70.6	41.0	57.5	38.8	16.9	7.67	7.97
MAX	45.7	47.6	47.8	159	187	428	180	478	286	133	47.8	77.3
(WY)	(1979)	(1979)	(1979)	(1999)	(1997)	(1994)	(1979)	(1978)	(1978)	(1993)	(1975)	(1978)
MIN	0.00	0.01	0.03	0.02	0.07	0.04	0.03	0.08	0.48	0.00	0.00	0.00
(WY)	(2002)	(2002)	(2002)	(2004)	(2002)	(2002)	(2004)	(2004)	(1988)	(2002)	(2003)	(1990)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 1975 - 2004

ANNUAL TOTAL	4,161.06	1,507.50		
ANNUAL MEAN	11.4	4.12		26.8*
HIGHEST ANNUAL MEAN				113
LOWEST ANNUAL MEAN				1.00
HIGHEST DAILY MEAN	500	250	Feb 22	2,800
LOWEST DAILY MEAN	0.00	0.00	Oct 1	60.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	Oct 1	0.00
MAXIMUM PEAK FLOW		Unknown		3,700
MAXIMUM PEAK STAGE		a3.64	Feb 22	7.70
ANNUAL RUNOFF (AC-FT)	8,250	2,990		19,390
10 PERCENT EXCEEDS	24	2.0		59
50 PERCENT EXCEEDS	0.17	0.06		7.0
90 PERCENT EXCEEDS	0.00	0.00		0.08

\*--Median of yearly mean discharge, 14.9 ft<sup>3</sup>/s, 10,800 acre-ft/yr.

a--Backwater from ice.

b--No flow many days in 1984, 1990-92, 2000-04.

e--Estimated.

06296003 ROSEBUD CREEK AT MOUTH, NEAR ROSEBUD, MT—Continued

