06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT

LOCATION.--Lat 45°24'42", long 106°27'26" (NAD 27), in SE¼SW¼SW¼ sec.8, T.5 S., R.43 E., Rosebud County, Hydrologic Unit 10090102, on left bank, 60 ft upstream from Bureau of Indian Affairs bridge, 0.2 mi east of Birney Day School, 5.5 mi downstream from Cook Creek, 6.5 mi northeast of Birney, and at river mile 144.3.

DRAINAGE AREA.--2,621 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 3,060 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	113	e80	e90	e100	e90	181	170	179	252	257	122
2	141	113	e80	e90	e100	e90	181	170	168	253	251	122
3	124	112	e80	e90	e95	e90	182	170	167	251	260	128
4	122	112	e80	e85	e95	e90	183	168	159	252	266	131
5	122	110	e85	e80	e95	e95	183	186	158	271	256	112
6	117	e80	e85	e80	e95	e100	183	212	156	268	270	109
7	110	e85	e85	e85	e95	e100	183	214	172	246	255	108
8	111	e85	e85	e95	e95	e110	179	228	174	248	241	108
9	111	e85	e85	e95	e95	e120	165	238	178	249	242	108
10	111	e85	e85	e95	e95	e135	165	237	186	243	234	107
11	113	e90	e85	e95	e95	135	164	232	243	241	221	107
12	111	e85	e85	e95	e95	134	165	235	242	243	211	104
13	112	e85	e85	e95	e90	135	165	237	235	238	213	111
14	111	e90	e85	e95	e95	133	164	237	243	258	211	110
15	112	e100	e85	e95	e95	132	165	236	238	260	208	118
16	111	108	e85	e95	e95	134	165	238	242	271	206	97
17	111	108	e85	e95	e95	134	163	241	244	258	211	96
18	111	106	e85	e100	e95	134	163	234	244	257	222	95
19	111	102	e90	e100	e90	149	165	242	249	268	220	96
20	111	98	e90	e100	e90	178	164	240	250	264	222	103
21	111	e90	e90	e100	e90	180	167	247	232	276	219	110
22	111	e80	e90	e100	e90	181	175	257	222	283	220	96
23	111	e70	e90	e100	e90	181	169	234	222	290	232	95
24	111	e80	e90	e100	e90	182	164	224	231	289	194	97
25	111	e80	e90	e100	e90	182	165	217	232	284	151	94
26	111	e80	e90	e100	e90	182	164	218	229	283	149	95
27	112	e80	e90	e95	e90	182	162	213	232	279	141	96
28	114	e80	e90	e95	e90	182	171	222	233	266	128	102
29	119	e80	e90	e100	e90	181	171	223	245	261	127	92
30	114	e80	e90	e100	---	181	170	189	254	261	124	94
31	114	---	e90	e100	---	181	---	186	---	264	122	---
TOTAL	3,565	2,752	2,680	2,940	2,705	4,413	5,106	6,795	6,459	8,127	6,484	3,163
MEAN	115	91.7	86.5	94.8	93.3	142	170	219	215	262	209	105
MAX	143	113	90	100	100	182	183	257	254	290	270	131
MIN	110	70	80	80	90	90	162	168	156	238	122	92
AC-FT	7,070	5,460	5,320	5,830	5,370	8,750	10,130	13,480	12,810	16,120	12,860	6,270

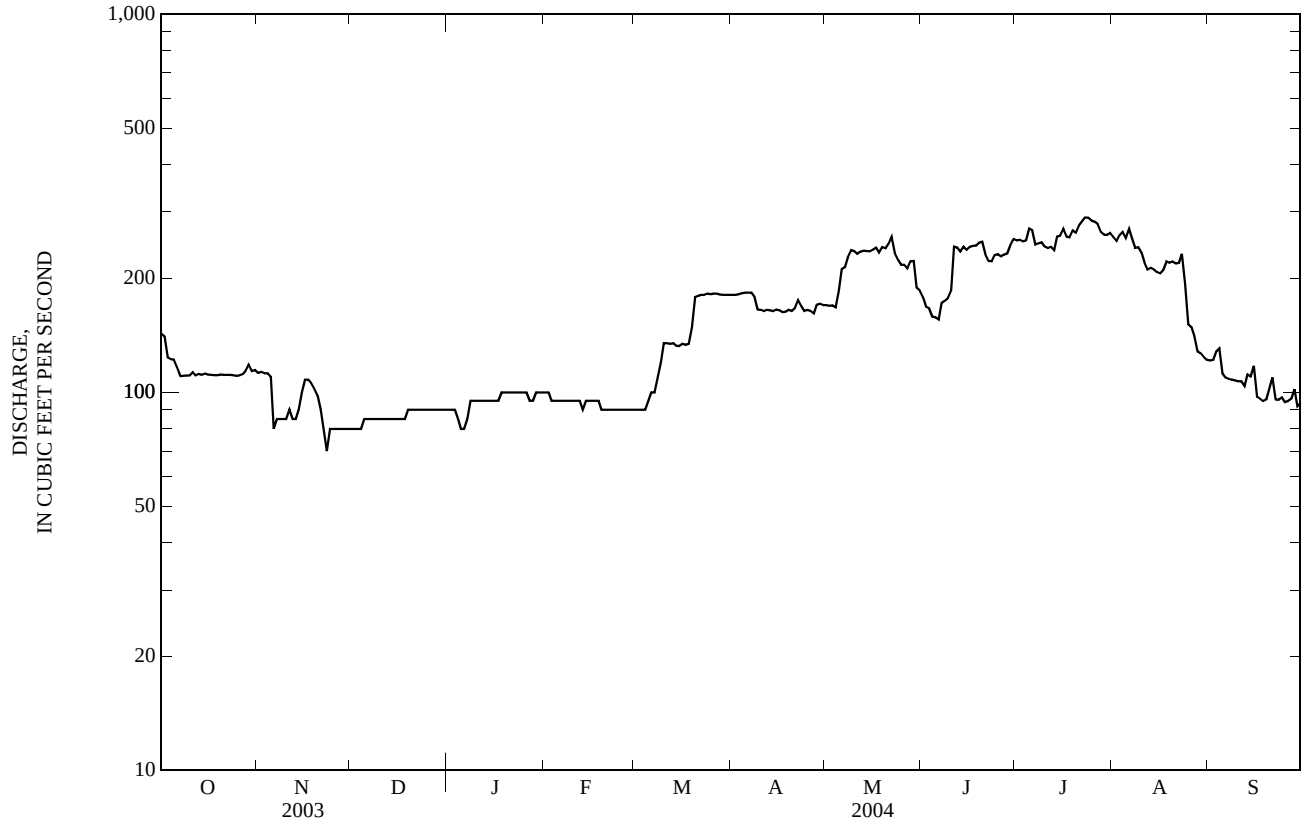
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2004, BY WATER YEAR (WY)

MEAN	235	209	173	173	189	225	265	633	1,089	542	389	307
MAX	381	347	260	287	350	434	583	1,769	2,921	1,269	676	694
(WY)	(1996)	(1987)	(1987)	(1983)	(1983)	(1996)	(1996)	(1984)	(1984)	(1995)	(1997)	(1998)
MIN	84.7	65.6	63.5	91.3	90.0	78.0	65.9	144	215	234	159	105
(WY)	(1989)	(1989)	(1989)	(1989)	(2002)	(1987)	(1992)	(2002)	(2004)	(2001)	(2002)	(2004)

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1980 - 2004	
ANNUAL TOTAL	115,715		55,189			
ANNUAL MEAN	317		151		369	
HIGHEST ANNUAL MEAN					644	1984
LOWEST ANNUAL MEAN					133	2002
HIGHEST DAILY MEAN	2,230	Jun 3	290	Jul 23	3,740	Jun 14, 1984
LOWEST DAILY MEAN	70	Nov 23	70	Nov 23	28	Apr 6, 1987
ANNUAL SEVEN-DAY MINIMUM	79	Nov 22	79	Nov 22	28	Apr 5, 1987
MAXIMUM PEAK FLOW			a294	Jul 23	c4,520	Jun 14, 1984
MAXIMUM PEAK STAGE			b3.20	Jan 1	b6.92	Feb 8, 1996
ANNUAL RUNOFF (AC-FT)	229,500		109,500		267,500	
10 PERCENT EXCEEDS	841		248		654	
50 PERCENT EXCEEDS	115		122		243	
90 PERCENT EXCEEDS	89		85		104	

a--Gage height, 1,84 ft.
b--Backwater from ice.
c--Gage height, 6.43 ft, from rating curve extended above 2,700 ft^3/s.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980 to 1993, October 2003 to September 2004.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 29, 2004 through September 30, 2004.

INSTRUMENTATION.--Specific conductance probe installed April 28, 2004.

REMARKS.--Daily specific conductance record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 693 microsiemens per centimeter (µS/cm), Sept. 30, 2004; minimum daily mean, 548 µS/cm , Aug. 6, 2004.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 693 microsiemens per centimeter (µS/cm), Sept. 30; minimum daily mean, 548 µS/cm , Aug. 6.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
JAN									
07...	1630	E85	681	8.9	69	8.2	787	-3.0	0.0
FEB									
05...	1030	E95	690	8.9	67	8.2	762	-5.0	0.0
23...	1300	E90	682	12.7	97	8.4	694	12.5	0.0
MAR									
10...	1000	E135	691	10.7	87	8.5	680	-1.0	2.5
22...	1500	181	681	9.8	99	8.4	703	23.5	10.5
APR									
13...	1245	165	680	11.8	125	8.4	788	23.0	12.5
26...	1215	165	689	9.3	100	8.5	676	20.0	14.0
MAY									
12...	1415	236	667	9.3	96	8.5	664	4.5	10.5
25...	1200	218	684	10.3	114	8.5	671	18.0	15.0
JUN									
08...	1200	174	685	8.8	105	8.5	638	19.5	18.5
23...	1015	215	685	8.2	95	8.5	621	28.0	17.0
JUL									
13...	1145	220	686	8.3	108	8.5	630	34.5	23.0
26...	1630	288	681	8.3	111	8.4	604	32.0	24.0
AUG									
17...	1100	195	686	7.8	97	8.4	581	26.5	21.0
23...	1440	241	674	8.3	108	8.5	609	28.0	22.0
SEP									
14...	1245	109	680	9.0	103	8.6	624	18.0	16.0
27...	1015	96	692	8.1	90	8.4	670	15.5	15.5

Date	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
JAN												
07...	360	73.4	42.8	3.91	1	42.6	20	227	5.41	.3	4.39	166
FEB												
05...	330	68.3	39.7	3.83	1	42.7	22	223	5.08	.3	3.71	155
23...	300	58.9	36.2	3.31	.9	34.6	20	189	4.29	.3	1.93	142
MAR												
10...	310	63.2	37.7	3.81	1	42.3	22	217	4.29	.3	1.91	143
22...	300	60.8	36.2	3.66	1	38.6	22	213	4.87	.3	2.34	147
APR												
13...	300	58.1	36.4	3.34	1	40.0	23	205	4.94	.3	1.25	143
26...	290	57.6	36.0	3.59	1	39.1	22	217	4.85	.3	1.63	144
MAY												
12...	290	58.1	36.0	3.43	.9	36.7	21	210	4.87	.3	2.16	140
25...	300	57.8	36.7	3.61	1	38.7	22	200	4.81	.3	.96	144
JUN												
08...	260	45.7	36.0	3.31	1	40.2	25	194	4.76	.3	.90	140
23...	260	46.1	34.8	3.39	1	39.9	25	192	4.52	.3	.50	136
JUL												
13...	230	42.3	31.2	3.39	1	36.7	25	192	4.35	.3	1.50	133
26...	250	47.0	31.1	3.31	.9	33.8	23	193	4.13	.3	3.15	124
AUG												
17...	230	39.2	32.8	3.47	1	34.5	24	181	4.25	.3	4.25	128
23...	240	43.3	32.4	3.85	1	37.3	25	183	3.68	.3	4.24	136
SEP												
14...	250	39.4	36.2	4.15	1	42.9	27	177	4.00	.3	2.86	152
27...	260	41.6	37.5	3.99	1	48.1	28	190	4.11	.3	1.86	161

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

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

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
JAN						
07...	475	.65	E109	84	28	E6.43
FEB						
05...	453	.62	E116	73	10	E2.56
23...	395	.54	E96	74	6	E1.46
MAR						
10...	427	.58	E156	65	11	E4.01
22...	422	.57	206	69	42	21
APR						
13...	410	.56	183	74	17	7.6
26...	418	.57	186	62	7	3.1
MAY						
12...	408	.55	260	72	34	22
25...	407	.55	240	76	39	23
JUN						
08...	388	.53	182	85	21	9.9
23...	382	.52	222	93	12	7.0
JUL						
13...	367	.50	218	87	16	9.5
26...	363	.49	283	81	32	25
AUG						
17...	355	.48	187	90	13	6.8
23...	371	.50	241	97	205	133
SEP						
14...	388	.53	114	92	2	.59
27...	413	.56	107	77	6	1.6

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat unf mg/L (62855)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
FEB													
05...	1030	<.010	.033	.003	<.006	.008	.26	<2	13	.9	E1	60	61
MAR													
10...	1000	<.010	<.016	<.002	<.006	.016	.26	<2	47	.8	E1	55	57
APR													
13...	1245	<.010	<.016	<.002	<.006	.011	.26	E1	23	.9	E1	52	55
26...	1215	<.010	<.016	<.002	<.006	.012	.27	<2	20	.9	E1	52	56
MAY													
12...	1415	<.010	<.016	E.001	<.006	.025	.35	E1	84	.9	E1	55	55
25...	1200	<.010	<.016	<.002	<.006	.030	.24	2	123	.8	<2	55	58
JUN													
08...	1200	<.010	<.016	E.001	<.006	.031	.24	3	120	1.0	<2	55	54
23...	1015	<.010	<.016	<.002	<.006	.019	.28	E1	97	.8	<2	50	51
JUL													
26...	1630	<.010	<.016	<.002	<.006	.026	.38	2	123	1.2	E1	54	59
AUG													
23...	1440	E.006	E.009	E.001	<.006	.127	.53	4	1,370	1.2	2	54	79

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

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

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
05...	<.06	<.06	72	<.04	<.04	2	1.4	3.7	11	40	<.08	E.03	22.9
MAR													
10...	<.06	<.06	79	<.04	<.04	<1	1.5	1.5	23	120	<.08	E.04	22.6
APR													
13...	<.06	<.06	66	<.04	<.04	<1	1.4	1.4	12	80	<.08	E.04	20.6
26...	<.06	<.06	66	<.04	<.04	<1	1.5	1.4	19	70	E.07	.08	20.1
MAY													
12...	<.06	<.06	70	<.04	<.04	4	1.4	1.6	12	200	<.08	.17	19.7
25...	<.06	<.06	69	<.04	<.04	5	1.8	3.1	9	310	<.08	.33	25.0
JUN													
08...	<.06	<.06	70	<.04	<.04	<1	1.5	2.7	20	310	<.08	.27	20.1
23...	<.06	<.06	68	<.04	<.04	<1	1.6	1.9	12	210	<.08	.19	20.4
JUL													
26...	<.06	<.06	64	<.04	<.04	<1	1.5	2.1	8	290	<.08	.28	20.4
AUG													
23...	<.06	.17	74	<.04	.05	9	1.8	7.3	E5	4,300	<.08	3.32	20.9

Date	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
FEB										
05...	8.4	13	<.02	1.62	2.82	.4	E.3	551	1.7	2
MAR										
10...	21.5	32	<.02	1.93	2.41	.5	.5	514	1.1	E2
APR										
13...	13.3	22	<.02	1.54	1.97	.5	.7	522	1.0	<2
26...	14.6	21	<.02	1.63	2.71	.4	E.4	507	1.3	E1
MAY										
12...	8.6	34	<.02	.94	3.05	.5	.5	494	.8	E2
25...	8.1	39	<.02	2.68	3.44	.4	.5	504	.7	E2
JUN										
08...	14.0	44	<.02	5.49	2.04	.5	E.4	476	1.6	3
23...	6.2	25	<.02	1.81	1.89	E.3	.5	452	1.0	E2
JUL										
26...	6.0	43	<.02	2.14	2.65	.4	E.4	436	1.0	E2
AUG										
23...	3.9	86	<.02	1.70	5.33	.5	.8	447	1.2	13

E--Estimated.

06307616 TONGUE RIVER AT BIRNEY DAY SCHOOL BRIDGE, NEAR BIRNEY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1				669	657	663	656	639	650	619	582	604
2				658	649	654	652	636	645	627	602	619
3				657	642	650	646	632	638	613	599	607
4				657	633	644	642	625	633	616	601	609
5				---	---	*690	642	621	632	607	586	598
6				---	---	---	643	613	632	610	588	598
7				---	---	---	638	609	625	620	601	610
8				---	---	---	646	611	629	611	602	607
9				---	---	---	647	625	636	617	600	608
10				---	---	---	648	628	638	614	602	609
11				---	---	---	638	611	628	617	604	610
12				---	---	---	645	611	631	617	600	608
13				676	665	672	637	611	628	624	607	615
14			*788	676	668	673	637	610	624	627	605	615
15				---	---	---	633	606	623	633	604	622
16				679	662	673	629	605	618	632	600	618
17				666	654	662	639	616	629	625	600	618
18				660	649	657	632	620	626	619	597	607
19				661	647	656	636	618	626	620	601	610
20				---	---	---	636	613	627	627	604	614
21				---	---	---	624	611	618	624	602	614
22				---	---	---	627	614	622	617	600	608
23				---	---	---	628	613	621	614	598	606
24				---	---	---	624	603	618	611	595	602
25				---	---	*671	615	598	606	611	595	603
26			*676	658	642	652	622	601	614	615	590	602
27				658	642	651	611	595	603	615	589	604
28				659	645	653	614	597	606	598	571	589
29	675	666	671	655	636	647	605	593	598	587	569	577
30	676	666	670	657	636	650	605	585	595	592	571	581
31	---	---	---	661	647	656	---	---	---	586	571	577
MONTH	676	666	670	679	633	657	656	585	624	633	569	605
		AUGUST				SEPTEMBER						
1	580	564	571	624	608	614						
2	571	560	565	638	623	630						
3	569	557	562	635	619	627						
4	572	549	561	645	626	635						
5	573	550	565	674	641	656						
6	658	548	574	674	653	661						
7	579	558	567	663	641	651						
8	576	559	565	655	641	648						
9	572	556	564	655	639	645						
10	571	556	562	650	635	641						
11	575	556	565	647	628	636						
12	577	566	571	650	634	641						
13	582	560	570	650	618	631						
14	580	562	571	642	620	629						
15	590	570	578	653	635	643						
16	595	579	587	661	644	650						
17	590	579	583	664	649	656						
18	587	578	582	662	651	657						
19	594	585	589	661	643	651						
20	586	583	584	655	625	639						
21	592	583	586	638	625	631						
22	592	580	588	650	635	639						
23	618	582	593	665	650	659						
24	607	584	598	667	653	660						
25	611	607	608	666	657	661						
26	610	602	605	672	664	668						
27	620	604	612	674	659	667						
28	616	609	612	675	665	669						
29	617	608	612	686	669	675						
30	623	610	616	693	686	690						
31	623	612	616	---	---	---						
MONTH	658	548	583	693	608	649						

*--Instantaneous value from USGS sample or field measurement.

06307740 OTTER CREEK AT ASHLAND, MT

LOCATION.--Lat 45°38'18", long 106°15'17" (NAD 27), in NE¼NE¼SE¼ sec.11, T.3 S., R.44 E.,Rosebud County, Hydrologic Unit 10090102, on left bank 200 ft downstream from bridge on U.S. Highway 212, 0.3 mi southeast of Ashland, and at river mile 2.7.

DRAINAGE AREA.--707 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to November 1985, October 1987 to September 1995, October 2003 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 2,916.57 ft (NGVD 29).

REMARKS.--Water-discharge records poor. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming (combined capacity, about 15,000 acre-ft). Diversion for irrigation of about 4,200 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.50	1.9	e1.0	e0.90	e0.80	e1.0	7.4	e0.60	e1.5	e1.2	e0.70	e0.40
2	e0.50	1.7	e1.0	e0.80	e0.80	e1.0	7.1	e0.50	e1.5	e1.2	e0.70	e0.40
3	e0.50	1.6	e1.0	e0.70	e0.75	e1.0	7.0	e0.50	e1.5	e1.1	e0.70	e0.40
4	e0.50	1.5	e1.0	e0.50	e0.75	e1.0	6.2	e0.50	1.4	e1.1	e0.60	e0.40
5	e0.50	1.5	e0.90	e0.40	e0.75	e1.0	6.1	e0.50	1.2	e1.0	e0.50	e0.40
6	e0.55	1.6	e1.0	e0.50	e0.70	e1.0	6.5	e0.50	1.1	e1.1	e0.40	e0.40
7	e0.55	1.4	e1.0	e0.70	e1.0	e0.90	5.8	e0.50	0.96	e1.1	e0.40	e0.40
8	0.50	1.5	e1.0	e0.90	e0.80	e0.90	6.4	e0.50	e0.75	e1.0	e0.40	e0.40
9	0.50	1.2	e1.0	e1.0	e0.80	e1.0	6.0	e0.40	e0.75	e1.0	e0.40	e0.40
10	0.50	0.96	e1.0	e1.0	e1.0	e1.5	5.8	e0.50	e0.75	e1.0	e0.40	e0.40
11	e0.50	0.88	e0.90	e1.0	e1.0	e2.5	5.3	e0.50	e0.80	e1.0	e0.40	e0.40
12	e0.60	0.75	e0.80	e1.0	e0.80	4.8	4.8	e0.50	e0.80	e1.0	e0.40	e0.40
13	e0.60	0.38	e0.90	e1.0	e0.90	8.3	4.4	e0.50	e0.80	e1.0	e0.40	e0.40
14	e0.60	0.44	e1.0	e1.0	e1.0	14	3.9	e0.50	e0.80	1.0	e0.40	e0.40
15	e0.60	0.65	e1.0	e1.0	e1.0	14	e4.0	e0.50	e0.80	e1.0	e0.40	e0.40
16	e0.60	0.63	e1.0	e1.0	e1.0	13	e4.0	e0.50	e0.80	e1.0	e0.40	e0.45
17	e0.60	0.70	e1.0	e0.90	e1.0	14	e3.5	e0.60	e0.90	e1.0	0.40	e0.50
18	e0.60	0.72	e1.0	e1.0	e1.0	13	e3.5	e0.60	e0.90	e1.0	e0.40	e0.50
19	e0.60	0.71	e1.0	e1.0	e1.0	11	e3.0	e0.70	e1.0	e1.0	e0.40	e0.50
20	e0.60	0.70	e1.0	e1.0	e1.0	10	e3.0	e0.80	e1.0	e1.0	e0.40	e0.50
21	e0.60	e0.65	e1.0	e1.0	e1.5	8.2	e2.5	2.9	1.1	e0.90	e0.40	e0.50
22	e0.60	e0.60	e1.0	e1.0	e1.0	6.9	e2.5	1.6	e1.1	e0.90	e0.40	e0.50
23	e0.60	e0.50	e1.0	e1.5	e1.0	5.8	e2.0	e1.6	e1.1	e0.90	e0.40	e0.50
24	e0.60	e0.60	e1.0	e1.5	e1.0	7.2	e1.5	e1.8	e1.1	e0.90	e0.40	e0.50
25	e0.60	e0.70	e1.0	e1.0	e1.5	7.6	e1.3	e1.5	1.1	e0.80	e0.40	e0.50
26	e0.70	e0.80	e1.0	e0.90	e1.5	7.2	e1.2	e1.5	e1.1	e0.80	e0.40	0.63
27	e0.80	e1.0	e1.5	e0.80	e1.5	7.4	e1.0	e1.5	e1.2	e0.80	e0.40	0.56
28	e1.0	e1.0	e1.0	e0.70	e1.0	7.5	e0.90	e1.5	e1.2	e0.80	e0.40	0.72
29	e1.5	e1.0	e0.90	e0.80	e1.0	7.4	e0.80	e1.5	e1.2	e0.80	e0.40	0.93
30	1.7	e1.0	e1.0	e0.90	---	7.1	e0.70	e1.5	e1.2	e0.80	e0.40	0.89
31	2.1	---	e1.0	e0.90	---	7.9	---	e1.5	---	e0.80	e0.40	---
TOTAL	21.80	29.27	30.90	28.30	28.85	195.10	118.10	29.10	31.41	30.00	13.60	14.68
MEAN	0.70	0.98	1.00	0.91	0.99	6.29	3.94	0.94	1.05	0.97	0.44	0.49
MAX	2.1	1.9	1.5	1.5	1.5	14	7.4	2.9	1.5	1.2	0.70	0.93
MIN	0.50	0.38	0.80	0.40	0.70	0.90	0.70	0.40	0.75	0.80	0.40	0.40
AC-FT	43	58	61	56	57	387	234	58	62	60	27	29

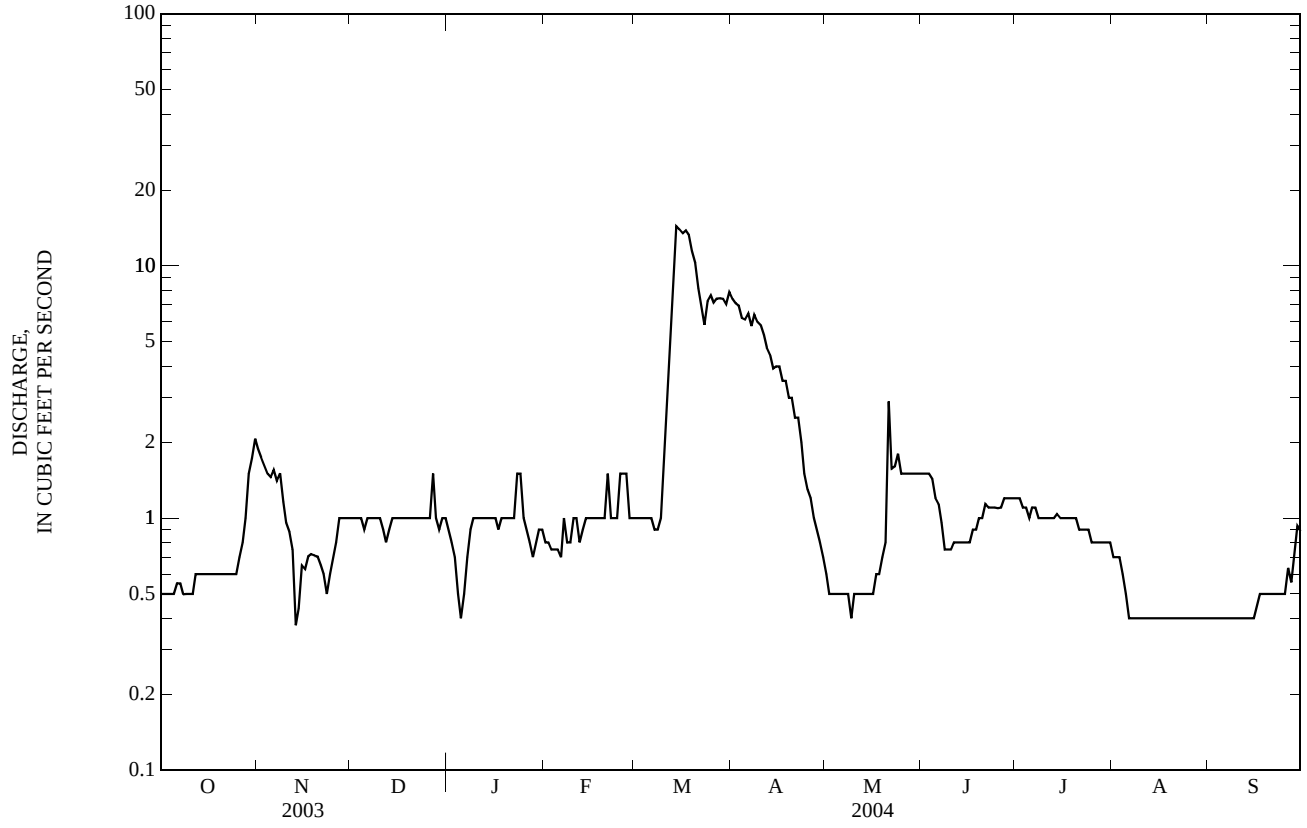
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY*)

MEAN	1.39	2.45	2.44	4.73	6.78	15.0	6.35	6.98	4.25	2.23	1.32	0.87
MAX	4.43	6.12	7.03	30.2	34.9	107	28.1	53.1	15.7	8.93	5.53	4.08
(WY)	(1973)	(1980)	(1976)	(1975)	(1974)	(1975)	(1975)	(1978)	(1978)	(1978)	(1982)	(1978)
MIN	0.18	0.71	0.57	0.10	0.36	1.26	0.99	0.71	0.36	0.28	0.00	0.00
(WY)	(1993)	(1992)	(1993)	(1991)	(1993)	(1992)	(1992)	(1992)	(1993)	(1977)	(1992)	(1992)

06307740 OTTER CREEK AT ASHLAND, MT—Continued

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004*	
ANNUAL TOTAL	571.11			
ANNUAL MEAN	1.56		b4.57	
HIGHEST ANNUAL MEAN			19.0	1975
LOWEST ANNUAL MEAN			0.60	1992
HIGHEST DAILY MEAN	14	Mar 14	350	Mar 6, 1994
LOWEST DAILY MEAN	0.38	Nov 13	0.00	Oct 14, 1976
ANNUAL SEVEN-DAY MINIMUM	0.40	Aug 6	0.00	Jun 24, 1977
MAXIMUM PEAK FLOW	Unknown		425	Mar 21, 1978
MAXIMUM PEAK STAGE	a5.15	Feb 21	a9.08	Mar 6, 1994
INSTANTANEOUS LOW FLOW			c0.00	Oct 1, 1990
ANNUAL RUNOFF (AC-FT)	1,130		3,310	
10 PERCENT EXCEEDS	3.6		8.0	
50 PERCENT EXCEEDS	0.98		2.0	
90 PERCENT EXCEEDS	0.40		0.29	

*--During period of operation (1973-85, 1988-95, October 2003 to September 2004).
a--Backwater from ice and beaver dam.
b--Median of yearly mean discharge, 3.4 ft^3/s, 2,460 acre-ft/yr.
c--No flow at times most years.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-85, July 2003 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1980 to August 1985, May 2004 to September 2004.

INSTRUMENTATION.--A specific conductance probe was installed in May 2004.

REMARKS.--Specific conductance record is rated good. Missing daily specific conductance data for June 19-21, July 7-13, 20-21, 23-31, Aug. 3, Sept. 15-16 due to equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 3,850 microsiemens per centimeter (µS/cm), Dec. 3, 1983; minimum daily mean, 942 µS/cm , Feb. 19, 1982.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 3,050 microsiemens per centimeter (µS/cm), June 6; minimum daily mean, 2,310 µS/cm, May 25.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
07...	1400	E.55	678	13.1	151	8.8	2,210	26.0	16.0	610	53.6	116	16.3
NOV													
13...	1400	.84	685	12.0	101	8.5	2,200	12.0	3.5	680	75.3	119	17.0
DEC													
03...	1200	E1.0	686	13.7	105	8.2	2,740	0.0	0.0	840	90.6	150	21.3
FEB													
03...	0945	E.75	687	13.0	100	7.6	2,640	-4.0	0.0	750	86.2	129	18.1
MAR													
10...	1300	E1.5	691	--	--	8.4	1,960	7.0	0.5	600	64.0	107	13.3
APR													
14...	0830	4.7	677	7.6	78	8.5	2,760	12.0	11.0	840	81.0	154	19.5
26...	1000	E1.2	694	6.5	69	8.5	2,820	18.0	13.5	740	72.2	135	17.4
MAY													
12...	1030	E.50	687	9.0	90	8.5	2,870	6.5	10.5	820	77.3	152	20.2
24...	1100	1.8	652	7.6	89	8.4	2,330	13.0	14.5	660	64.2	121	17.0
JUN													
08...	0845	E.75	685	8.2	98	8.6	2,930	15.0	18.0	810	73.0	151	20.9
23...	1200	E1.1	688	10.3	131	8.5	2,670	30.0	21.5	740	65.0	140	19.9
JUL													
13...	0830	E1.0	680	--	--	8.2	2,690	19.0	20.0	700	56.6	135	20.3
AUG													
18...	0745	E.40	689	7.8	97	8.0	2,390	17.5	20.5	650	51.9	126	19.3

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT													
07...	5	296	454	11.9	.8	7.4	786	1,560	2.12	E2.32	39	59	E.09
NOV													
13...	5	295	506	12.8	.9	18.2	715	1,560	2.12	3.53	88	186	.42
DEC													
03...	6	401	565	15.0	1.0	17.7	1,020	2,060	2.80	E5.55	77	69	E.19
FEB													
03...	6	368	511	13.0	1.0	20.8	943	1,890	2.57	E3.83	50	53	E.12
MAR													
10...	5	270	357	9.37	.6	7.39	761	1,450	1.97	E5.87	86	19	E.08
APR													
14...	6	404	525	13.7	.9	7.97	1,040	2,040	2.77	25.9	68	158	2.0
26...	6	377	587	13.1	.9	6.97	1,050	2,020	2.75	E6.56	92	131	E.42
MAY													
12...	7	444	579	14.0	1.0	8.38	1,110	2,170	2.96	E2.94	85	103	E.14
24...	6	332	503	10.7	.8	9.09	829	1,690	2.29	8.20	95	73	.35
JUN													
08...	7	434	610	12.9	1.0	7.36	1,050	2,120	2.89	E4.29	68	113	E.23
23...	6	402	575	13.7	.9	5.69	944	1,940	2.64	E5.76	95	92	E.27
JUL													
13...	7	397	598	13.7	1.0	8.12	961	1,950	2.66	E5.27	97	26	E.07
AUG													
18...	6	330	580	13.4	.9	13.0	825	1,730	2.35	E1.87	95	112	E.12

E--Estimated.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

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

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, water, unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)
FEB													
03...	0945	.061	.677	.009	1.01	<.006	.019	<3	129	1.0	E1	29	33
MAR													
10...	1300	<.010	E.013	.002	.54	<.006	.046	E1	60	1.0	E1	23	25
APR													
14...	0830	E.009	<.016	<.002	.90	<.006	.066	<3	371	1.7	2	38	48
26...	1000	E.005	<.016	<.002	.67	<.006	.089	<3	589	1.7	E2	43	57
MAY													
12...	1030	<.010	<.016	E.001	.63	<.006	.043	<3	183	1.9	E2	41	43
24...	1100	<.010	<.016	E.001	.44	<.006	.085	2	467	1.9	2	60	69
JUN													
08...	0845	<.010	<.016	E.001	.60	<.006	.05	<3	172	3.0	3	54	58
23...	1200	.011	<.016	<.002	.69	<.006	.054	<3	234	2.3	2	46	50
JUL													
13...	0830	E.005	<.016	<.002	.87	<.006	.082	E2	276	4.5	3	46	55
AUG													
18...	0745	.025	E.012	.002	.93	<.006	.111	3	726	3.7	4	42	60

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
03...	<.12	<.12	464	<.08	E.04	6	4.0	6.6	E16	390	<.16	.51	114
MAR													
10...	<.06	<.06	289	<.04	<.04	<1	3.7	4.9	50	310	<.08	.15	74.1
APR													
14...	<.12	<.12	491	<.08	<.08	12	4.2	7.0	E14	890	<.16	.91	111
26...	<.12	<.12	472	<.08	E.07	1	4.8	8.0	<19	1,360	E.11	1.41	107
MAY													
12...	<.12	<.12	588	<.08	<.08	12	6.1	6.2	<19	490	<.16	.52	121
24...	<.06	E.05	468	E.02	E.03	14	4.2	7.3	E12	1,030	<.08	1.13	119
JUN													
08...	<.12	<.12	594	<.08	<.08	<1	5.9	8.1	<19	470	<.16	.45	124
23...	<.12	<.12	584	<.08	<.08	<1	5.8	7.3	E13	540	<.16	.55	114
JUL													
13...	<.12	<.12	611	<.08	E.04	E3	4.7	7.3	E14	620	<.16	.69	113
AUG													
18...	<.06	.06	613	E.04	.07	<1	6.4	6.8	<19	1,600	.09	1.61	107

E--Estimated.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

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

Date	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
FEB										
03...	54.2	67	<.02	3.15	4.84	2.3	1.9	1,990	8.9	11
MAR										
10...	76.4	77	<.02	3.34	4.02	1.2	1.1	1,250	2.3	3
APR										
14...	51.8	144	<.02	3.67	5.84	1.6	1.0	1,710	2.6	7
26...	40.4	146	<.02	3.88	7.74	1.5	.9	1,760	3.3	8
MAY										
12...	28.7	69	<.02	3.19	5.87	1.5	1.2	1,780	5.0	5
24...	40.8	141	<.02	4.34	5.36	1.3	1.4	1,400	2.0	6
JUN										
08...	76.6	107	<.02	3.61	7.00	1.4	1.3	1,740	3.1	12
23...	36.0	85	<.02	3.71	5.30	.9	1.3	1,430	3.4	6
JUL										
13...	65.6	119	<.02	3.57	5.69	1.3	1.0	1,320	2.6	7
AUG										
18...	16.4	139	<.02	2.92	5.99	1.4	1.9	1,210	3.3	8

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MAY			JUNE			JULY			AUGUST		
1	---	---	---	2,870	2,830	2,850	2,820	2,770	2,800	2,860	2,840	2,850
2	---	---	---	2,920	2,870	2,890	2,800	2,750	2,770	2,860	2,840	2,860
3	---	---	---	3,000	2,920	2,980	2,800	2,750	2,770	---	---	---
4	---	---	---	3,030	3,000	3,020	2,840	2,740	2,780	2,830	2,770	2,810
5	---	---	---	3,020	2,990	3,000	2,810	2,660	2,730	2,810	2,710	2,780
6	---	---	---	3,050	3,000	3,020	2,740	2,600	2,640	2,800	2,740	2,780
7	---	---	---	3,020	2,970	2,990	2,660	2,590	2,630	2,780	2,760	2,770
8	---	---	---	3,020	2,980	3,000	---	---	---	2,770	2,710	2,760
9	---	---	---	3,010	2,970	2,990	---	---	---	2,770	2,690	2,720
10	---	---	---	3,000	2,960	2,990	---	---	---	2,760	2,700	2,740
11	---	---	---	2,980	2,920	2,950	---	---	---	2,760	2,650	2,720
12	---	---	*2,870	2,920	2,900	2,910	---	---	---	2,740	2,680	2,720
13	---	---	---	2,930	2,890	2,910	---	---	*2,690	2,740	2,690	2,710
14	---	---	---	2,890	2,860	2,870	2,780	2,620	2,770	2,720	2,680	2,700
15	---	---	---	2,880	2,840	2,860	2,790	2,770	2,780	2,700	2,670	2,680
16	---	---	---	2,880	2,810	2,850	2,780	2,760	2,770	2,690	2,670	2,680
17	---	---	---	2,860	2,820	2,830	2,780	2,770	2,770	2,680	2,640	2,670
18	---	---	---	2,820	2,800	2,800	2,780	2,770	2,780	2,690	2,640	2,670
19	---	---	---	---	---	---	2,800	2,780	2,790	2,680	2,650	2,670
20	---	---	*2,700	---	---	---	---	---	---	2,680	2,660	2,670
21	---	---	---	---	---	*2,670	---	---	---	2,670	2,640	2,660
22	---	---	---	2,720	2,700	2,700	2,840	2,770	2,830	2,660	2,590	2,650
23	---	---	---	2,710	2,650	2,680	---	---	---	2,650	2,610	2,630
24	---	---	*2,330	2,700	2,660	2,670	---	---	---	2,630	2,590	2,600
25	2,350	2,310	2,330	2,690	2,660	2,680	---	---	---	2,650	2,570	2,620
26	2,450	2,350	2,410	2,730	2,680	2,710	---	---	---	2,650	2,540	2,590
27	2,470	2,440	2,450	2,760	2,720	2,750	---	---	---	2,710	2,550	2,660
28	2,620	2,470	2,520	2,780	2,760	2,770	---	---	---	2,730	2,550	2,650
29	2,670	2,620	2,650	2,790	2,780	2,790	---	---	---	2,760	2,560	2,640
30	2,740	2,670	2,700	2,800	2,780	2,800	---	---	---	2,600	2,560	2,570
31	2,830	2,740	2,790	---	---	---	---	---	---	2,590	2,570	2,580
MONTH	2,830	2,310	2,550	3,050	2,650	2,860	2,840	2,590	2,760	2,860	2,540	2,690

*--Instantaneous value from USGS sample or field inspection.

06307740 OTTER CREEK AT ASHLAND, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
		SEPTEMBER	
1	2,610	2,590	2,600
2	2,640	2,610	2,620
3	2,640	2,620	2,630
4	2,630	2,610	2,620
5	2,640	2,630	2,630
6	2,640	2,640	2,640
7	2,640	2,630	2,640
8	2,650	2,630	2,640
9	2,660	2,650	2,650
10	2,680	2,660	2,670
11	2,700	2,680	2,690
12	2,740	2,700	2,710
13	2,730	2,700	2,720
14	2,720	2,640	2,700
15	---	---	*2,590
16	---	---	---
17	2,690	2,680	2,680
18	2,700	2,680	2,690
19	2,690	2,650	2,670
20	2,660	2,600	2,630
21	2,620	2,590	2,600
22	2,620	2,560	2,590
23	2,630	2,570	2,590
24	2,660	2,570	2,600
25	2,660	2,610	2,630
26	2,670	2,570	2,620
27	2,650	2,570	2,620
28	2,600	2,500	2,550
29	2,540	2,460	2,500
30	2,490	2,440	2,470
31	---	---	---
MONTH	2,740	2,440	2,630

*--Instantaneous value from USGS sample or field inspection.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT

LOCATION.--Lat 45°50'24", long 106°13'22" (NAD 27), in SE¼SW¼NE¼ sec.14, T.1N., R.44E., Rosebud County, Hydrologic Unit 10090102, on right bank downstream from county bridge, 22 mi north of Ashland, and at river mile 81.3.

DRAINAGE AREA.--3,948 mi^2. Area at site used prior to July 2000, 4,062 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to September 1984, July 2000 to current year.

GAGE--Water-stage recorder. Elevation of gage is 2,760 ft (NGVD 29), from topographic map. October 1973 to September 1984, water-stage recorder at site 6.5 mi downstream at different elevation.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by Tongue River Reservoir (station number 06307000), and many small reservoirs in Wyoming combined capacity (about 15,000 acre-ft). Diversions for irrigation for about 73,000 acres above station. U. S. Geological Survey satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	144	e160	e100	e110	e190	186	152	188	202	229	116
2	154	143	e140	e90	e110	e190	183	154	179	206	231	110
3	153	142	e130	e80	e120	e200	184	154	164	201	244	115
4	147	142	e120	e70	e120	e200	184	144	160	207	244	118
5	140	e100	e100	e60	e120	e200	185	138	148	210	246	121
6	136	e110	e130	e80	e120	e200	183	133	147	213	280	121
7	e135	e120	e120	e100	e140	e220	168	157	140	213	277	109
8	e135	e130	e130	e100	e160	234	165	164	145	183	242	105
9	e136	e140	e130	e110	e140	246	173	162	156	184	227	103
10	140	e140	e130	e120	e120	208	169	175	156	187	222	101
11	139	e150	e120	e120	e100	188	167	177	166	195	214	100
12	139	e150	e100	e120	e90	176	166	175	188	192	201	103
13	140	e150	e110	e120	e100	165	165	181	214	183	190	111
14	140	e150	e120	e120	e110	159	165	183	206	178	185	115
15	142	e140	e130	e120	e120	158	151	182	211	184	192	113
16	144	e130	e130	e120	e120	155	149	212	207	189	187	109
17	144	e120	e140	e110	e130	155	149	236	214	200	178	112
18	143	e100	e140	e120	e160	155	153	240	217	203	168	97
19	142	e100	e150	e120	e250	153	154	238	216	202	170	99
20	144	e90	e150	e130	e170	150	144	236	e200	196	172	105
21	146	e80	e140	e130	e160	173	147	232	e200	204	177	109
22	150	e70	e140	e120	e150	187	147	276	e190	205	184	111
23	147	e90	e140	e120	e170	188	151	263	e190	217	197	112
24	138	e110	e140	e100	e180	187	145	251	192	238	182	103
25	137	e140	e150	e90	e180	188	146	228	184	248	175	100
26	138	186	e160	e80	e200	189	145	217	192	242	144	100
27	139	258	e160	e70	e220	188	135	212	198	237	126	98
28	140	e200	e150	e70	e210	187	135	206	200	241	126	99
29	161	e180	e140	e80	e200	188	139	208	183	232	125	103
30	154	e170	e130	e90	---	186	147	214	186	229	120	105
31	149	---	e120	e120	---	186	---	205	---	228	119	---
TOTAL	4,453	4,075	4,150	3,180	4,280	5,749	4,780	6,105	5,537	6,449	5,974	3,223
MEAN	144	136	134	103	148	185	159	197	185	208	193	107
MAX	161	258	160	130	250	246	186	276	217	248	280	121
MIN	135	70	100	60	90	150	135	133	140	178	119	97
AC-FT	8,830	8,080	8,230	6,310	8,490	11,400	9,480	12,110	10,980	12,790	11,850	6,390

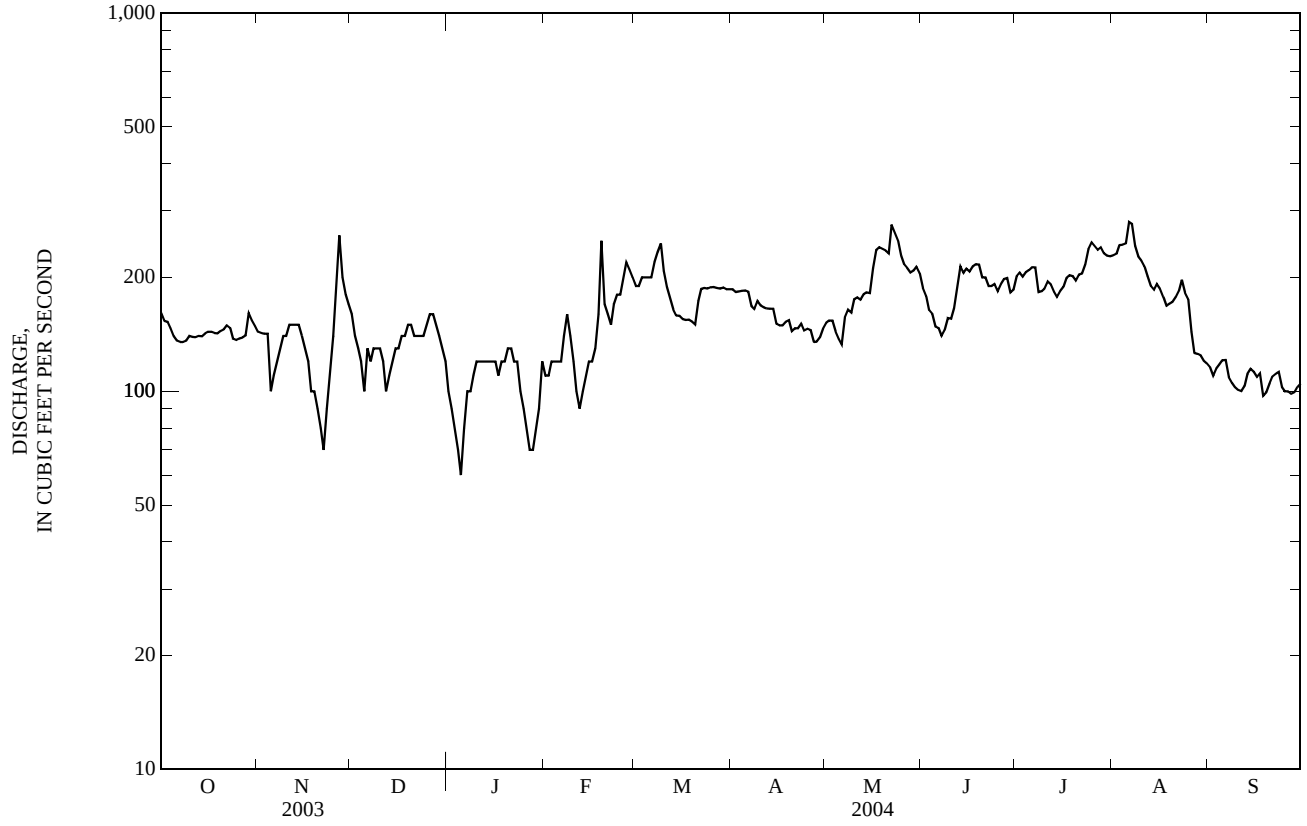
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY)*

MEAN	257	203	184	204	216	287	300	759	1,323	630	405	292
MAX	511	388	389	334	406	705	594	2,502	3,452	2,261	915	436
(WY)	(1974)	(1974)	(1979)	(1975)	(1983)	(1975)	(1975)	(1978)	(1978)	(1975)	(1975)	(1979)
MIN	104	84.3	95.5	93.1	90.4	81.3	98.3	111	185	183	125	107
(WY)	(2002)	(1976)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2004)	(2002)	(2001)	(2004)

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004*	
ANNUAL TOTAL	121,306		57,955			
ANNUAL MEAN	332		158		424	
HIGHEST ANNUAL MEAN					885	1975
LOWEST ANNUAL MEAN					120	2002
HIGHEST DAILY MEAN	2,500	Mar 15	280	Aug 6	7,600	May 22, 1978
LOWEST DAILY MEAN	50	Feb 24	60	Jan 5	45	Nov 30, 1975
ANNUAL SEVEN-DAY MINIMUM	81	Feb 22	83	Jan 1	53	Nov 25, 1975
MAXIMUM PEAK FLOW			a394	Aug 6	c8,280	May 22, 1978
MAXIMUM PEAK STAGE			b8.36	Feb 22	b11.49	Mar 15, 2003
ANNUAL RUNOFF (AC-FT)	240,600		115,000		307,000	
10 PERCENT EXCEEDS	844		216		858	
50 PERCENT EXCEEDS	161		150		262	
90 PERCENT EXCEEDS	100		103		110	

*--During period of operation (October 1973 to September 1984, July 2000 to current year).
a--Gage height, 4.15 ft.
b--Backwater from ice.
c--Gage height, 9.96 ft, site and datum then in use.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-81, June 2000 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 2000 to current year, (seasonal operation dependent on ice conditions).
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1981.

INSTRUMENTATION.--Conductance probe installed Aug. 23, 2000.

REMARKS.--Specific conductance rated excellent from Oct. 24 to Nov. 13, May 12 to June 23, and Aug. 23 to Sept. 30. Record is rated good for the remaining period of operation. Missing conductance record for Oct. 2-23, May 18 and 19, June 9, 10, 20-23 due to equipment problems. Missing water-quality data for Sept. 15 due to loss of samples during shipment to lab. Samples of aquatic insects and algae were collected to obtain baseline information on biological conditions.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,140 microsiemens per centimeter (µS/cm), Jan. 2, 3, 2002; minimum, 361 µS/cm, July 1 and 2, 2003.
SEDIMENT CONCENTRATION: Maximum daily mean, 6,400 µg/L July 26, 1979; minimum daily mean, 1 mg/L Oct. 18, 24, 1976.
SEDIMENT LOAD: Maximum daily, 27,200 tons May 19, 1978; minimum daily, 0.47 ton Nov. 15-17, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: During period of seasonal operation, maximum, 850 microsiemens per centimeter (µS/cm), Nov. 8; minimum, 584 µS/cm, May 17.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT													
07...	1030	134	685	9.4	98	8.6	703	19.0	12.5	290	55.5	37.0	4.76
NOV													
13...	1200	E150	692	12.6	95	8.5	700	13.0	.0	300	57.7	36.6	4.07
DEC													
03...	1015	E130	691	11.7	89	8.1	756	8.0	.0	330	61.4	43.4	4.12
JAN													
22...	0900	E120	694	9.1	69	8.3	806	-1.0	.0	350	68.5	43.1	4.11
FEB													
04...	1000	E120	686	9.6	73	8.9	907	-10.0	.0	380	74.8	45.8	4.48
18...	1000	E160	687	9.2	70	8.1	870	8.0	.0	380	75.6	46.4	4.16
MAR													
10...	1430	199	696	--	--	8.2	720	6.5	5.0	290	56.1	36.4	3.75
23...	1100	189	652	10.8	110	7.9	808	13.5	9.0	340	64.2	44.6	4.57
APR													
14...	1100	167	682	9.4	99	8.5	784	19.0	12.5	320	58.8	41.6	4.46
28...	1230	137	681	9.4	102	8.5	780	10.5	14.0	330	61.2	42.4	4.56
MAY													
12...	1400	179	691	10.5	103	8.4	718	5.0	10.0	310	58.4	39.2	4.14
24...	1300	249	657	9.0	101	8.5	702	11.0	13.5	300	57.2	38.4	4.03
JUN													
08...	1215	146	690	8.5	100	8.5	764	17.0	18.0	310	53.0	42.0	4.77
23...	1430	E190	690	9.7	123	8.5	712	33.0	22.0	290	51.8	38.3	3.94
JUL													
13...	1130	189	680	7.9	105	8.4	680	31.0	23.5	250	42.1	35.4	4.03
26...	1400	246	688	8.0	108	8.4	670	35.0	25.0	260	46.7	33.8	3.82
AUG													
18...	1015	174	694	8.2	98	8.1	674	26.0	19.5	260	43.9	36.4	4.19
23...	1300	199	680	8.6	111	8.6	641	27.5	22.0	250	41.3	34.6	3.93
SEP													
15...	1230	110	687	9.3	105	8.6	736	19.0	16.0	--	--	--	--
28...	0900	101	692	9.2	95	8.4	780	14.0	12.5	290	48.6	41.7	4.79

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

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

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT													
07...	1	50.8	189	4.50	.3	4.4	167	437	.59	158	39	31	11
NOV													
13...	1	45.9	195	4.21	.4	4.4	162	432	.59	E175	73	50	E20
DEC													
03...	1	47.0	208	4.54	.3	4.1	177	466	.63	E164	85	22	E7.7
JAN													
22...	1	50.9	197	5.28	.4	5.45	173	469	.64	E152	87	17	E5.5
FEB													
04...	1	56.6	246	6.14	.4	5.87	200	543	.74	E176	82	29	E9.4
18...	1	58.5	221	5.42	.4	5.24	186	515	.70	E218	88	14	E6.0
MAR													
10...	1	50.2	194	4.59	.3	3.51	170	442	.60	237	86	36	19
23...	1	56.4	217	5.37	.4	1.80	188	496	.67	253	74	35	18
APR													
14...	1	53.6	214	5.60	.3	2.52	178	474	.64	214	83	26	12
28...	1	54.0	223	5.66	.3	3.15	185	490	.67	181	79	14	5.2
MAY													
12...	1	45.9	219	5.40	.3	3.87	169	458	.62	221	70	34	16
24...	1	44.6	209	5.05	.3	2.94	157	435	.59	293	90	61	41
JUN													
08...	1	57.1	221	5.65	.3	4.14	177	478	.65	188	81	41	16
23...	1	48.9	208	5.21	.3	2.24	161	437	.59	E224	91	48	E25
JUL													
13...	1	47.3	196	4.94	.3	2.68	157	411	.56	210	41	185	94
26...	1	38.9	202	4.64	.3	2.94	140	393	.53	261	91	50	33
AUG													
18...	1	45.7	198	4.53	.3	4.93	152	410	.56	193	96	50	23
23...	1	41.6	194	4.18	.4	4.61	149	396	.55	219	96	50	27
SEP													
15...	--	--	--	--	--	--	--	--	--	--	98	7	2.1
28...	1	55.3	228	4.93	.4	4.98	196	493	.67	134	69	27	7.4

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)
FEB													
04...	1000	E.005	<.016	<.002	.17	<.006	.004	<2	25	.7	<2	65	69
MAR													
10...	1430	<.010	<.016	<.002	.21	<.006	.021	E1	152	.6	E1	45	48
APR													
14...	1100	<.010	<.016	<.002	.25	<.006	.014	2	60	.8	<2	62	64
28...	1230	<.010	<.016	<.002	.24	<.006	.010	2	34	.7	<2	61	59
MAY													
12...	1400	<.010	<.016	<.002	.34	<.006	.029	<2	131	.8	<2	62	60
24...	1300	<.010	<.016	<.002	.23	<.006	.054	2	360	.7	<2	58	67
JUN													
08...	1215	<.010	<.016	E.001	.24	<.006	.029	2	176	1.0	E1	65	65
23...	1430	<.010	<.016	<.002	.34	<.006	.035	4	276	.7	<2	57	62
JUL													
26...	1400	<.010	<.016	<.002	.36	<.006	.039	4	353	1.0	<2	58	64
AUG													
23...	1300	<.010	<.016	<.002	.37	<.006	.043	2	459	1.0	<2	58	68

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

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

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover-able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)
FEB													
04...	<.06	<.06	99	--	.10	<.04	<1	1.9	1.6	11	90	E.04	.10
MAR													
10...	<.06	<.06	78	--	<.04	<.04	<1	1.5	1.9	13	320	<.08	.25
APR													
14...	<.06	<.06	103	--	<.04	<.04	<1	1.7	1.8	15	160	<.08	.11
28...	<.06	<.06	114	--	<.04	<.04	<1	2.2	1.4	13	100	<.08	.09
MAY													
12...	<.06	<.06	92	--	<.04	<.04	5	1.9	1.9	12	320	<.08	.34
24...	<.06	E.03	85	--	<.04	<.04	6	1.9	10.6	10	820	E.05	.82
JUN													
08...	<.06	<.06	103	--	<.04	<.04	<1	2.1	3.0	15	400	E.05	.40
23...	<.06	<.06	84	--	<.04	E.02	<1	2.4	2.5	E5	590	<.08	.59
JUL													
26...	<.06	<.06	76	--	<.04	E.02	<1	2.0	3.5	<6	630	<.08	.66
AUG													
23...	<.06	E.05	84	91	<.04	<.04	<1	1.5	2.9	E4	1,000	<.08	.88

Date	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)
FEB											
04...	24.7	10.4	13	<.02	2.09	3.05	.5	E.3	670	2.3	4
MAR											
10...	19.6	20.9	36	<.02	2.50	2.51	E.4	E.4	532	.9	3
APR											
14...	23.0	13.7	35	<.02	1.80	2.38	.4	E.4	617	1.1	E2
28...	23.4	16.7	25	<.02	2.15	1.39	E.4	E.2	627	2.5	E2
MAY											
12...	22.3	8.1	48	<.02	1.56	2.79	.5	.6	576	1.0	E2
24...	23.2	5.6	76	<.02	2.82	3.28	E.4	E.4	545	.8	4
JUN											
08...	26.5	4.9	70	<.02	1.80	3.17	.5	.6	616	1.1	2
23...	19.2	6.2	54	<.02	1.96	2.13	E.2	E.4	531	1.2	3
JUL											
26...	23.6	3.2	55	<.02	3.92	3.31	.5	.5	497	1.6	4
AUG											
23...	23.8	3.5	50	<.02	2.80	3.85	E.3	.6	475	.8	5

E--Estimated.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 (SEASONAL)

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			APRIL			MAY	
1	694	638	685	733	726	729				811	752	761
2	---	---	---	746	732	736				822	765	792
3	---	---	---	748	733	741				766	756	761
4	---	---	---	757	736	741				765	756	761
5	---	---	---	813	757	786				767	756	762
6	---	---	---	846	810	827				771	762	766
7	---	---	703*	844	818	833				769	747	757
8	---	---	---	850	818	837				747	739	743
9	---	---	---	838	796	819				744	736	739
10	---	---	---	806	767	789				737	724	728
11	---	---	---	767	731	753				724	694	719
12	---	---	---	747	721	735				730	702	721
13	---	---	---							732	727	730
14	---	---	---							730	722	726
15	---	---	---							738	727	732
16	---	---	---							735	696	725
17	---	---	---							715	584	695
18	---	---	---							---	---	---
19	---	---	---							---	---	---
20	---	---	---							720	706	714
21	---	---	---							724	713	718
22	---	---	---							745	673	692
23	---	---	---							776	686	712
24	736	732	734							699	685	693
25	737	734	736							708	698	704
26	737	731	734							726	697	708
27	739	734	735							735	720	729
28	741	716	737				---	---	*780	740	725	735
29	716	691	698				776	767	772	734	723	730
30	716	696	705				768	756	761	726	718	722
31	728	715	722				---	---	---	730	716	723
MONTH	741	638	721	850	721	777	776	756	766	822	584	731
		JUNE			JULY			AUGUST			SEPTEMBER	
1	740	726	733	695	677	683	662	647	654	748	733	742
2	748	731	739	679	667	673	664	649	655	749	740	744
3	761	742	751	672	645	661	651	621	639	743	728	736
4	762	751	759	670	655	662	652	633	644	738	726	731
5	763	756	761	680	664	674	645	625	635	730	720	726
6	766	760	763	678	661	671	644	621	634	732	720	726
7	771	761	765	680	664	670	650	602	631	752	732	743
8	768	758	764	691	665	676	658	616	638	762	740	750
9	---	---	---	698	661	682	700	653	673	766	746	756
10	---	---	---	698	680	691	675	662	668	775	759	765
11	739	707	726	690	655	673	670	653	662	773	761	768
12	719	708	713	684	655	669	669	656	663	771	761	766
13	710	696	702	684	669	676	670	658	664	765	736	745
14	707	687	697	687	676	681	675	663	669	736	720	725
15	708	687	698	687	675	680	671	664	668	733	717	724
16	707	694	701	687	678	681	667	657	662	740	723	730
17	697	686	691	684	670	678	668	659	663	750	734	740
18	690	677	684	685	672	679	665	659	661	772	749	758
19	684	668	677	693	668	679	661	653	658	777	764	769
20	---	---	---	693	683	689	657	652	654	778	758	766
21	---	---	---	693	671	682	657	653	655	766	753	759
22	---	---	---	686	669	680	661	654	659	767	763	765
23	---	---	*712	678	666	672	656	645	649	767	762	764
24	708	694	699	670	652	664	657	652	655	771	762	766
25	708	702	705	663	648	656	661	651	655	772	763	768
26	705	694	699	657	645	650	684	661	673	776	764	769
27	700	691	696	658	647	653	710	684	704	780	770	775
28	696	682	689	651	644	649	716	707	712	791	761	782
29	707	695	700	656	643	650	720	715	717	784	745	769
30	704	688	694	660	646	653	729	719	724	786	766	780
31	---	---	---	662	648	655	738	727	733	---	---	---
MONTH	771	668	717	698	643	671	738	602	666	791	717	754

*--Instantaneous value from USGS sample.

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

BIOLOGICAL SAMPLE, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Biomass periphyton, ashfree drymass g/m2 (49954)	Periphyton biomass ash weight, g/m2 (00572)	Periphyton biomass dry weight, g/m2 (00573)	Biomass chlorophyll ratio, periphyton, number (70950)	Pheophytin a, periphyton, mg/m2 (62359)	Chlorophyll a periphyton, mg/m2 (70957)
SEP 24...	1100	186	8.3	640	10.0	13.5	114.5	1,500	1,604	4,880	3.9	23.5

BENTHIC INVERTEBRATE SAMPLES
SEPTEMBER 23, 2003

Qualitive multiple habitat sample--visual selection
Equipment type--D-frame net;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Nematoda	8	0.2
Tubificidae	15	0.5
Sphaeriidae	15	0.5
ODONATA		
Gomphidae	15	0.5
Calopterygidae	143	4.3
Coenagrionidae	30	0.9
EPHEMEROPTERA		
Acentrella insignificans	218	6.6
Acentrella parvula	15	0.5
Camelobaetidius warreni	75	2.3
Fallceon quilleri	270	8.2
Brachycercus	8	0.2
Rhithrogena	15	0.5
Stenonema	45	1.4
Asioplax	8	0.2
Tricorythodes	263	8.0
Neochoroterpes	113	3.4
PLECOPTERA		
Acroneuria abnormis	23	0.7
HEMIPTERA		
Corixidae	8	0.2
Ambrysus	8	0.2
TRICHOPTERA		
Brachycentrus occidentalis	23	0.7
Protoptila	8	0.2
Cheumatopsyche	390	11.8
Hydropsyche	90	2.7
Nectopsyche	68	2.0
Oecetis	8	0.2
Neureclipsis	15	0.5
LEPIDOPTERA		
Petrophila	30	0.9
COLEOPTERA		
Dubiraphia	180	5.5
Microcylloepus	645	19.5
Stenelmis	353	10.7
DIPTERA		
Simulium	120	3.6
Dicranota	8	0.2
CHIRONOMIDAE		
Chironomidae-pupae	15	0.5
Cricotopus/Orthocladius	30	0.9
Parakiefferiella	8	0.2
Paralauterborniella	8	0.2
Thienemanniella	15	0.5
Total number of taxon	37	
Total number of organisums	3,300	
Hilsenhoff biotic index	7	
EPT abundance	1,650	
Number of EPT taxon	18	

Richest targeted habitat sample--riffles
Composite of 5 samples (area of 0.25 m^2/sample)
Equipment type--Slack sampler;
mesh size--500 µm

Organism	No. of individuals	Percentage of composition
NON INSECTS		
Tubificidae	6	0.2
Lumbricidae	6	0.2
Sphaeriidae	6	0.2
ODONATA		
Gomphidae	12	0.4
Calopterygidae	12	0.4
EPHEMEROPTERA		
Acentrella insignificans	696	22.5
Acentrella parvula	6	0.2
Camelobaetidius warreni	36	1.2
Fallceon quilleri	300	9.7
Rhithrogena	198	6.4
Stenonema	24	0.8
Asioplax	12	0.4
Tricorythodes	78	2.5
Neochoroterpes	156	5.0
PLECOPTERA		
Acroneuria abnormis	6	0.2
Isogenoides	24	0.8
HEMIPTERA		
Metrobates	18	0.6
Ambrysus	6	0.2
TRICHOPTERA		
Protoptila	18	0.6
Cheumatopsyche	438	14.1
Hydropsyche	354	11.4
Ochrotrichia	12	0.4
Oecetis	18	0.6
LEPIDOPTERA		
Petrophila	186	6.0
COLEOPTERA		
Microcylloepus	138	4.5
Stenelmis	108	3.5
DIPTERA		
Simulium	210	6.8
CHIRONOMIDAE		
Tvetenia	12	0.4
Total number of taxon	28	
Total number of organisums	3,096	
Organisums per m^2	2,476	
Hilsenhoff biotic index	6.08	
EPT abundance	2,376	
Number of EPT taxon	16	
EPT per m^2	1,900	

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

ALGAE SAMPLES
SEPTEMBER 23, 2003

Richest targeted habitat sample--gravel, cobble
Sample method--Top rock scrape

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.16	1.13
Adlafia minuscula	0.02	0.17
Adlafia suchlandtii	0.02	0.17
Amphipleura pellucida	0.01	0.09
Amphora inariensis	0.41	2.96
Amphora pediculus	0.20	1.48
Cocconeis pediculus	0.12	0.87
Cocconeis placentula	0.53	3.83
Diatoma moniliformis	0.19	1.39
Diatoma tenuis	0.01	0.09
Epithemia adnata	0.19	1.39
Epithemia sorex	2.42	17.6
Fragilaria vaucheriae	0.91	6.62
Gomphonema minutum	0.02	0.17
Gomphonema olivaceum	0.07	0.52
Navicula cryptotenella	0.18	1.31
Navicula cryptotenelloides	0.91	6.62
Navicula gregaria	0.01	0.09
Navicula minima	0.05	0.35
Navicula perpusilla	0.02	0.17
Navicula pseudanglica	0.01	0.09
Navicula tripunctata	0.02	0.17
Nitzschia acicularis	0.02	0.17
Nitzschia archibaldii	0.02	0.17
Nitzschia dissipata	0.37	2.70
Nitzschia frustulum	0.36	2.61
Nitzschia palea	0.10	0.70
Nitzschia valdestriata	0.08	0.61
Planothidium dubium	0.01	0.09
Reimeria sinuata	0.41	2.96
Rhoicosphenia abbreviata	0.11	0.78
Staurosirella pinnata	0.02	0.17
Synedra ulna	0.01	0.09
CHLOROPHYTA		
Ankistrodesmus sp.	0.17	1.24
CYANOPHYTA		
Amphithrix sp.	34.2	248
Anabaena sp.	1.71	12.4
Calothrix sp.	10.61	77.0
Chroococcus sp.	0.17	1.24
Oscillatoria sp.	32.0	232
Phormidium sp.	9.58	70
RHODOPHYTA		
Audouinella sp.	3.5	25.5
Total algae cells/mm^2		725

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

Organism	Percent of composition	Cell density cells/mm^2
BACILLARIOPHYTA		
Achnanthidium minutissimum	0.37	3.38
Amphipleura pellucida	0.30	2.76
Amphora inariensis	0.40	3.68
Amphora libyca	0.13	1.23
Aneumastus tusculus	0.07	0.61
Asterionella formosa	0.07	0.61
Aulacoseira granulata	0.27	2.45
Biremis circumtexta	0.10	0.92
Caloneis silicula	0.03	0.31
Cocconeis pediculus	0.70	6.44
Cocconeis placentula	4.23	39.0
Cylindrotheca gracilis	0.27	2.45
Diatoma moniliformis	0.07	0.61
Epithemia adnata	0.07	0.61
Epithemia sorex	1.03	9.51
Fragilaria crotonensis	0.23	2.15
Fragilaria vaucheriae	0.73	6.75
Gomphonema minutum	0.13	1.23
Gomphonema olivaceum	0.03	0.31
Gomphonema parvulum	0.07	0.61
Gomphonema pumilum	0.07	0.61
Hantzschia amphioxys	0.07	0.61
Hippodonta hungarica	0.03	0.31
Karayevia clevei	0.17	1.53
Navicula antonii	0.07	0.61
Navicula canalis	0.73	6.75
Navicula cryptotenelloides	0.33	3.07
Navicula decussis	0.07	0.61
Navicula enigmatica	0.13	1.23
Navicula erifuga	0.30	2.76
Navicula germainii	0.37	3.38
Navicula gregaria	0.23	2.15
Navicula pseudanglica	0.23	2.15
Navicula recens	0.07	0.61
Navicula reichardtiana	0.17	1.53
Navicula rostellata	0.07	0.61
Nitzschia acicularis	0.63	5.83
Nitzschia agnita	1.57	14.4
Nitzschia angustatula	0.17	1.53
Nitzschia archibaldii	0.20	1.84
Nitzschia capitellata	0.07	0.61
Nitzschia desertorum	0.07	0.61
Nitzschia dissipata	0.43	3.99
Nitzschia filiformis	0.10	0.92
Nitzschia frustulum	0.67	6.14
Nitzschia gracilis	0.13	1.23
Nitzschia lorenziana	0.07	0.61
Nitzschia palea	3.07	28.2
Nitzschia paleacea	0.03	0.31
Nitzschia pusilla	0.10	0.92
Nitzschia recta	0.03	0.31
Nitzschia reversa	0.03	0.31
Nitzschia sociabilis	0.20	1.84
Nitzschia solita	0.10	0.92
Nitzschia sp.	0.27	2.45
Nitzschia supralitorea	0.20	1.84
Nitzschia valdestriata	0.10	0.92
Nitzschia vermicularis	0.13	1.23
Pinnularia sp.	0.17	1.53
Planothidium dubium	0.13	1.23
Planothidium lanceolatum	0.27	2.45
Reimeria sinuata	0.43	3.99
Rhoicosphenia abbreviata	0.23	2.15
Rhopalodia brebissonii	0.03	0.31
Sellaphora pupula	0.13	1.23
Simonsenia delognei	0.13	1.23
Staurosira construens	0.30	2.76
Staurosirella pinnata	0.07	0.61
Stephanodiscus medius	0.03	0.31
Surirella angusta	0.07	0.61
Surirella linearis	0.07	0.61
Tryblionella apiculata	0.20	1.84
Tryblionella levidensis	0.03	0.31

06307830 TONGUE RIVER BELOW BRANDENBERG BRIDGE, NEAR ASHLAND MT—Continued

ALGAE SAMPLES--CONTINUED
SEPTEMBER 23, 2003

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

Organism	Percent of composition	Cell density cells/mm^2
CYANOPHYTA		
Anabaena sp.	9.09	83.7
Chroococcus sp.	0.45	4.18
Oscillatoria sp.	52.3	481
Spirulina sp.	15.1	139
Total algae cells/mm^2		920

06308400 PUMPKIN CREEK NEAR MILES CITY, MT

LOCATION.--Lat 46°13'42", long 105°41'24" (NAD 27), in SW¼NE¼SW¼ sec.35, T.6 N., R.48 E., Custer County, Hydrologic Unit 10090102, on right bank 12 ft upstream from bridge on U.S.Highway 312, 7.5 mi upstream from mouth, and 16 mi southeast of Miles City.

DRAINAGE AREA.--697 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to November 1985, May 2004 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 2,475.86 ft (NGVD 29). Prior to May 2004, recording gage at same site at different datum.

REMARKS.--Water-discharge records fair. Diversion for irrigation of about 3,600 acres above station. U.S. Geological Survey satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								0.00	0.42	0.00	0.00	0.00
2								0.00	0.20	0.00	0.00	0.00
3								0.00	0.10	0.00	0.00	0.00
4								0.00	0.05	0.00	0.00	0.00
5								0.00	0.02	14	0.00	0.00
6								0.00	0.00	71	0.00	0.00
7								0.00	0.00	21	0.00	0.00
8								0.00	0.00	12	0.00	0.00
9								0.00	0.00	19	0.00	0.00
10								0.00	12	4.3	0.00	0.00
11								0.00	12	2.1	0.00	0.00
12								0.00	22	1.1	0.00	0.00
13								0.00	11	16	0.00	0.00
14								0.00	4.7	8.1	0.00	0.33
15								0.00	1.7	2.9	0.00	0.02
16								0.00	0.78	1.2	0.00	0.56
17								0.00	0.39	0.56	0.00	3.5
18								0.00	0.22	0.27	0.00	2.7
19								0.00	0.13	0.12	0.00	1.3
20								0.00	0.07	0.05	0.00	0.90
21								0.00	0.04	0.01	0.00	1.3
22								0.00	0.03	0.00	0.00	4.4
23								41	0.02	0.00	0.00	1.8
24								88	0.00	0.00	0.00	0.68
25								18	0.00	0.00	0.00	0.29
26								5.5	0.00	0.00	0.00	0.17
27								3.1	0.00	0.00	0.00	0.08
28								1.9	0.00	0.00	0.00	0.12
29								1.3	0.00	0.00	0.00	0.13
30								0.97	0.00	0.00	0.00	0.09
31								0.67	---	0.00	0.00	---
TOTAL								160.44	65.87	173.71	0.00	18.37
MEAN								5.18	2.20	5.60	0.00	0.61
MAX								88	22	71	0.00	4.4
MIN								0.00	0.00	0.00	0.00	0.00
AC-FT								318	131	345	0.00	36

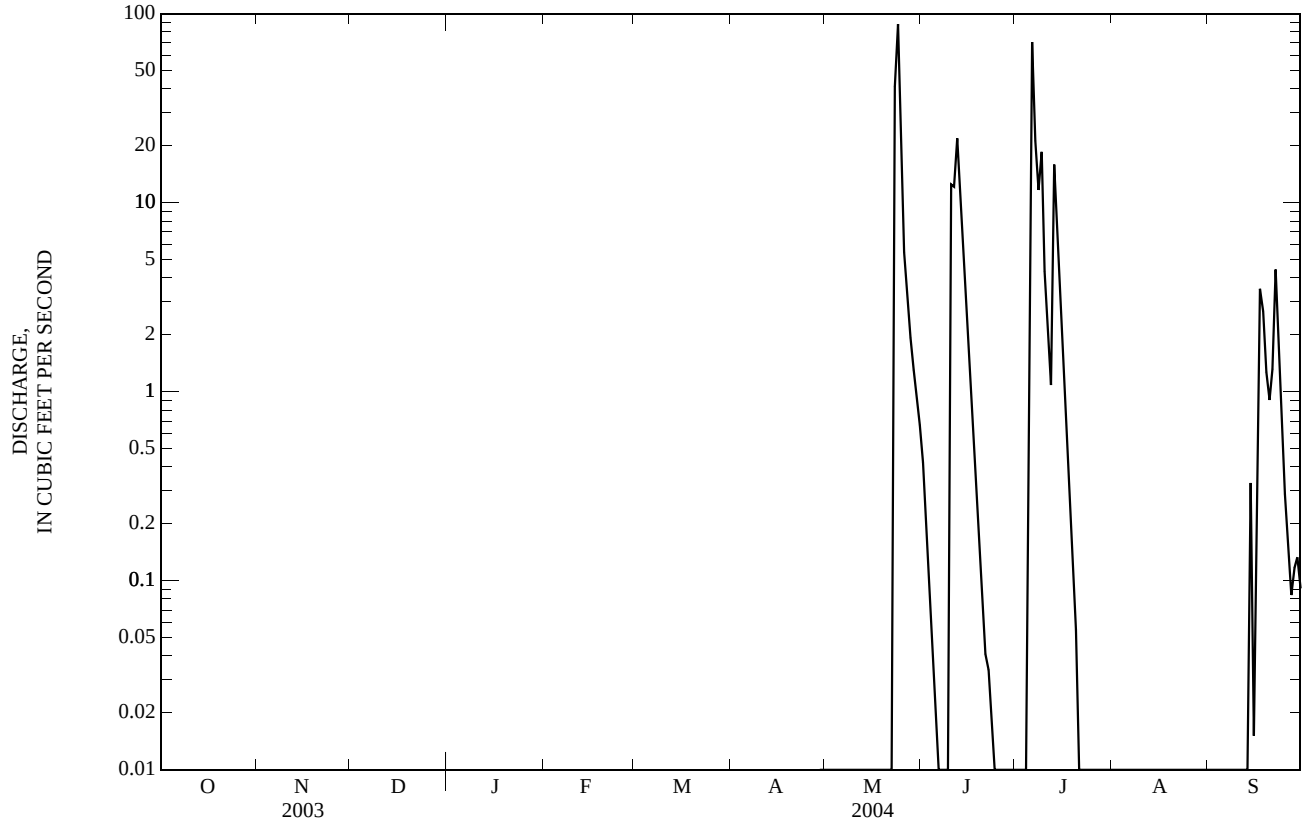
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2004, BY WATER YEAR (WY)*

MEAN	1.35	0.33	0.17	4.66	30.0	53.7	16.6	33.9	15.5	3.93	1.90	6.21
MAX	9.72	2.65	0.74	29.4	134	299	84.0	205	64.2	18.1	16.2	59.8
(WY)	(1983)	(1975)	(1973)	(1983)	(1983)	(1978)	(1979)	(1978)	(1975)	(1978)	(1985)	(1973)
MIN	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1977)	(1977)	(1975)	(1977)	(1978)	(1981)	(1981)	(1980)	(1977)	(1977)	(1974)	(1974)

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1973 - 2004*	
ANNUAL MEAN			14.3	
HIGHEST ANNUAL MEAN			49.5	1978
LOWEST ANNUAL MEAN			0.22	1980
HIGHEST DAILY MEAN	88	May 24	1,980	May 19, 1978
LOWEST DAILY MEAN	0.00	May 1	a0.00	Dec 10, 1972
ANNUAL SEVEN-DAY MINIMUM			0.00	Dec 10, 1972
MAXIMUM PEAK FLOW	333	May 23	2,890	May 6, 1975
MAXIMUM PEAK STAGE	5.41	May 23	b12.27	May 6, 1975
ANNUAL RUNOFF (AC-FT)			10,330	
10 PERCENT EXCEEDS			17	
50 PERCENT EXCEEDS			0.06	
90 PERCENT EXCEEDS			0.00	

*--During period of operation (1972-85, May 2004 to September 2004).
a--No flow at times most years.
b--Datum then in use.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to 1985, March 2004 to September 2004.

PERIOD OF DAILY RECORD.-
SPECIFIC CONDUCTANCE: May 2004 to September 2004.

INSTRUMENTATION.--A specific conductance probe was installed on May 20, 2004.

REMARKS.--No water-quality samples could be collected during eight site visits between February and August due to no flow. The specific conductance record is rated fair to poor for the period of operation. Missing daily specific conductance values for the periods May 21-24, June 5-13, June 23 to July 5, July 21 to Sept. 14, 16-18 and 25-30 are due to no flow or equipment problems.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,350 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 24, 2004; minimum daily, 444 µS/cm at 25.0°C, May 25, 2004.

EXTREMES FOR CURRENT YEAR.
SPECIFIC CONDUCTANCE: Maximum daily, 1350 microsiemens per centimeter (µS/cm) at 25.0°C, Sept. 24; minimum daily, 444 µS/cm at 25.0°C, May 25.

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
MAR													
10...	1700	6.2	703	--	--	8.1	647	7.0	4.5	60	14.9	5.49	4.97
MAY													
24...	1530	121	687	10.3	94	8.7	311	7.5	7.0	14	3.87	1.12	2.79
JUN													
16...	1300	.72	--	--	--	8.2	700	18.0	17.5	44	12.0	3.34	7.53
JUL													
06...	1200	90	698	8.9	100	8.2	797	31.0	16.5	57	15.3	4.56	6.16
13...	1430	16	686	5.3	73	8.1	706	31.5	25.5	47	12.9	3.55	6.63
SEP													
28...	1134	.12	699	10.4	108	8.8	1,730	20.0	13.0	140	33.3	13.8	8.98

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

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

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR													
10...	7	130	81	146	1.91	.3	6.25	153	408	.56	6.83	.012	.732
MAY													
24...	7	56.9	87	64	1.22	.3	3.41	64.3	178	.24	58.3	<.010	1.27
JUN													
16...	9	137	85	175	2.75	.6	11.6	146	430	.59	.84	.146	.866
JUL													
06...	10	179	86	191	3.40	.7	7.31	236	569	.77	137	.022	.398
13...	8	131	84	184	2.76	.6	12.5	144	426	.58	18.4	.091	.213
SEP													
28...	12	323	82	300	5.56	.7	6.69	574	1,150	1.56	.37	E.007	.308

Date	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, water, unfltrd mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Aluminum, water, unfltrd recoverable, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recoverable, ug/L (01007)	Beryllium, water, fltrd, ug/L (01010)	Beryllium, water, unfltrd recoverable, ug/L (01012)	Boron, water, fltrd, ug/L (01020)
MAR													
10...	.018	4.87	E.005	1.14	4	26,700	.9	9	28	415	<.06	2.98	102
MAY													
24...	.015	2.04	.009	5.29	6	42,900	1.0	10	10	1,800	<.06	9.38	67
JUN													
16...	.038	6.54	.036	3.01	6	45,200	2.0	13	34	1,080	<.06	7.71	166
JUL													
06...	.024	5.91	.013	1.52	7	40,700	1.7	13	38	1,240	<.06	8.17	203
13...	.026	6.86	.017	1.43	6	58,100	1.8	14	32	1,330	<.06	9.06	187
SEP													
28...	.021	1.52	<.006	.157	5	1,280	1.7	E1	93	111	<.06	.09	313

Date	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, unfltrd recoverable, ug/L (71900)
MAR													
10...	<.04	.67	35	7.1	58.5	23	33,500	.08	53.8	9.0	9.3	474	.16
MAY													
24...	E.03	2.47	69	4.6	136	25	60,400	.11	139	4.0	3.4	2,180	.48
JUN													
16...	E.02	1.72	76	14.3	119	29	58,000	.23	131	10.7	.4	1,150	.40
JUL													
06...	E.02	2.04	64	10.2	146	20	56,900	.11	155	12.5	1.4	1,550	.46
13...	<.04	2.25	102	11.0	157	21	85,100	.08	180	11.3	.3	1,870	.50
SEP													
28...	E.03	.04	1	16.8	15.3	16	960	.16	2.79	20.9	1.3	41	--

E--Estimated.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

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

Date	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover-able, ug/L (01092)	Sus-pended sedi-ment, percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
MAR										
10...	5.47	57.9	1.6	1.9	252	.8	188	99	3,030	51
MAY										
24...	3.83	146	1.3	2.5	63.6	1.0	399	99	10,500	3,410
JUN										
16...	10.8	133	2.9	2.7	231	2.2	393	99	8,310	16
JUL										
06...	10.1	147	2.4	3.1	320	1.8	400	99	9,580	2,310
13...	9.10	173	1.9	3.6	257	3.1	513	99	10,100	435
SEP										
28...	9.28	11.9	2.7	2.7	706	2.4	8	99	57	.02

E--Estimated.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		MAY			JUNE			JULY			AUGUST	
1				813	769	789	---	---	---	---	---	---
2				826	812	820	---	---	---	---	---	---
3				860	823	853	---	---	---	---	---	---
4				888	858	877	---	---	---	---	---	---
5				---	---	---	---	---	---	---	---	---
6				---	---	---	822	532	621	---	---	---
7				---	---	---	837	522	623	---	---	---
8				---	---	---	536	503	520	---	---	---
9				---	---	---	647	504	588	---	---	---
10				---	---	---	731	647	696	---	---	---
11				---	---	---	739	722	728	---	---	---
12				---	---	---	728	715	722	---	---	---
13				---	---	---	730	696	714	---	---	---
14				699	634	652	799	720	766	---	---	---
15				745	674	724	749	725	742	---	---	---
16				729	700	714	790	718	749	---	---	---
17				733	706	719	869	790	833	---	---	---
18				760	720	743	921	867	889	---	---	---
19				782	760	772	945	920	933	---	---	---
20				822	782	800	979	943	960	---	---	---
21				853	821	838	---	---	---	---	---	---
22				870	853	862	---	---	---	---	---	---
23				---	---	---	---	---	---	---	---	---
24	---	---	*311	---	---	---	---	---	---	---	---	---
25	851	444	803	---	---	---	---	---	---	---	---	---
26	832	517	685	---	---	---	---	---	---	---	---	---
27	603	581	590	---	---	---	---	---	---	---	---	---
28	644	603	622	---	---	---	---	---	---	---	---	---
29	682	644	661	---	---	---	---	---	---	---	---	---
30	723	682	700	---	---	---	---	---	---	---	---	---
31	769	708	745	---	---	---	---	---	---	---	---	---
MONTH	851	444	640	931	173	750	979	503	739	---	---	---

*--Instantaneous value from USGS sample.

06308400 PUMPKIN CREEK NEAR MILES CITY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS--CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN
	SEPTEMBER		
1	---	---	---
2	---	---	---
3	---	---	---
4	---	---	---
5	---	---	---
6	---	---	---
7	---	---	---
8	---	---	---
9	---	---	---
10	---	---	---
11	---	---	---
12	---	---	---
13	---	---	---
14	---	---	---
15	---	---	---
16	---	---	---
17	---	---	---
18	---	---	---
19	1,300	1,160	1,230
20	1,160	1,070	1,110
21	1,070	1,020	1,040
22	1,020	1,000	1,010
23	1,130	1,020	1,070
24	1,350	1,130	1,220
25	---	---	---
26	---	---	---
27	---	---	---
28	---	---	*1,730
29	---	---	---
30	---	---	---
31	---	---	---
MONTH	1,350	1,000	1,200

*--Instantaneous value from USGS sample.

06308500 TONGUE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°23'05", long 105°50'41" (NAD 27), in SE¼SE¼SE¼ sec. 4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi^2. Area at site used prior to Oct. 4, 1995, 5,379 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to current year. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. April 1946 to Oct. 4, 1995, at site 2.5 mi upstream from present site. Flows at present site are equivalent with flows at site operated from 1946. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft (NGVD 29). April 1938 to April 1942, nonrecording gage at site 8 mi upstream from present site at different elevation. April 1946 to Sept. 30, 1963, at elevation 1.00 ft higher than present site. Oct. 4, 1995, gage was moved 2.5 miles downstream.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulation by Tongue River Reservoir (station 0630700) with capacity of 79,100 acre-feet, and many small reservoirs in Wyoming with combined capacity about 15,000 acre-ft. Diversions for irrigation of about 100,800 acres upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	e70	e110	e90	e70	e100	221	11	112	53	50	17
2	63	e70	e120	e80	e70	e90	200	11	97	32	49	16
3	53	e60	e120	e70	e70	e90	188	8.5	91	21	55	18
4	48	e50	e120	e60	e70	e100	208	8.7	65	24	36	18
5	44	e40	e120	e50	e70	e100	226	8.9	39	34	33	18
6	39	e50	e120	e60	e70	e110	227	8.3	23	213	27	17
7	37	e60	e120	e70	e70	e150	221	8.3	19	120	25	15
8	39	e60	e120	e80	e80	e200	208	7.6	16	76	49	16
9	43	e70	e110	e90	e70	e250	180	9.1	16	49	54	15
10	43	e80	e100	e100	e70	e500	162	10	15	36	39	14
11	48	e80	e110	e100	e70	e300	162	12	122	23	29	14
12	51	e80	e110	e100	e70	e250	153	10	246	19	27	15
13	46	e80	e110	e100	e70	225	152	9.7	120	18	27	19
14	43	e80	e100	e90	e65	176	134	8.4	106	24	26	40
15	47	e80	e90	e90	e60	168	117	8.0	108	26	23	54
16	54	e80	e90	e90	e70	166	113	9.5	88	22	20	49
17	69	e80	e100	e100	e80	161	109	13	90	16	26	49
18	71	e90	e100	e100	e90	166	113	14	83	13	29	48
19	71	e90	e100	e100	e90	170	119	20	92	13	29	51
20	71	e70	e100	e100	e100	151	120	40	103	14	23	56
21	74	e50	e100	e100	e100	138	130	47	103	16	21	57
22	72	e30	e100	e100	e90	143	135	50	97	19	21	72
23	69	e35	e100	e110	e90	176	125	71	99	20	21	80
24	60	e40	e90	e100	e90	207	109	298	98	16	23	79
25	51	e50	e100	e90	e100	210	89	232	53	13	27	79
26	69	e60	e100	e70	e100	213	64	165	33	14	26	74
27	80	e70	e110	e60	e100	207	18	140	21	35	24	74
28	e90	e80	e110	e60	e100	199	10	109	18	50	22	75
29	e100	e90	e100	e60	e100	193	9.4	92	21	49	21	77
30	e80	e100	e100	e60	---	197	11	90	34	50	19	75
31	e70	---	e100	e70	---	216	---	97	---	52	18	---
TOTAL	1,853	2,025	3,280	2,600	2,345	5,722	4,033.4	1,627.0	2,228	1,180	919	1,301
MEAN	59.8	67.5	106	83.9	80.9	185	134	52.5	74.3	38.1	29.6	43.4
MAX	100	100	120	110	100	500	227	298	246	213	55	80
MIN	37	30	90	50	60	90	9.4	7.6	15	13	18	14
AC-FT	3,680	4,020	6,510	5,160	4,650	11,350	8,000	3,230	4,420	2,340	1,820	2,580

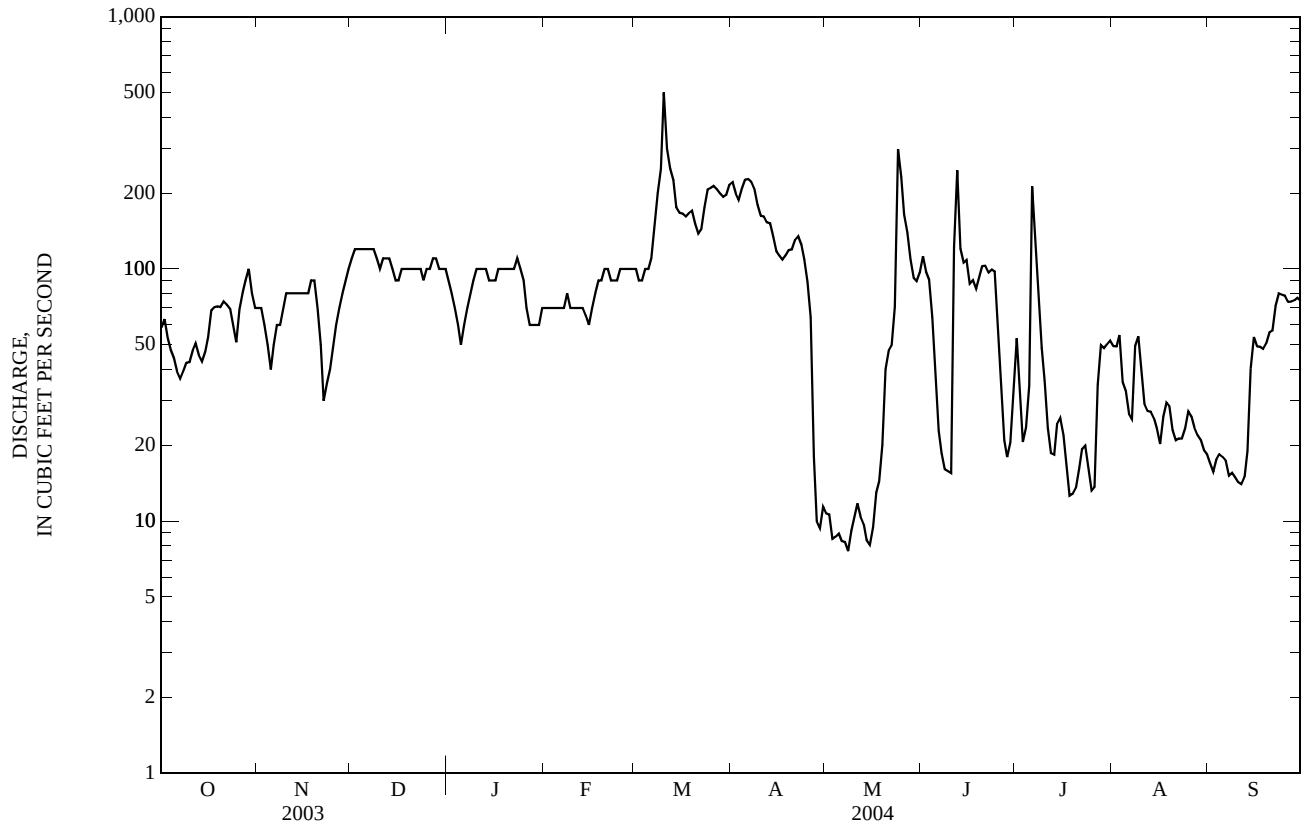
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)*

MEAN	241	251	189	193	275	528	432	677	1,244	457	178	196
MAX	694	585	423	529	1,794	1,783	1,693	2,983	3,825	2,207	700	599
(WY)	(1972)	(1942)	(1950)	(1999)	(1971)	(1971)	(1965)	(1978)	(1978)	(1975)	(1975)	(1968)
MIN	10.3	60.9	68.0	76.9	74.5	74.5	12.5	29.2	41.9	12.6	6.08	2.40
(WY)	(1961)	(1989)	(1990)	(2002)	(2003)	(2002)	(1961)	(1961)	(2002)	(1960)	(1949)	(1938)

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004*	
ANNUAL TOTAL	95,263		29,113.4			
ANNUAL MEAN	261		79.5		402	
HIGHEST ANNUAL MEAN					986	1978
LOWEST ANNUAL MEAN					57.2	1961
HIGHEST DAILY MEAN	4,000	Mar 15	500	Mar 10	9,290	Jun 15, 1962
LOWEST DAILY MEAN	30	Nov 22	7.6	May 8	0.00	Jul 9, 1940
ANNUAL SEVEN-DAY MINIMUM	42	Oct 4	8.5	May 3	0.00	Jul 9, 1940
MAXIMUM PEAK FLOW			unknown		b13,300	Jun 15, 1962
MAXIMUM PEAK STAGE			a5.07	Mar 10	c13.27	Mar 19, 1960
INSTANTANEOUS LOW FLOW					0.00	Jul 9, 1940
ANNUAL RUNOFF (AC-FT)	189,000		57,750		291,000	
10 PERCENT EXCEEDS	711		161		900	
50 PERCENT EXCEEDS	110		70		220	
90 PERCENT EXCEEDS	69		16		65	

*--During period of record (April 1938 to April 1942, April 1946 to current year.
a--About, backwater from ice.
b--At previous site and elevation.
e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946 to September 1994, October 1977 to December 1985, May 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to September 1981, April 29, 2004 to September 30, 2004.
WATER TEMPERATURE: Sesonal records, April 2000 to September 2003.
SUSPENDED-SEDIMENT DISCHARGE: October 1977 to December 1985.

INSTRUMENTATION.--A specific conductance probe was installed on April 28, 2004.

REMARKS--Missing daily specific conductance values for June 9 to 16 due to equipment error. The Sept. 16 water-quality sample was lost in transit to the lab.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,520 microsiemens per centimeter (µS/cm) at 25.0°C, May 24, 1981; minimum daily, 215 µS/cm at 25.0°C, Feb. 16, 1971.
WATER TEMPERATURE (seasonal records): Maximum, 37.0°C, Aug. 22, 2001; minimum 0.0°C, Apr. 5, 2002.
SEDIMENT CONCENTRATION: Maximum daily mean, 14,200 mg/L, Aug. 3, 1985; minimum daily mean, 3 mg/L, Dec. 20, 1983.
SEDIMENT LOAD: Maximum daily, 84,400 tons May 18, 1978; minimum daily, 0.13 tons May 5, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,360 µS/cm at 25.0°C, May 16; minimum daily, 508 µS/cm at 25.0°C, May 24.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

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

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water, unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
JAN										
23...	0745	E110	695	10.3	78	8.5	863	3.0	.0	360
FEB										
04...	1300	E70	697	10.3	77	8.4	1,030	-14.0	.0	400
18...	1245	E90	696	9.7	73	8.3	920	6.5	.0	370
MAR										
11...	0930	E300	708	14.4	106	7.9	683	2.5	.0	250
23...	1300	179	692	11.8	116	8.0	938	21.0	10.0	360
APR										
14...	1530	133	691	10.1	111	8.6	850	22.5	15.0	320
28...	1000	10	689	9.4	100	8.4	1,060	9.5	13.5	390
MAY										
13...	1030	10	706	12.0	107	8.4	1,280	9.0	7.0	380
25...	1230	218	689	10.0	102	8.3	585	16.0	11.5	170
JUN										
09...	0930	16	700	9.0	98	8.7	951	18.0	15.0	400
23...	0745	101	627	7.0	91	8.5	807	14.0	18.0	290
JUL										
14...	1000	20	690	8.3	109	8.2	1,120	31.5	23.5	320
26...	1100	15	698	7.1	92	8.3	1,290	32.5	23.0	370
AUG										
18...	1415	29	703	7.6	97	8.1	1,180	29.0	23.0	350
23...	1055	21	690	8.2	98	8.4	1,150	27.5	19.0	360
SEP										
16...	0830	49	696	8.6	91	8.2	962	14.0	13.5	--
28...	1330	74	700	10.3	112	8.5	922	22.5	15.5	310

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
JAN											
23...	69.8	44.7	4.41	1	64.1	28	215	5.59	.4	6.19	201
FEB											
04...	79.6	49.3	4.98	2	77.9	29	245	6.55	.4	7.39	241
18...	72.5	45.8	4.52	2	68.2	28	229	5.78	.3	5.58	207
MAR											
11...	49.2	31.0	3.63	2	56.9	33	200	4.32	.3	3.86	162
23...	65.6	47.0	5.04	2	81.9	33	238	6.02	.4	2.48	239
APR											
14...	59.1	42.4	4.61	2	68.2	31	220	5.93	.3	3.27	206
28...	73.5	51.0	6.40	2	106	36	277	6.91	.3	6.20	273
MAY											
13...	67.7	52.0	7.66	4	160	47	326	7.93	.4	8.82	340
25...	36.0	18.4	4.94	2	61.8	44	160	3.51	.3	4.09	133
JUN											
09...	72.9	53.2	7.65	3	127	40	323	7.21	.4	10.6	303
23...	52.1	39.2	4.54	2	66.3	33	236	5.61	.3	3.70	195
JUL											
14...	62.9	39.5	7.31	3	127	46	314	6.49	.4	9.80	277
26...	65.9	50.7	8.37	3	142	45	337	7.75	.4	8.42	344
AUG											
18...	59.3	48.7	7.38	3	124	43	291	6.47	.4	8.99	296
23...	61.7	50.8	7.43	3	129	43	322	6.62	.4	9.15	303
SEP											
16...	--	--	--	--	--	--	--	--	--	--	--
28...	51.0	43.8	5.37	2	80.3	36	251	5.58	.4	5.92	241

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

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

Date	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	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)
JAN						
23...	525	.71	E156	78	30	E8.9
FEB						
04...	615	.84	E116	76	24	E4.5
18...	547	.74	E133	88	14	E3.4
MAR						
11...	432	.59	E350	99	175	E142
23...	590	.80	285	87	65	31
APR						
14...	522	.71	188	90	47	17
28...	691	.94	18.7	87	32	.86
MAY						
13...	842	1.14	22.7	92	37	1.0
25...	361	.49	212	99	4,560	2,680
JUN						
09...	777	1.06	33.6	78	103	4.4
23...	509	.69	139	99	88	24
JUL						
14...	718	.98	38.8	96	94	5.1
26...	831	1.13	33.7	98	87	3.5
AUG						
18...	725	.99	56.8	91	27	2.1
23...	763	1.04	43.3	92	29	1.6
SEP						
16...	--	--	--	99	241	32
28...	584	.79	117	99	197	39

Date	Time	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro-gen, wat unfltrd mg/L (62855)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Alum-inum, water, fltrd, ug/L (01106)	Alum-inum, water, unfltrd recover-able, ug/L (01105)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)
FEB													
04...	1300	.010	.029	<.002	.21	<.006	.006	<2	37	.5	<2	70	71
MAR													
11...	0930	E.007	.041	E.001	.49	<.006	.11	E2	3,150	.4	2	44	75
APR													
14...	1530	<.010	<.016	<.002	.28	<.006	.021	2	210	.6	E1	60	68
28...	1000	<.010	<.016	E.001	.28	<.006	.019	2	129	.7	<2	76	74
MAY													
13...	1030	<.010	.020	.002	.38	<.006	.020	<2	35	.7	<2	70	64
25...	1230	.031	.520	.011	.91	.007	2.56	3	26,400	.7	8	62	819
JUN													
09...	0930	<.010	.016	.002	.30	E.003	.040	<2	212	.8	E1	81	81
23...	0745	<.010	<.016	<.002	.37	<.006	.053	2	699	.6	<2	63	74
JUL													
26...	1100	<.010	E.012	E.001	.40	<.006	.028	2	280	.9	<2	86	89
AUG													
23...	1055	E.007	.132	.004	.52	<.006	.025	E1	228	1.0	E1	63	65

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

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

Date	Beryll-ium, water, fltrd, ug/L (01010)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Lithium water, fltrd, ug/L (01130)
FEB													
04...	<.06	<.06	114	.06	<.04	3	2.3	4.6	10	90	E.05	.06	26.4
MAR													
11...	<.06	.22	74	<.04	.06	2	1.7	5.9	<6	2,770	<.08	3.33	17.2
APR													
14...	<.06	E.03	107	<.04	<.04	<1	2.0	2.2	<6	370	<.08	.37	23.9
28...	<.06	<.06	163	<.04	<.04	<1	3.0	2.6	E5	210	<.08	.25	28.4
MAY													
13...	<.06	<.06	225	<.04	<.04	6	3.1	3.1	8	100	<.08	.07	32.0
25...	<.06	4.56	89	<.04	1.21	51	3.2	79.3	6	46,900	.10	79.8	15.5
JUN													
09...	<.06	<.06	199	<.04	<.04	<1	2.7	4.2	<6	340	<.08	.40	33.5
23...	<.06	E.06	108	<.04	E.03	1	2.8	3.8	<6	1,080	<.08	1.26	20.7
JUL													
26...	<.06	<.06	241	<.04	E.02	<1	3.7	6.1	<6	330	<.08	.45	39.3
AUG													
23...	<.06	<.06	220	<.04	E.02	<1	2.7	3.8	E4	310	<.08	.45	33.1

Date	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, fltrd, ug/L (01145)	Selen-ium, water, unfltrd ug/L (01147)	Stront-ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)
FEB										
04...	10.3	13	<.02	2.35	3.66	.5	.4	738	2.6	3
MAR										
11...	4.3	93	E.02	2.58	6.00	E.3	.5	481	.7	14
APR										
14...	5.2	70	<.02	1.81	2.74	.4	.5	665	1.2	3
28...	46.7	98	<.02	2.67	2.13	.5	E.3	821	2.1	2
MAY										
13...	49.1	106	<.02	1.72	3.41	.5	.6	901	2.0	E1
25...	4.5	1,180	--	3.52	85.0	.9	1.3	523	.9	247
JUN										
09...	25.6	88	<.02	2.46	4.18	.8	.5	951	1.4	3
23...	5.2	66	<.02	2.22	3.40	E.4	.5	603	1.7	7
JUL										
26...	13.4	35	<.02	4.02	4.70	.8	.9	1,010	1.5	5
AUG										
23...	34.2	58	<.02	2.59	4.09	.7	1.0	930	1.2	3

E--Estimated.

06308500 TONGUE RIVER AT MILES CITY, MT—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY			JUNE			JULY	
1				1,080	1,060	1,070	877	867	871	911	887	897
2				1,110	1,070	1,080	883	866	873	1,080	888	944
3				1,120	1,100	1,110	886	868	878	1,140	1,080	1,120
4				1,140	1,120	1,130	910	886	893	1,130	1,110	1,120
5				1,140	1,100	1,120	972	910	936	1,110	1,020	1,080
6				1,150	1,100	1,120	1,060	972	1,010	1,020	651	778
7				1,140	1,110	1,130	1,130	1,060	1,100	768	601	674
8				1,190	1,120	1,160	1,170	1,130	1,150	829	768	807
9				1,210	1,160	1,190	---	---	---	891	815	857
10				1,200	1,180	1,190	---	---	---	922	890	905
11				1,200	1,170	1,190	---	---	---	946	910	924
12				1,200	1,180	1,190	---	---	---	1,070	946	994
13				1,310	1,180	1,250	---	---	---	1,140	1,040	1,090
14				1,320	1,270	1,300	---	---	---	1,170	1,110	1,140
15				1,340	1,320	1,330	---	---	---	1,140	1,120	1,130
16				1,360	1,330	1,350	---	---	---	1,140	1,080	1,100
17				1,330	1,300	1,320	869	845	852	1,170	1,120	1,150
18				1,330	1,300	1,310	853	842	846	1,230	1,160	1,210
19				1,300	1,270	1,290	854	840	846	1,290	1,230	1,260
20				1,270	1,030	1,170	840	824	831	1,280	1,250	1,260
21				1,030	901	953	836	819	824	1,290	1,240	1,270
22				905	888	898	826	820	823	1,280	1,230	1,260
23				888	824	860	827	811	818	1,270	1,180	1,220
24				883	508	699	825	809	814	1,180	1,130	1,160
25				743	589	651	918	817	854	1,220	1,170	1,200
26				805	687	770	974	918	947	1,320	1,210	1,280
27				816	799	806	1,040	973	1,000	1,320	1,210	1,290
28				837	813	822	1,110	1,040	1,080	1,210	905	982
29	1,040	998	1,030	857	837	850	1,140	1,100	1,120	912	895	904
30	1,060	1,040	1,060	866	854	859	1,130	911	1,090	914	887	905
31	---	---	---	872	865	869	---	---	---	902	864	882
MONTH	1,060	998	1,040	1,360	508	1,070	1,170	809	930	1,320	601	1,060
		AUGUST			SEPTEMBER							
1	900	874	891	1,290	1,220	1,270						
2	911	894	904	1,270	1,260	1,270						
3	912	895	902	1,270	1,250	1,260						
4	957	905	930	1,260	1,230	1,250						
5	1,020	957	994	1,270	1,230	1,250						
6	1,060	1,020	1,040	1,250	1,210	1,240						
7	1,080	1,040	1,060	1,260	1,230	1,250						
8	1,110	972	1,090	1,290	1,250	1,270						
9	972	863	884	1,310	1,260	1,280						
10	940	888	916	1,330	1,300	1,320						
11	1,000	940	969	1,340	1,300	1,320						
12	1,040	1,000	1,020	1,340	1,300	1,320						
13	1,060	1,040	1,050	1,320	1,260	1,290						
14	1,070	1,050	1,060	1,290	1,160	1,240						
15	1,090	1,060	1,080	1,180	968	1,020						
16	1,120	1,080	1,110	990	970	978						
17	1,140	1,080	1,110	988	964	977						
18	1,160	1,100	1,120	999	988	992						
19	1,130	1,100	1,120	989	967	980						
20	1,140	1,100	1,120	1,040	970	1,010						
21	1,160	1,140	1,160	1,010	987	996						
22	1,190	1,160	1,180	987	912	951						
23	1,200	1,170	1,190	931	908	916						
24	1,180	1,140	1,160	939	920	931						
25	1,180	1,140	1,160	943	933	938						
26	1,170	1,110	1,150	943	936	939						
27	1,120	1,100	1,110	944	940	942						
28	1,200	1,120	1,170	948	941	945						
29	1,200	1,120	1,160	946	937	942						
30	1,200	1,150	1,180	951	942	946						
31	1,250	1,170	1,210	---	---	---						
MONTH	1,250	863	1,070	1,340	908	1,110						

06309000 YELLOWSTONE RIVER AT MILES CITY, MT

LOCATION.--Lat 46°25'18", long 105°51'38" (NAD 27), in NE¼SW¼NW¼ sec.28, T.8 N., R.47 E., Custer County, Hydrologic Unit 10100001, on left bank at upstream side of bridge on State Highway 22 at Miles City, 0.8 mi downstream from Tongue River, and at river mile 184.2.
DRAINAGE AREA.--48,253 mi^2.
PERIOD OF RECORD.--September 1922 to September 1923, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.
REVISED RECORDS.--WSP 1729: Drainage area.
GAGE.--Water-stage recorder. Elevation of gage is 2,333.3 ft (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to May 6, 1929, nonrecording gages .2 mi downstream at different elevations. May 6, 1929, to Sept. 30, 1931, nonrecording gage, and Oct. 1, 1931, to Nov. 10, 1937, water-stage recorder 300 ft upstream from present site at same elevation. Nov. 11, 1937, to Sept. 30, 1946, water-stage recorder 1.2 mi downstream at different elevation. Oct. 1, 1946, to Mar. 15, 1979, water-stage recorder at site 300 ft upstream at present elevation. Mar. 16, 1979, to Sept. 21, 1979, nonrecording gage at present site and elevation. Sept. 22, 1979, recording gage established at same site and elevation.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation by reservoirs on tributary streams. Diversions for irrigation of about 1,100,000 acres upstream from station (does not include flood irrigation). Several observations of water temperature and specific conductance were obtained during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,190	4,600	e4,200	e2,600	e3,800	e4,600	5,390	3,970	11,300	15,400	5,990	4,650
2	3,300	4,600	e4,500	e2,500	e3,800	e4,700	5,010	5,170	10,600	15,600	5,850	4,120
3	3,380	4,410	e4,500	e2,300	e3,800	e4,700	5,010	4,640	9,590	16,400	5,620	3,750
4	3,390	4,160	e4,500	e2,100	e4,200	e4,800	5,420	3,940	8,730	15,300	5,340	3,890
5	3,360	4,150	e4,500	e2,000	e4,200	e4,800	5,920	3,680	8,560	14,900	5,160	4,180
6	3,340	4,040	e4,500	e1,900	e4,200	e4,900	6,200	3,700	9,330	14,700	5,350	4,480
7	3,480	3,930	e4,400	e1,900	e4,200	e5,000	5,930	5,620	12,200	16,400	5,530	4,620
8	3,520	4,140	e4,400	e1,900	e4,300	e5,200	5,930	8,590	16,900	15,900	5,220	4,580
9	3,500	3,790	e4,400	e2,100	e4,300	e5,400	6,220	10,800	20,400	14,500	4,830	4,430
10	3,320	4,120	e4,600	e2,300	e4,300	e5,200	6,450	11,100	20,600	14,100	4,580	4,350
11	3,330	4,420	e4,700	e3,400	e4,300	5,480	6,640	11,000	21,300	13,500	4,390	4,280
12	3,480	4,360	e4,700	e4,600	e4,300	5,660	7,050	10,300	28,900	12,300	4,040	4,170
13	3,560	4,550	e4,700	e4,700	e4,200	5,690	7,020	9,450	30,300	11,400	3,740	4,040
14	3,710	4,560	4,270	e4,700	e3,900	5,180	6,390	9,500	25,800	10,900	3,570	4,040
15	3,690	4,400	e4,500	e4,800	e3,700	5,070	6,210	8,680	22,100	10,100	3,360	4,320
16	3,820	4,430	e4,600	e4,800	e3,800	5,010	6,030	7,480	18,900	9,430	3,170	4,480
17	4,120	4,480	e4,700	e4,800	e4,000	4,850	6,240	6,760	17,100	9,030	3,070	4,560
18	4,130	4,630	e4,800	e4,800	e4,200	4,940	6,550	6,230	16,300	8,930	2,940	5,070
19	4,000	4,920	e4,800	e4,800	e4,400	5,080	6,450	5,980	15,600	8,570	2,780	5,180
20	3,980	4,890	4,720	e4,800	e4,500	4,810	5,990	5,990	14,700	8,210	2,710	5,020
21	4,310	4,810	4,890	e4,800	e4,500	4,760	5,670	5,950	14,100	7,730	2,850	5,310
22	4,670	4,950	4,900	e4,900	e4,500	4,830	5,570	6,330	13,600	7,950	3,060	5,600
23	4,410	4,920	4,950	e4,900	e4,500	5,020	5,470	7,000	13,400	8,190	3,110	5,700
24	4,130	4,410	5,110	e4,900	e4,500	5,340	4,960	8,140	13,100	7,860	3,050	6,090
25	3,850	4,060	4,670	e4,900	e4,500	5,220	4,500	9,160	13,200	7,880	2,970	6,100
26	4,240	4,140	4,800	e4,900	e4,500	5,150	4,250	10,100	14,500	7,860	2,900	5,910
27	4,340	3,960	4,780	e4,800	e4,500	5,270	4,240	9,630	16,100	7,270	2,910	5,640
28	4,350	e3,900	4,030	e4,800	e4,500	5,380	3,980	8,790	17,200	6,710	3,410	5,780
29	4,670	e4,100	e4,000	e4,600	e4,500	5,470	3,640	8,160	17,300	6,330	3,950	5,910
30	4,440	e4,200	e3,500	e4,400	---	5,520	3,600	7,910	16,400	6,340	5,150	5,660
31	4,550	---	e3,000	e4,000	---	5,630	---	9,240	---	6,130	4,950	---
TOTAL	119,560	131,030	139,620	119,700	122,900	158,660	167,930	232,990	488,110	335,820	125,550	145,910
MEAN	3,857	4,368	4,504	3,861	4,238	5,118	5,598	7,516	16,270	10,830	4,050	4,864
MAX	4,670	4,950	5,110	4,900	4,500	5,690	7,050	11,100	30,300	16,400	5,990	6,100
MIN	3,190	3,790	3,000	1,900	3,700	4,600	3,600	3,680	8,560	6,130	2,710	3,750
AC-FT	237,100	259,900	276,900	237,400	243,800	314,700	333,100	462,100	968,200	666,100	249,000	289,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2004, BY WATER YEAR (WY)*

MEAN	7,654	7,062	5,711	5,272	6,167	8,228	8,193	17,130	34,460	19,980	8,067	7,133
MAX	12,970	10,850	9,342	8,897	16,160	18,560	15,210	29,100	61,860	46,310	16,540	13,710
(WY)	(1972)	(1973)	(1983)	(1968)	(1971)	(1929)	(1943)	(1978)	(1997)	(1967)	(1997)	(1941)
MIN	3,857	3,976	2,921	2,034	2,344	3,027	2,729	7,334	13,030	3,988	2,615	2,964
(WY)	(2004)	(1932)	(1933)	(1937)	(1932)	(2002)	(1961)	(1961)	(1934)	(1934)	(1961)	(1934)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1922 - 2004*	
ANNUAL TOTAL	2,808,560		2,287,780			
ANNUAL MEAN	7,695		6,251		11,260	
HIGHEST ANNUAL MEAN					17,470	1997
LOWEST ANNUAL MEAN					6,141	1934
HIGHEST DAILY MEAN	50,900	Jun 3	30,300	Jun 13	92,400	May 30, 1923
LOWEST DAILY MEAN	2,420	Mar 10	1,900	Jan 6	996	Dec 14, 1932
ANNUAL SEVEN-DAY MINIMUM	2,830	Aug 25	2,030	Jan 3	1,220	Dec 12, 1932
MAXIMUM PEAK FLOW			a32,200	Jun 12	c102,000	May 22, 1978
MAXIMUM PEAK STAGE			b8.36	Feb 2	b21.70	Mar 20, 1944
INSTANTANEOUS LOW FLOW					1,800	Mar 7, 1995
ANNUAL RUNOFF (AC-FT)	5,571,000		4,538,000		8,156,000	
10 PERCENT EXCEEDS	15,700		11,600		25,100	
50 PERCENT EXCEEDS	4,420		4,800		7,460	
90 PERCENT EXCEEDS	3,240		3,490		4,030	

06309000 YELLOWSTONE RIVER AT MILES CITY, MT—Continued

SUMMARY STATISTICS	WATER YEARS 1922 - 1961**		WATER YEARS 1967 - 2004***	
ANNUAL MEAN	10,710		11,640	
HIGHEST ANNUAL MEAN	16,600	1943	17,470	1997
LOWEST ANNUAL MEAN	6,141	1934	6,176	2001
HIGHEST DAILY MEAN	92,400	May 30, 1923	82,300	Jun 15, 1997
LOWEST DAILY MEAN	996	Dec 14, 1932	1,640	Nov 25, 1977
ANNUAL SEVEN-DAY MINIMUM	1,220	Dec 12,1932	2,030	Jan 3, 2004
MAXIMUM PEAK FLOW	96,300	Jun 19, 1944	c102,000	May 22, 1978
MAXIMUM PEAK STAGE	b21.70	Mar 20, 1944	b20.78	Mar 15, 1979
ANNUAL RUNOFF (AC-FT)	7,756,000		8,431,000	
10 PERCENT EXCEEDS	25,000		25,000	
50 PERCENT EXCEEDS	6,620		8,130	
90 PERCENT EXCEEDS	3,500		4,600	

*--During period of operation (1922-23, 1928 to current year).
**--Prior to construction of Yellowtail Dam, during period of operation (1922-23, 1928-61).
***--After completion of Yellowtail Dam.
a--Gage height, 8.14 ft.
b--Backwater from ice jam.
c--Gage height, 16.50 ft.
e--Estimated.