05011000 Belly River near Mountain View, Alberta
(International gaging station)
Site Number 1

LOCATION.--Lat 49°06'00", long 113°41'48" (NAD 27), in NE¼ sec.5, T.2, R.28 W., fourth meridian, in Alberta, Hydrologic Unit 10010001, on right bank 2 mi downstream from intake of Mountain View Irrigation District Canal, 5 mi southwest of Mountain View, and 7 mi north of international boundary.
DRAINAGE AREA.--121 mi^2.
PERIOD OF RECORD.--November 1911 to September 1978 (discontinued). Monthly discharge only for some periods, published in WSP 1308.
GAGE.--Water-stage recorder. Altitude of gage is 4,342.88 ft (datum unknown; Greg MacCulloch, Environment Canada, written commun., 2004). November 1911, to Apr. 6, 1949, nonrecording gage at site 20 ft upstream at same datum. Apr. 7, 1949, to June 19, 1975, water-stage recorder at present site at datum 2.02 ft higher.
REMARKS.--Natural flow of stream affected by diversion to Mountain View Irrigation District Canal 2 mi upstream from station.

Magnitude and probability of annual low flow
based on 66 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	31	21	17	14	11	9.0
3	33	23	19	16	13	11
7	35	26	22	19	16	14
14	40	31	27	24	20	18
30	47	38	33	29	25	22
60	60	47	41	36	31	27
90	69	52	45	40	34	31
120	81	61	53	47	41	37
183	110	82	72	64	56	52

Magnitude and probability of seasonal low flow from
March-June based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	43	31	25	21	17	14
3	45	33	27	23	19	16
7	47	35	29	25	21	18
14	50	38	33	29	26	24
30	59	45	39	36	33	31

Magnitude and probability of seasonal low flow from
November-February based on 66 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	36	24	19	15	12	9.7
3	38	27	21	17	14	12
7	41	30	25	21	17	15
14	45	34	29	26	22	20
30	52	40	35	31	27	24

Duration of daily mean flows based on 66 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
26	32	41	50	64	83	107	141
40%	30%	20%	15%	10%	5%	2%	1%
196	303	497	664	892	1,230	1,620	1,970

Magnitude and probability of annual high flow
based on 66 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,720	2,710	3,630	5,200	6,730	8,650
3	1,670	2,490	3,180	4,220	5,140	6,200
7	1,540	2,160	2,580	3,110	3,520	3,930
15	1,400	1,870	2,140	2,430	2,610	2,780
30	1,240	1,600	1,780	1,960	2,070	2,160
60	1,050	1,300	1,420	1,530	1,600	1,640
90	868	1,070	1,160	1,240	1,290	1,330

Magnitude and probability of seasonal low flow from
July-October based on 66 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	85	50	37	28	20	16
3	88	54	41	33	25	20
7	93	59	47	38	30	25
14	100	67	55	46	38	34
30	115	81	69	61	53	49

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	488	46	178	103	66
November	437	41	128	62	67
December	288	27	86	36	67
January	192	25	68	27	67
February	203	26	68	35	67
March	213	29	69	32	67
April	715	61	207	116	67
May	1,300	334	786	194	67
June	2,450	340	1,120	417	67
July	1,280	141	603	241	67
August	521	117	260	91	67
September	514	77	177	92	67
Annual	504	146	314	72	66

05013700 St. Mary River above Swiftcurrent Creek, near Babb, Mont.
Site Number 2

LOCATION.--Lat 48°51'00", long 113°24'50" (NAD 27), in NE¼ sec.27, T.36 N, R.14 W., Glacier County, 0.5 mi downstream from Lower St. Mary Lake, 1 mi southeast of Babb, and 2 mi upstream from Swiftcurrent Creek.
DRAINAGE AREA.--173 mi^2.
PERIOD OF RECORD.--13 years (1902-15). Published as "near St. Mary" 1902-04, and as "near Babb" 1905-15.
GAGE.--Chain gage. Altitude of gage is 4,460 ft (NGVD 29, from topographic map).
REMARKS.--No regulation or diversion.

Magnitude and probability of annual low flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	47	27	15	8.4	--	--
3	51	36	30	27	--	--
7	53	38	33	29	--	--
14	59	44	38	34	--	--
30	65	50	44	40	--	--
60	77	61	54	48	--	--
90	102	74	61	52	--	--
120	135	92	75	62	--	--
183	214	169	150	137	--	--

Magnitude and probability of seasonal low flow from
March-June based on 14 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	72	45	34	28	--	--
3	73	45	36	29	--	--
7	75	47	37	30	--	--
14	78	52	42	36	--	--
30	91	65	55	48	--	--

Magnitude and probability of seasonal low flow from
November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	58	33	18	9.4	--	--
3	60	43	36	31	--	--
7	62	46	39	34	--	--
14	66	49	42	36	--	--
30	70	54	47	41	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
38	45	56	71	95	131	193	281
40%	30%	20%	15%	10%	5%	2%	1%
418	618	910	1,130	1,450	2,000	2,790	3,430

Magnitude and probability of annual high flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	2,290	3,600	4,810	6,840	--	--
3	2,250	3,530	4,710	6,670	--	--
7	2,180	3,310	4,280	5,810	--	--
15	2,070	3,010	3,740	4,800	--	--
30	1,910	2,630	3,130	3,800	--	--
60	1,620	2,090	2,400	2,780	--	--
90	1,370	1,730	1,960	2,250	--	--

Magnitude and probability of seasonal low flow from
July-October based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	199	154	138	127	--	--
3	203	157	140	128	--	--
7	213	163	143	129	--	--
14	222	180	165	156	--	--
30	254	208	192	183	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	646	174	345	148	13
November	666	81	269	161	13
December	305	54	148	78	13
January	120	45	82	23	14
February	140	40	86	27	14
March	190	50	104	44	14
April	519	129	230	119	14
May	1,730	479	1,000	311	14
June	3,400	1,060	1,980	742	14
July	2,160	793	1,300	447	14
August	894	364	633	154	14
September	694	255	406	140	14
Annual	754	388	540	117	13

05014000 Grinnell Creek near Many Glacier, Mont.
Site Number 3

LOCATION.--Lat 48°46'14", long 113°41'53" (NAD 27), in SE¼ sec.21, T.35 N., R.16 W., (unsurveyed), Glacier National Park, Hydrologic Unit 10010002, on right bank 600 ft upstream from trail crossing, 900 ft downstream from Grinnell Lake, 0.3 mi upstream from mouth, 2.6 mi southwest of Many Glacier, and 13.5 mi southwest of Babb.

DRAINAGE AREA.--3.32 mi^2.

PERIOD OF RECORD.--30 years. August 1949 to September 1978 (discontinued). No winter record since 1976.

GAGE.--Water-stage recorder. Altitude of gage is 4,920 ft (NGVD 29, from topographic map). Prior to Oct. 12, 1949, nonrecording gages at various sites and datums.

REMARKS.--No regulation or diversion. After 1964, some inflow from Cataract Creek has entered upstream from gage during highwater periods in some years.

Magnitude and probability of annual low flow
based on 26 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.44	0.29	0.24	0.20	0.17	--
3	.47	.30	.24	.21	.17	--
7	.54	.34	.28	.23	.20	--
14	.68	.45	.37	.31	.27	--
30	.99	.68	.57	.50	.43	--
60	1.6	1.1	.88	.75	.63	--
90	2.5	1.6	1.3	1.1	.87	--
120	3.8	2.6	2.2	1.9	1.6	--
183	9.1	7.2	6.4	5.8	5.1	--

Magnitude and probability of seasonal low flow from
March-June based on 27 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.74	0.42	0.32	0.26	0.21	--
3	.79	.44	.33	.27	.21	--
7	.93	.49	.36	.28	.22	--
14	1.1	.61	.45	.35	.27	--
30	1.7	1.0	.78	.65	.53	--

Magnitude and probability of seasonal low flow from
November-February based on 27 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.60	0.33	0.25	0.20	0.18	--
3	.65	.35	.26	.21	.18	--
7	.72	.41	.32	.26	.21	--
14	.85	.52	.41	.35	.30	--
30	1.2	.74	.60	.51	.44	--

Duration of daily mean flows based on 27 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.15	0.31	0.77	1.3	2.5	4.0	6.4	12
40%	30%	20%	15%	10%	5%	2%	1%
21	34	50	61	76	97	125	151

Magnitude and probability of annual high flow
based on 27 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	159	214	259	326	385	--
3	140	185	221	275	322	--
7	121	155	179	213	239	--
15	109	134	150	171	186	--
30	96	116	129	146	158	--
60	83	97	105	115	121	--
90	72	81	87	93	98	--

Magnitude and probability of seasonal low flow from
July-October based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.4	3.8	3.1	2.6	2.1	--
3	5.8	4.1	3.4	2.8	2.2	--
7	6.7	4.7	3.9	3.2	2.6	--
14	8.4	5.8	4.7	3.8	3.0	--
30	12	8.3	6.7	5.6	4.6	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	41	5.0	15	8.5	29
November	19	.96	8.0	4.0	28
December	9.2	.87	3.8	2.1	28
January	13	.62	2.9	2.7	27
February	5.3	.63	2.2	1.5	27
March	7.9	.65	2.3	1.8	27
April	19	2.0	8.9	4.7	27
May	74	21	47	13	29
June	135	52	90	22	29
July	114	40	68	17	29
August	52	28	39	6.4	30
September	49	16	23	7.2	30
Annual	33	22	26	2.9	27

05014500 Swiftcurrent Creek at Many Glacier, Mont.
(Hydrologic bench-mark station)
Site Number 4

LOCATION.--Lat 48°47'57", long 113°39'21" (NAD 27), in SE¼ sec.11, T.35 N., R.16 W., Glacier County, Hydrologic Unit 10010002, Glacier National Park, on right bank 100 ft upstream from outlet of Swiftcurrent Lake at Many Glacier, and 11 mi southwest of Babb.

DRAINAGE AREA.--30.9 mi^2.

PERIOD OF RECORD.--June 1912 to current year (2002; records incomplete most years prior to 1959). Published as "at McDermott Lake," 1912-14. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1918(M), 1943. WDR MT-75-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,876.78 ft (NGVD 29). Prior to May 23, 1916, nonrecording gage on left bank of lake opposite present gage and at present datum, and May 23, 1916, to June 15, 1918, nonrecording gage at present site and datum.

REMARKS.--No regulation or diversion upstream from station. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow
based on 46 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	8.3	6.8	5.5	0.00	--
3	12	8.8	7.2	5.9	.00	--
7	13	9.4	7.7	6.5	5.3	--
14	14	11	9.1	7.9	6.8	--
30	17	12	11	9.4	8.0	--
60	22	16	13	11	9.8	--
90	27	19	16	14	12	--
120	34	24	20	17	15	--
183	50	37	32	28	24	--

Magnitude and probability of seasonal low flow from
March-June based on 58 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	11	8.9	7.7	6.7	6.1
3	16	11	9.2	8.1	7.0	6.4
7	17	12	9.9	8.7	7.6	7.0
14	19	13	11	9.6	8.4	7.7
30	24	16	13	12	10	9.1

Magnitude and probability of seasonal low flow from
November-February based on 47 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	9.2	7.6	6.4	0.00	--
3	14	9.8	8.1	6.8	.00	--
7	15	10	8.5	7.1	5.8	--
14	16	12	9.9	8.6	7.3	--
30	19	14	12	9.9	8.4	--

Duration of daily mean flows based on 46 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
11	12	16	21	31	46	64	88
40%	30%	20%	15%	10%	5%	2%	1%
124	182	284	357	459	618	753	933

Magnitude and probability of annual high flow
based on 46 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	909	1,280	1,640	2,240	2,820	--
3	830	1,090	1,310	1,620	1,900	--
7	723	906	1,030	1,180	1,300	--
15	632	770	853	949	1,020	--
30	556	658	711	765	800	--
60	459	536	577	622	651	--
90	383	439	467	495	513	--

Magnitude and probability of seasonal low flow from
July-October based on 88 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	36	25	20	17	14	12
3	38	26	21	18	15	13
7	41	28	23	19	16	14
14	45	31	25	21	17	15
30	54	37	31	26	22	20

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	243	20	84	53	88
November	237	13	72	50	53
December	100	14	37	21	49
January	177	10	33	28	48
February	68	6.9	27	14	47
March	96	9.7	30	18	59
April	340	17	104	53	67
May	656	205	377	85	88
June	822	193	490	140	91
July	519	114	261	93	90
August	207	57	117	33	90
September	236	32	86	44	90
Annual	184	86	141	23	46

05017500 St. Mary River near Babb, Mont.
Site Number 5

LOCATION.--Lat 48°50'00", long 113°25'08" (NAD 27), in NW¼NW¼SE¼ sec.34, T.36 N., R.14 W., Glacier County, Hydrologic Unit 10010002, Blackfeet Indian Reservation, on right bank 0.7 mi upstream from outlet of Lower St. Mary Lake and 2.0 mi southeast of Babb.

DRAINAGE AREA.--276 mi^2.

PERIOD OF RECORD.--July 1901 to October 1902, May 1910 to September 1925, October 1950 to current year (2002). Monthly discharge only for some periods, published in WSP 1308. Published as "at Main" in 1901-02, and as "below Swiftcurrent Creek, at Babb" 1910-15. Records published as "near Babb" for April 1902 to September 1915, May 1929 to September 1950 at sites about 1.5 mi downstream not equivalent because flow of Swiftcurrent Creek not included 1902-15 and because diversion by St. Mary Canal not included 1929-50.

REVISED RECORDS.--WSP 1308: 1913-14, 1920, 1922-24. WSP 1508: 1902.

GAGE.--Water-stage recorder. Altitude of gage is 4,468.13 ft (NGVD 29). Prior to Oct. 1, 1915, water-stage recorder or nonrecording gages at several sites about 3.8 mi downstream at different datums. Oct. 1, 1915, to Sept. 30, 1925, water-stage recorder or nonrecording gages at several sites within 1.5 mi downstream at different datums.

REMARKS.--Entire flow of Swiftcurrent Creek below Lake Sherburne is diverted into Lower St. Mary Lake upstream from station. Flow of Swiftcurrent Creek regulated by Lake Sherburne (station number 05015500) since 1919. October 1950 to September 1976, monthly discharge and runoff figures adjusted for change in contents in Lake Sherburne. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow based on 57 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	58	43	37	33	28	25
3	59	44	38	33	28	26
7	61	46	39	34	29	27
14	64	48	41	36	31	28
30	73	54	46	40	35	31
60	90	66	55	48	40	36
90	108	75	61	52	43	38
120	130	88	72	61	52	46
183	262	186	156	134	114	102

Magnitude and probability of seasonal low flow from March-June based on 59 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	82	59	50	45	39	36
3	83	60	51	45	40	37
7	87	61	52	46	40	37
14	93	64	54	48	42	39
30	117	75	61	52	45	41

Magnitude and probability of seasonal low flow from November-February based on 58 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	66	47	39	34	28	26
3	67	48	40	34	29	26
7	69	49	41	35	30	27
14	74	52	43	37	31	28
30	82	59	49	42	35	31

Duration of daily mean flows based on 59 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
42	49	63	77	106	144	212	351
40%	30%	20%	15%	10%	5%	2%	1%
691	996	1,340	1,560	1,980	2,680	3,570	4,120

Magnitude and probability of annual high flow based on 59 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	3,480	5,090	6,470	8,650	10,600	13,000
3	3,450	4,910	6,070	7,750	9,200	10,800
7	3,270	4,490	5,360	6,520	7,440	8,400
15	2,960	3,930	4,570	5,370	5,970	6,570
30	2,630	3,360	3,810	4,360	4,740	5,120
60	2,230	2,740	3,050	3,410	3,670	3,910
90	1,930	2,310	2,520	2,770	2,940	3,100

Magnitude and probability of seasonal low flow from July-October based on 59 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	165	101	78	63	50	43
3	169	103	80	64	51	44
7	178	107	82	66	52	45
14	195	114	87	70	56	48
30	270	155	116	91	70	58

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,320	67	377	258	60
November	1,280	45	257	223	60
December	722	34	152	110	59
January	302	37	113	52	59
February	249	34	109	48	59
March	457	39	155	103	59
April	977	85	460	236	59
May	2,570	670	1,660	435	60
June	4,810	1,290	2,500	757	60
July	2,700	687	1,590	442	60
August	1,410	320	994	213	60
September	1,290	119	694	304	60
Annual	1,070	442	758	138	59

05020500 St. Mary River at international boundary (International gaging station) Site Number 6

LOCATION.--Lat 49°00'43", long 113°17'57" (NAD 27), in NE¼ sec.5, T.1, R.25 W., fourth meridian, in Alberta, Hydrologic Unit 10010002, on left bank 1.0 mi north of international boundary, 3.6 mi downstream from Boundary Creek, 6.5 mi southwest of Kimball, Alberta, and 13 mi northeast of Babb, Mont.

DRAINAGE AREA.--465 mi^2.

PERIOD OF RECORD.--September 1902 to current year (2002). Monthly discharge only for some periods, published in WSP 1308. Published as "near Cardston, Alberta," and "at Cook's Ranch, Alberta," 1902-12 and as "near Kimball, Alberta," 1913-55.

REVISED RECORDS.--WSP 1308: 1902, 1908-12. WSP 1508: 1902, 1908-09. WDR-MT-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,087.40 ft (NGVD 29) based upon levels from datum established at previous site 1.1 mi upstream by Prairie Farm Rehabilitation Administration. Prior to Jan. 1, 1913, nonrecording gages at two sites within 0.3 mi of previous site at different datums. Jan. 1, 1913, to Oct. 25, 1955, water-stage recorder at several sites about 7 mi downstream from present site at various datums. Oct. 26, 1955, to Mar. 23, 1965, water-stage recorder at site 200 ft upstream from previous site at datum 2 ft higher. Mar. 24, 1965, to Sept. 8, 1975, water-stage recorder at site 100 ft upstream from previous site at same datum. Water-stage recorder at site 1.1 mi upstream June 22, 1975, to Oct. 31, 1999.

REMARKS.--Since 1917, St. Mary Canal has diverted water from the river near Babb, Mont., to North Fork Milk River. Some regulation by Lake Sherburne on Swiftcurrent Creek. Bureau of Reclamation satellite telemeter at station.

Unregulated streamflow period

Magnitude and probability of annual low flow based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	106	87	78	72	--	--
3	108	89	80	72	--	--
7	114	92	82	74	--	--
14	117	94	84	76	--	--
30	123	99	88	79	--	--
60	150	117	101	89	--	--
90	180	145	130	118	--	--
120	252	183	153	131	--	--
183	408	307	257	218	--	--

Magnitude and probability of seasonal low flow from March-June based on 14 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	161	122	108	98	--	--
3	165	124	110	99	--	--
7	178	134	117	106	--	--
14	188	137	119	108	--	--
30	194	143	126	115	--	--

Magnitude and probability of seasonal low flow from November-February based on 14 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	116	90	79	72	--	--
3	118	92	81	74	--	--
7	125	97	83	75	--	--
14	128	99	85	76	--	--
30	132	103	90	80	--	--

Duration of daily mean flows based on 14 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
83	96	117	147	202	259	393	537
40%	30%	20%	15%	10%	5%	2%	1%
749	1,100	1,580	2,020	2,570	3,420	4,910	5,740

Magnitude and probability of annual high flow based on 14 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,000	7,140	10,900	19,000	--	--
3	3,910	6,840	10,200	17,300	--	--
7	3,840	6,360	8,940	13,700	--	--
15	3,710	5,660	7,340	10,000	--	--
30	3,470	4,930	6,030	7,580	--	--
60	2,940	3,870	4,500	5,320	--	--
90	2,500	3,200	3,680	4,310	--	--

Magnitude and probability of seasonal low flow from July-October based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	380	282	233	196	--	--
3	394	290	238	199	--	--
7	410	299	243	201	--	--
14	429	314	259	218	--	--
30	502	367	306	261	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,040	221	630	225	14
November	1,100	130	476	246	14
December	438	157	242	78	14
January	224	90	153	38	14
February	377	75	164	74	14
March	516	120	229	114	14
April	1,190	304	617	221	14
May	2,480	1,220	1,910	331	14
June	7,500	2,240	3,680	1,590	14
July	3,460	1,180	2,140	719	14
August	1,460	580	1,030	261	14
September	1,380	371	724	306	15
Annual	1,350	646	1,000	226	14

05020500 St. Mary River at international boundary—Continued
(International gaging station)
Site Number 6

Regulated streamflow period

Magnitude and probability of annual low flow
based on 85 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	71	48	38	30	24	20
3	74	52	42	35	28	24
7	79	57	48	41	34	29
14	87	64	54	47	40	36
30	100	75	64	56	48	43
60	123	92	79	70	61	56
90	143	103	88	78	69	63
120	173	120	101	88	76	70
183	253	181	154	136	119	110

Magnitude and probability of seasonal low flow from
March-June based on 86 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	100	66	53	45	37	32
3	104	70	58	49	42	37
7	111	78	66	58	51	47
14	122	85	73	64	57	52
30	149	103	87	77	67	62

Magnitude and probability of seasonal low flow from
November-February based on 85 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	82	53	42	34	27	23
3	85	57	46	39	32	27
7	90	62	51	44	37	33
14	97	69	58	51	43	39
30	110	79	67	59	51	46

Duration of daily mean flows based on 85 years of record

Discharge, in ft³/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
55	67	84	105	143	185	254	344
40%	30%	20%	15%	10%	5%	2%	1%
465	654	1,000	1,300	1,770	2,630	3,790	4,510

Magnitude and probability of annual high flow
based on 85 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	3,610	5,710	7,320	9,610	11,500	13,600
3	3,520	5,490	6,930	8,900	10,500	12,100
7	3,270	4,950	6,090	7,560	8,660	9,770
15	2,900	4,280	5,160	6,250	7,030	7,780
30	2,510	3,600	4,280	5,100	5,680	6,230
60	2,040	2,850	3,360	3,970	4,400	4,810
90	1,680	2,300	2,690	3,160	3,500	3,830

Magnitude and probability of seasonal low flow from
July-October based on 85 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	198	127	100	81	64	54
3	205	135	108	90	74	64
7	219	148	121	103	86	76
14	242	164	134	113	94	83
30	288	198	163	139	117	104

Monthly and annual mean discharges

Month	Maximum (ft³/s)	Minimum (ft³/s)	Mean (ft³/s)	Standard deviation (ft³/s)	Years of record
October	1,590	88	423	267	86
November	1,420	80	319	241	86
December	844	64	197	120	86
January	729	56	155	98	86
February	411	42	149	71	86
March	512	55	182	102	86
April	1,330	136	447	244	86
May	3,560	678	1,640	622	86
June	5,940	694	2,430	1,180	86
July	3,030	496	1,200	573	86
August	1,060	246	531	161	86
September	1,510	153	449	255	85
Annual	1,280	316	675	212	85

06012500 Red Rock River below Lima Reservoir, near Monida, Mont.
Site Number 7

LOCATION.--Lat 44°39'22", long 112°22'14" (NAD 27), in NE¼SE¼SE¼ sec.31, T.13 S., R.6 W., Beaverhead County, Hydrologic Unit 10020001, on right bank just downstream from Lima Reservoir, 7 mi northwest of Monida, and at river mile 2,542.1.

DRAINAGE AREA.--570 mi^2.

PERIOD OF RECORD.--January 1911 to December 1918, April 1919, May 1925 to October 1933, April 1934 to September 1935, May 1936 to October 1938, May 1939 to September 1969, seasonal records only June 1974 to September 1982 and April 1985 to current year (2002). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1950, published as "below Red Rock Reservoir."

REVISED RECORDS.--WSP 1309: 1935. WSP 1389: 1912, 1934. WSP 1559: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 6,530 ft (NGVD 29), estimated from spillway elevation based on Montana Department of Natural Resources and Conservation datum. Prior to Oct. 1, 1978, at datum 1.00 ft higher. See WSP 1709 for history of nonrecording gage changes prior to May 8, 1939.

REMARKS.--Flow regulated by Lima Reservoir (station number 06012000). No storage during 1934. Diversions for irrigation of about 10,000 acres upstream from reservoir. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow
based on 27 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	11	3.9	0.00	0.00	0.00	--
3	12	5.6	.00	.00	.00	--
7	13	6.3	.00	.00	.00	--
14	13	7.3	1.6	.00	.00	--
30	14	8.1	4.1	.00	.00	--
60	18	12	9.8	8.0	6.2	--
90	21	14	12	9.8	8.1	--
120	22	15	13	11	9.1	--
183	50	28	20	14	9.8	--

Magnitude and probability of seasonal low flow from
March-June based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	17	6.0	0.00	0.00	0.00	--
3	18	6.4	.00	.00	.00	--
7	18	8.8	2.1	.00	.00	--
14	18	9.4	2.9	.00	.00	--
30	19	9.6	4.4	.00	.00	--

Magnitude and probability of seasonal low flow from
November-February based on 29 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	7.6	0.00	0.00	0.00	--
3	15	8.7	3.8	.00	.00	--
7	16	9.1	4.6	.00	.00	--
14	16	9.6	5.4	.00	.00	--
30	17	11	6.5	.00	.00	--

Duration of daily mean flows based on 31 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.26	0.51	5.7	12	19	25	33	67
40%	30%	20%	15%	10%	5%	2%	1%
183	269	354	410	483	595	704	740

Magnitude and probability of annual high flow
based on 31 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	541	646	702	763	803	--
3	536	640	697	760	800	--
7	527	631	688	751	791	--
15	504	606	661	722	762	--
30	469	564	615	671	708	--
60	415	502	552	611	651	--
90	370	446	489	537	569	--

Magnitude and probability of seasonal low flow from
July-October based on 51 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	16	4.3	0.00	0.00	0.00	0.00
3	20	6.6	.00	.00	.00	.00
7	30	7.8	.00	.00	.00	.00
14	33	8.7	1.8	.00	.00	.00
30	42	11	4.3	1.0	.00	.00

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	263	0.93	67	62	53
November	96	6.7	32	23	31
December	66	10	26	14	29
January	57	9.0	23	9.1	29
February	53	8.0	22	9.1	29
March	48	7.1	21	9.0	28
April	416	1.2	64	76	55
May	676	66	313	135	56
June	707	206	491	104	57
July	652	14	329	118	57
August	513	3.3	227	110	57
September	384	.57	156	104	56
Annual	262	67	147	44	31

06013500 Big Sheep Creek below Muddy Creek, near Dell, Mont.
Site Number 8

LOCATION.--Lat 44°39'19", long 112°46'41" (NAD 27), in SW¼NW¼SE¼ sec.35, T.13 S., R.10 W., Beaverhead County, Hydrologic Unit 10020001, on left bank 2.2 mi downstream from Muddy Creek, 6.5 mi southwest of Dell and 8.5 mi upstream from mouth.

DRAINAGE AREA.--278 mi^2.

PERIOD OF RECORD.--Apri1 to September 1936, May 1946 to September 1953. Annual maximums and daily flows for water years 1961-76 on file in USGS Montana District Office. October 1976 to September 1979 (discontinued). Published as "Sheep Creek near Dell," 1936, and "Sheep Creek below Muddy Creek, near Dell," 1946-53, 1960-65.

REVISED RECORDS.--WDR MT-75-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,390 ft (NGVD 29, from topographic map). Apr. 21 to Sept. 30, 1936, nonrecording gage at site about 3 mi downstream at different datum.

REMARKS.--Diversions for irrigation of about 6,600 acres upstream from station.

Magnitude and probability of annual low flow
based on 25 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	35	31	28	27	25	--
3	36	31	29	28	26	--
7	36	32	30	29	27	--
14	37	33	31	29	28	--
30	38	34	32	30	29	--
60	41	36	33	32	30	--
90	44	38	35	33	30	--
120	48	41	37	34	30	--
183	52	44	39	36	32	--

Magnitude and probability of seasonal low flow from
March-June based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	37	33	32	31	30	--
3	38	33	32	31	30	--
7	39	34	32	31	30	--
14	40	34	33	31	30	--
30	43	36	33	32	30	--

Magnitude and probability of seasonal low flow from
November-February based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	37	33	30	29	27	--
3	38	33	31	30	28	--
7	38	34	32	31	29	--
14	39	35	33	31	30	--
30	40	35	34	32	31	--

Duration of daily mean flows based on 26 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
25	28	33	36	40	45	50	56
40%	30%	20%	15%	10%	5%	2%	1%
62	70	84	91	109	142	184	229

Magnitude and probability of annual high flow
based on 26 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	262	348	387	422	440	--
3	225	298	332	363	380	--
7	191	250	276	300	312	--
15	163	203	218	231	237	--
30	136	169	183	194	200	--
60	109	141	157	174	184	--
90	99	127	141	156	166	--

Magnitude and probability of seasonal low flow from
July-October based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	46	37	32	28	24	--
3	47	38	33	29	25	--
7	48	39	34	30	26	--
14	50	40	35	32	28	--
30	54	43	37	33	28	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	89	35	62	13	26
November	77	39	57	9.3	26
December	63	36	48	7.2	26
January	59	32	43	6.5	26
February	60	32	42	7.2	26
March	106	33	50	18	26
April	178	38	89	35	26
May	180	29	86	40	27
June	181	30	102	44	28
July	153	30	71	30	28
August	98	28	67	19	28
September	82	30	55	14	28
Annual	89	35	65	13	26

06015400 Beaverhead River near Grant, Mont.
Site Number 9

LOCATION.--Lat 45°00'12", long 112°51'10" (NAD 27), in NW¼SW¼SE¼ sec.32, T.9 S., R.10 W., Beaverhead County, Hydrologic Unit 10020002, on right bank 0.4 mi downstream from Clark Canyon Dam, 1.3 mi upstream from Clark Canyon Creek, 10.3 mi east of Grant, and at river mile 2,483.6.
DRAINAGE AREA.--2,322 mi^2.
PERIOD OF RECORD.--September 1962 to September 1983 (discontinued). Prior to October 1968, published as "near Armstead."
GAGE.--Water-stage recorder. Altitude of gage is 5,442.78 ft (NGVD 29, levels by U.S. Army Corps of Engineers).
REMARKS.--Diversions for irrigation of about 76,500 acres upstream from station. Flow completely regulated by Clark Canyon Reservoir (station number 06015300).

Magnitude and probability of annual low flow
based on 20 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	90	56	42	32	--	--
3	102	64	48	37	--	--
7	113	71	53	41	--	--
14	119	74	56	44	--	--
30	125	80	63	52	--	--
60	132	85	67	55	--	--
90	158	98	75	60	--	--
120	195	115	84	63	--	--
183	248	156	120	95	--	--

Magnitude and probability of seasonal low flow from
March-June based on 21 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	134	95	78	65	--	--
3	148	101	81	66	--	--
7	163	106	83	67	--	--
14	173	111	86	68	--	--
30	184	116	89	71	--	--

Magnitude and probability of seasonal low flow from
November-February based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	153	97	74	59	--	--
3	156	98	75	59	--	--
7	162	101	77	61	--	--
14	169	105	79	62	--	--
30	181	111	83	63	--	--

Duration of daily mean flows based on 21 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
56	67	80	102	158	214	255	315
40%	30%	20%	15%	10%	5%	2%	1%
389	501	650	731	847	984	1,070	1,090

Magnitude and probability of annual high flow
based on 21 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,000	1,130	1,190	1,250	--	--
3	980	1,110	1,170	1,230	--	--
7	958	1,090	1,160	1,230	--	--
15	916	1,060	1,130	1,210	--	--
30	856	994	1,070	1,150	--	--
60	754	895	975	1,060	--	--
90	712	850	923	1,000	--	--

Magnitude and probability of seasonal low flow from
July-October based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	116	61	43	33	--	--
3	140	74	51	37	--	--
7	174	89	60	42	--	--
14	191	98	66	46	--	--
30	229	132	99	77	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	616	79	286	168	21
November	529	53	284	160	21
December	497	54	255	127	21
January	446	49	213	96	21
February	373	76	224	91	21
March	441	75	213	102	21
April	803	73	280	201	21
May	946	99	492	245	21
June	980	114	686	200	21
July	938	345	672	160	21
August	1,220	268	669	226	21
September	1,000	98	417	227	21
Annual	579	173	392	107	21

06016000 Beaverhead River at Barretts, Mont.
Site Number 10

LOCATION.--Lat 45°06'59", long 112°44'59" (NAD 27), in SE¼SW¼SE¼ sec.19, T.8 S., R.9 W., Beaverhead County, Hydrologic Unit 10020002, on left bank 1.4 mi upstream from Barretts, 2.2 mi downstream from Grasshopper Creek, 8.9 mi southwest of Dillon, and at river mile 2,469.2.

DRAINAGE AREA.--2,737 mi^2.

PERIOD OF RECORD.--August 1907 to September 1986, October 1986 to current year (2002; seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1963, published as "at Barratts."

REVISED RECORDS.--WSP 1729: 1908(M), 1910-12(M), 1929(M), 1935-36. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,268.17 ft (NGVD 29). Prior to Oct. 19, 1934, nonrecording gages at same site and datum.

REMARKS.--Some regulation by Lima Reservoir (station number 06012000) and nearly complete regulation by Clark Canyon Reservoir (station number 06015300) after August 1964. Diversions for irrigation of about 90,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

Unregulated streamflow period

Magnitude and probability of annual low flow
based on 55 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	186	134	111	93	77	67
3	188	137	114	97	80	70
7	194	142	118	101	83	73
14	204	149	124	105	86	75
30	222	160	132	111	90	78
60	244	174	142	118	95	81
90	262	186	151	125	99	84
120	290	204	164	135	106	89
183	313	225	183	152	122	104

Magnitude and probability of seasonal low flow from
March-June based on 56 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	217	158	131	112	93	82
3	221	161	135	115	96	84
7	231	170	143	122	101	89
14	245	182	153	132	111	99
30	281	208	175	151	126	111

Magnitude and probability of seasonal low flow from
November-February based on 55 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	241	177	143	117	91	75
3	243	181	149	124	98	83
7	248	189	159	135	111	96
14	256	199	170	147	123	109
30	270	214	184	161	136	121

Duration of daily mean flows based on 56 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
103	117	143	175	223	265	300	334
40%	30%	20%	15%	10%	5%	2%	1%
368	429	504	572	708	990	1,370	1,680

Magnitude and probability of annual high flow
based on 56 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,280	1,920	2,310	2,780	3,100	3,400
3	1,190	1,790	2,160	2,600	2,910	3,200
7	1,050	1,590	1,940	2,380	2,690	3,000
15	917	1,410	1,750	2,180	2,500	2,820
30	778	1,220	1,540	1,980	2,330	2,690
60	646	1,000	1,270	1,630	1,930	2,240
90	582	878	1,090	1,380	1,600	1,840

Magnitude and probability of seasonal low flow from
July-October based on 55 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	206	145	120	102	84	73
3	208	147	121	102	84	73
7	213	150	123	104	85	74
14	221	154	126	106	87	76
30	240	165	133	111	91	78

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	717	116	359	156	56
November	889	153	409	138	56
December	539	140	340	88	56
January	442	120	285	69	56
February	396	150	280	61	56
March	934	169	351	124	56
April	1,350	123	495	243	56
May	1,910	131	593	386	56
June	2,610	146	735	497	56
July	959	96	374	169	56
August	603	96	297	123	56
September	591	88	288	121	56
Annual	738	168	401	135	56

06016000 Beaverhead River at Barretts, Mont.—Continued
Site Number 10

Regulated streamflow period

Magnitude and probability of annual low flow
based on 22 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	190	137	108	89	--	--
3	201	140	109	89	--	--
7	210	145	112	90	--	--
14	216	150	114	91	--	--
30	226	167	125	99	--	--
60	240	177	152	135	--	--
90	276	195	163	140	--	--
120	320	215	172	142	--	--
183	357	240	195	165	--	--

Magnitude and probability of seasonal low flow from
March-June based on 39 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	223	155	128	108	90	--
3	235	161	131	110	90	--
7	242	164	133	111	91	--
14	248	167	135	113	92	--
30	262	177	144	122	101	--

Magnitude and probability of seasonal low flow from
November-February based on 22 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	247	175	144	122	--	--
3	251	181	151	129	--	--
7	259	187	157	134	--	--
14	268	193	161	138	--	--
30	278	199	166	141	--	--

Duration of daily mean flows based on 23 years of record

Discharge, in ft³/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
97	108	136	167	233	298	359	439
40%	30%	20%	15%	10%	5%	2%	1%
530	661	811	915	1,020	1,190	1,440	1,690

Magnitude and probability of annual high flow
based on 23 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,220	1,560	1,820	2,190	--	--
3	1,200	1,530	1,790	2,170	--	--
7	1,160	1,480	1,730	2,090	--	--
15	1,100	1,410	1,640	1,970	--	--
30	1,030	1,310	1,530	1,840	--	--
60	926	1,180	1,380	1,660	--	--
90	873	1,110	1,300	1,570	--	--

Magnitude and probability of seasonal low flow from
July-October based on 37 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	215	137	108	90	72	--
3	228	141	110	90	72	--
7	246	146	112	90	73	--
14	257	151	114	91	74	--
30	288	167	126	99	76	--

Monthly and annual mean discharges

Month	Maximum (ft³/s)	Minimum (ft³/s)	Mean (ft³/s)	Standard deviation (ft³/s)	Years of record
October	1,090	82	357	229	38
November	806	138	408	202	23
December	685	133	360	156	23
January	547	127	312	115	23
February	514	132	314	104	23
March	654	111	293	139	39
April	1,100	126	371	219	39
May	1,220	224	648	241	39
June	2,180	482	906	308	39
July	2,150	463	845	298	39
August	1,930	341	702	311	39
September	1,640	76	433	313	39
Annual	1,100	293	538	162	23

06017500 Blacktail Deer Creek near Dillon, Mont.
Site Number 11

LOCATION.--Lat 45°02'47", long 111°32'53" (NAD 27), in NE¼SE¼SW¼ sec.14, T.9 S., R.8 W., Beaverhead County, on left bank 12.5 mi southeast of Dillon and 14 mi upstream from mouth.

DRAINAGE AREA.--312 mi^2.

PERIOD OF RECORD.--18 years. April 1946 to December 1953, April 1955 to September 1966 (discontinued). Monthly discharge only for April 1946, published in WSP 1309. Prior to October 1960, published as "Blacktail Creek near Dillon."

GAGE.--Water-stage recorder. Altitude of gage is 5,667.59 ft (NGVD 29, levels by Bureau of Reclamation).

REMARKS.--Diversions for irrigation of about 4,000 acres upstream from station.

Magnitude and probability of annual low flow
based on 16 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	11	9.8	8.7	--	--
3	16	12	11	9.7	--	--
7	19	15	14	12	--	--
14	22	18	15	14	--	--
30	25	20	18	16	--	--
60	29	24	21	19	--	--
90	32	26	24	21	--	--
120	35	29	26	24	--	--
183	38	32	29	27	--	--

Magnitude and probability of seasonal low flow from
March-June based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	29	21	18	15	--	--
3	30	23	19	16	--	--
7	33	25	21	18	--	--
14	35	27	23	20	--	--
30	42	33	28	25	--	--

Magnitude and probability of seasonal low flow from
November-February based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	11	9.8	8.8	--	--
3	16	13	11	9.8	--	--
7	19	15	14	12	--	--
14	22	18	16	14	--	--
30	25	20	18	16	--	--

Duration of daily mean flows based on 18 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
14	17	22	26	32	37	41	46
40%	30%	20%	15%	10%	5%	2%	1%
53	60	69	81	95	127	178	217

Magnitude and probability of annual high flow
based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	175	264	328	413	--	--
3	163	243	301	377	--	--
7	151	221	270	334	--	--
15	139	200	242	297	--	--
30	125	177	213	259	--	--
60	104	141	163	191	--	--
90	91	119	136	155	--	--

Magnitude and probability of seasonal low flow from
July-October based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	35	27	23	20	--	--
3	36	27	23	20	--	--
7	37	29	25	22	--	--
14	38	30	26	23	--	--
30	41	32	29	26	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	68	26	46	11	19
November	52	26	42	8.1	19
December	52	22	33	7.4	19
January	43	16	30	5.7	18
February	51	16	33	10	18
March	63	24	43	11	18
April	78	37	56	13	20
May	132	39	80	27	20
June	237	50	128	52	20
July	109	34	70	23	20
August	72	25	47	13	20
September	62	28	45	10	20
Annual	76	35	54	11	18

06018000 Beaverhead River near Dillon, Mont.
Site Number 12

LOCATION.--Lat 45°18'18", long 112°33'45" (NAD 27), in NW¼NE¼NE¼ sec.22, T.6 S., R.8 W., Beaverhead County, Hydrologic Unit 10020002, on right bank just upstream from county road bridge on Anderson Lane, 7.0 mi northeast of Dillon and at river mile 2,444.1.

DRAINAGE AREA.--3,484 mi^2.

PERIOD OF RECORD.--October 1950 to September 1952, August 1963 to Sept. 30, 1983 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,960 ft (NGVD 29, by barometer). Prior to August 1963, nonrecording gage on upstream side of bridge at same datum.

REMARKS.--Flow partly regulated by Lima Reservoir (station number 06012000) and Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions upstream from station for irrigation of about 133,400 acres of which about 5,000 acres are irrigated by imported water from Birch and Willow Creeks and of which about 17,100 acres lies downstream from station including about 600 acres in Ruby River drainage.

Magnitude and probability of annual low flow
based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	72	37	26	19	--	--
3	76	41	29	22	--	--
7	85	50	38	30	--	--
14	101	62	49	40	--	--
30	125	81	66	56	--	--
60	166	107	84	69	--	--
90	184	120	96	80	--	--
120	204	132	105	87	--	--
183	250	165	132	109	--	--

Magnitude and probability of seasonal low flow from
March-June based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	90	48	32	23	--	--
3	96	53	38	28	--	--
7	111	66	49	39	--	--
14	134	84	65	53	--	--
30	163	105	85	72	--	--

Magnitude and probability of seasonal low flow from
November-February based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	325	213	161	124	--	--
3	331	222	172	135	--	--
7	340	240	193	159	--	--
14	354	263	221	189	--	--
30	368	280	239	208	--	--

Duration of daily mean flows based on 20 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
53	66	90	125	191	243	297	353
40%	30%	20%	15%	10%	5%	2%	1%
414	480	563	629	696	773	993	1,070

Magnitude and probability of annual high flow
based on 20 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	853	1,070	1,180	1,290	--	--
3	847	1,060	1,160	1,240	--	--
7	803	1,020	1,120	1,210	--	--
15	752	970	1,080	1,190	--	--
30	695	887	981	1,070	--	--
60	600	760	843	927	--	--
90	546	693	771	854	--	--

Magnitude and probability of seasonal low flow from
July-October based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	96	53	38	28	--	--
3	100	55	40	30	--	--
7	109	61	46	36	--	--
14	119	70	55	45	--	--
30	138	86	70	60	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	754	141	397	207	20
November	808	246	502	184	20
December	770	236	449	150	20
January	629	196	394	119	20
February	601	230	402	112	20
March	730	233	424	130	20
April	1,090	194	455	225	20
May	804	105	330	203	20
June	999	94	318	220	20
July	742	80	242	168	20
August	820	72	261	186	20
September	836	79	390	247	20
Annual	612	173	380	110	20

06018500 Beaverhead River near Twin Bridges, Mont.
Site Number 13

LOCATION.--Lat 45°23'01", long 112°27'07" (NAD 27), in SW¼NW¼SE¼ sec.22, T.5 S., R.7 W., Madison County, Hydrologic Unit 10020002, on left bank at downstream side of bridge on State Highway 41, 11.5 mi upstream from Ruby River, 12.7 mi southwest of Twin Bridges, 14.5 mi northeast of Dillon, and at river mile 2,430.4.

DRAINAGE AREA.--3,619 mi^2.

PERIOD OF RECORD.--August 1935 to current year (2002). Prior to October 1968, published as "at Blaine."

REVISED RECORDS.--WSP 1309: 1938(M), 1945(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,809.15 ft (NGVD 29). Prior to Feb. 17, 1949, nonrecording gage at bridge 0.5 mi upstream at different datum. Feb. 17, 1949, to June 28, 1951, nonrecording gage at present site and datum.

REMARKS.--Flow partly regulated by Lima Reservoir (station number 06012000) and Clark Canyon Reservoir (station number 06015300) since August 1964. Diversions upstream from station for irrigation of about 135,400 acres of which about 5,000 acres are irrigated by imported water from Birch and Willow Creeks and of which about 9,200 acres lies downstream from station including 600 acres in Ruby River drainage. Bureau of Reclamation satellite telemeter at station.

Unregulated streamflow period

Magnitude and probability of annual low flow based on 27 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	23	12	9.3	7.7	6.3	--
3	25	14	11	8.7	7.2	--
7	31	17	13	11	9.3	--
14	45	24	18	15	12	--
30	70	37	27	21	15	--
60	116	56	37	26	17	--
90	168	79	50	32	19	--
120	197	94	59	38	22	--
183	259	134	87	58	35	--

Magnitude and probability of seasonal low flow from March-June based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	12	10	8.2	6.7	--
3	30	14	12	9.2	7.7	--
7	38	18	14	12	10	--
14	55	26	20	15	12	--
30	113	47	30	21	16	--

Magnitude and probability of seasonal low flow from November-February based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	272	165	119	88	60	--
3	288	176	127	93	62	--
7	316	197	142	104	70	--
14	344	222	163	121	83	--
30	384	285	231	188	144	--

Duration of daily mean flows based on 28 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
18	23	35	60	134	252	344	407
40%	30%	20%	15%	10%	5%	2%	1%
452	498	567	629	691	753	1,030	1,250

Magnitude and probability of annual high flow based on 28 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,050	1,500	1,830	2,290	2,660	--
3	1,000	1,430	1,720	2,100	2,390	--
7	885	1,250	1,510	1,850	2,120	--
15	767	1,050	1,250	1,530	1,750	--
30	661	886	1,060	1,300	1,500	--
60	572	739	860	1,030	1,160	--
90	544	690	785	904	993	--

Magnitude and probability of seasonal low flow from July-October based on 27 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	40	21	16	12	9.9	--
3	44	24	18	14	11	--
7	51	28	21	17	14	--
14	63	34	26	21	17	--
30	87	46	34	26	20	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	743	32	406	189	28
November	687	247	556	109	28
December	609	330	500	70	28
January	507	173	397	88	28
February	538	200	419	76	28
March	776	299	490	98	28
April	902	96	472	202	28
May	859	41	256	224	28
June	1,400	24	424	394	28
July	870	28	233	201	28
August	431	26	168	102	28
September	630	28	344	171	29
Annual	642	170	389	117	28

06018500 Beaverhead River near Twin Bridges, Mont.—Continued
Site Number 13

Regulated streamflow period

Magnitude and probability of annual low flow based on 38 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	78	44	34	28	22	--
3	86	49	37	30	24	--
7	102	59	45	36	29	--
14	125	75	59	48	39	--
30	155	96	75	62	51	--
60	191	114	87	70	54	--
90	210	127	97	78	61	--
120	229	137	106	85	67	--
183	278	171	134	109	88	--

Magnitude and probability of seasonal low flow from March-June based on 39 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	85	46	34	28	23	--
3	94	51	38	30	25	--
7	113	64	48	38	30	--
14	142	85	66	54	44	--
30	187	112	88	72	59	--

Magnitude and probability of seasonal low flow from November-February based on 38 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	284	173	132	104	79	--
3	298	188	146	118	92	--
7	326	219	176	146	117	--
14	348	244	201	171	141	--
30	375	271	226	194	163	--

Duration of daily mean flows based on 39 years of record

Discharge, in ft³/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
53	66	94	128	193	250	311	374
40%	30%	20%	15%	10%	5%	2%	1%
444	516	640	709	807	994	1,140	1,440

Magnitude and probability of annual high flow based on 39 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	804	1,190	1,440	1,760	1,990	--
3	775	1,170	1,430	1,760	1,980	--
7	739	1,120	1,380	1,710	1,960	--
15	708	1,070	1,310	1,620	1,850	--
30	666	999	1,220	1,510	1,720	--
60	601	890	1,080	1,330	1,510	--
90	557	824	1,000	1,230	1,410	--

Magnitude and probability of seasonal low flow from July-October based on 38 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	101	55	43	35	29	--
3	110	61	47	39	32	--
7	122	69	54	45	38	--
14	142	80	63	52	43	--
30	171	98	77	64	53	--

Monthly and annual mean discharges

Month	Maximum (ft³/s)	Minimum (ft³/s)	Mean (ft³/s)	Standard deviation (ft³/s)	Years of record
October	1,330	148	479	259	39
November	1,060	242	553	238	39
December	852	208	479	199	39
January	724	197	422	150	39
February	707	199	430	137	39
March	799	207	467	152	39
April	1,250	136	486	252	39
May	1,120	77	358	255	39
June	1,620	63	364	326	39
July	1,590	55	320	311	39
August	1,580	63	308	290	39
September	1,690	106	418	326	39
Annual	1,100	165	423	187	39

06019500 Ruby River above reservoir, near Alder, Mont.
Site Number 14

LOCATION.--Lat 45°11'33", long 112°08'30" (NAD 27), in NW¼SE¼SW¼ sec.30, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank at county road bridge, 0.7 mi downstream from Mormon Creek, 4.2 mi upstream from Ruby Dam, 9.3 mi south of Alder, and at river mile 52.1.

DRAINAGE AREA.--534 mi^2.

PERIOD OF RECORD.--May 1938 to current year (2002). Monthly discharge only for May 1938, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1938(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,400 ft (NGVD 29). Prior to Oct. 1, 1938, nonrecording gage at bridge 2.0 mi upstream at different datum. Oct. 1, 1938, to Aug. 5, 1955, water-stage recorder at site 2.2 mi upstream at different datum. Aug. 6, 1955, to Sept. 30, 1997, water-stage recorder 2.3 mi upstream at different datum.

REMARKS.--Diversion for irrigation of about 3,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 63 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	79	63	54	47	39	35
3	81	65	57	50	42	37
7	84	69	60	53	46	41
14	89	74	65	59	51	46
30	93	79	72	66	59	55
60	98	86	80	75	70	66
90	103	91	86	81	76	73
120	107	96	90	86	81	78
183	111	98	92	88	83	80

Magnitude and probability of seasonal low flow from
March-June based on 64 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	93	82	76	71	65	61
3	95	84	78	73	68	65
7	97	86	81	77	73	71
14	100	90	85	82	78	76
30	106	95	90	88	85	83

Magnitude and probability of seasonal low flow from
November-February based on 64 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	89	75	65	57	48	42
3	91	77	68	60	51	45
7	94	80	72	65	56	51
14	97	84	77	71	64	59
30	99	88	82	78	72	69

Duration of daily mean flows based on 64 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
67	69	75	86	99	107	115	123
40%	30%	20%	15%	10%	5%	2%	1%
133	163	201	261	361	548	802	987

Magnitude and probability of annual high flow
based on 64 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	834	1,180	1,420	1,750	2,020	2,300
3	776	1,080	1,280	1,550	1,750	1,960
7	704	974	1,150	1,380	1,560	1,730
15	624	866	1,030	1,230	1,380	1,530
30	543	753	893	1,070	1,210	1,340
60	431	596	709	855	966	1,080
90	352	479	566	677	762	849

Magnitude and probability of seasonal low flow from
July-October based on 64 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	89	68	58	50	43	38
3	90	69	60	52	45	40
7	93	72	62	55	47	43
14	96	76	66	59	52	47
30	100	81	72	66	60	55

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	185	83	122	22	64
November	177	88	123	16	64
December	170	80	111	15	64
January	158	70	103	15	64
February	135	79	103	12	64
March	181	84	110	18	64
April	288	95	165	45	64
May	1,010	187	419	153	65
June	1,120	136	473	235	65
July	482	75	195	96	65
August	235	59	121	39	65
September	171	73	115	25	65
Annual	336	119	180	46	64

06020600 Ruby River below reservoir, near Alder, Mont.
Site Number 15

LOCATION.--Lat 45°14'32", long 112°06'36" (NAD 27), in SE¼SE¼NE¼ sec.8, T.7 S., R.4 W., Madison County, Hydrologic Unit 10020003, on right bank 0.2 mi downstream from Ruby Dam, 5.7 mi south of Alder, and at river mile 47.8.
DRAINAGE AREA.--596 mi^2.
PERIOD OF RECORD.--December 1962 to current year (2002).
REVISED RECORDS.--1985(M).
GAGE.--Water-stage recorder. Altitude of gage is 5,286.63 ft (NGVD 29, levels by U.S. Army Corps of Engineers).
REMARKS.--Flow regulated by Ruby River Reservoir (station number 06020500). Diversions for irrigation of about 3,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 39 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	29	21	18	16	14	--
3	30	23	19	17	15	--
7	31	23	20	17	15	--
14	32	24	21	18	16	--
30	33	25	22	20	18	--
60	37	28	25	23	21	--
90	44	31	27	24	21	--
120	51	36	31	27	23	--
183	100	74	62	54	45	--

Magnitude and probability of seasonal low flow from March-June based on 40 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	38	27	23	20	17	--
3	40	28	24	21	18	--
7	41	29	24	21	18	--
14	42	29	25	21	19	--
30	47	31	25	22	19	--

Magnitude and probability of seasonal low flow from November-February based on 39 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	34	24	20	17	14	--
3	35	25	21	18	15	--
7	36	25	21	18	15	--
14	37	26	22	19	16	--
30	38	28	24	21	18	--

Duration of daily mean flows based on 39 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
21	24	27	32	42	55	74	116
40%	30%	20%	15%	10%	5%	2%	1%
198	283	357	408	482	640	918	1,060

Magnitude and probability of annual high flow based on 39 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	942	1,320	1,570	1,880	2,110	--
3	895	1,240	1,460	1,740	1,940	--
7	814	1,120	1,320	1,560	1,740	--
15	736	994	1,160	1,360	1,500	--
30	647	864	1,000	1,180	1,300	--
60	523	685	795	937	1,050	--
90	468	587	663	758	828	--

Magnitude and probability of seasonal low flow from July-October based on 39 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	64	43	35	30	25	--
3	68	47	39	33	28	--
7	73	50	41	35	29	--
14	83	55	44	37	31	--
30	111	70	54	43	33	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	244	38	123	57	39
November	222	34	74	41	39
December	142	24	55	30	40
January	139	21	51	29	40
February	92	21	46	19	40
March	174	19	58	35	40
April	192	30	92	48	40
May	1,040	189	421	159	40
June	1,210	281	594	231	40
July	558	197	352	79	40
August	474	222	355	60	40
September	399	59	251	71	40
Annual	352	128	208	48	39

06021500 Ruby River at Laurin, Mont.
Site Number 16

LOCATION.--Lat 45°21'09", long 112°07'21" (NAD 27), in SW¼SE¼ sec.32, T.5 S., R.4 W., Madison County, on right bank 200 ft downstream from highway bridge in Laurin and 0.75 mi upstream from Alder Creek.

DRAINAGE AREA.--650 mi^2.

PERIOD OF RECORD.--14 years (1946-60).

GAGE.--Water-stage recorder. Altitude of gage is 5,045 ft (NGVD 29, from topographic map).

REMARKS.--Flow regulated by Ruby River Reservoir. Diversions upstream from station for irrigation of about 13,000 acres, of which about 2,000 acres lie below station. The flow of Clear Creek (secondary channel of Ruby River), which begins approximately 3 mi upstream and returns to the river approximately 3 mi downstream, is not included in discharge.

Magnitude and probability of annual low flow based on 14 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	18	11	9.4	8.1	--	--
3	18	12	9.5	8.2	--	--
7	20	13	11	9.0	--	--
14	22	14	12	10	--	--
30	23	15	13	11	--	--
60	26	17	14	12	--	--
90	32	20	17	14	--	--
120	40	26	21	18	--	--
183	46	30	25	21	--	--

Magnitude and probability of seasonal low flow from March-June based on 14 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	25	16	13	11	--	--
3	26	17	13	11	--	--
7	28	17	14	12	--	--
14	32	19	14	12	--	--
30	37	20	15	12	--	--

Magnitude and probability of seasonal low flow from November-February based on 15 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	20	12	9.4	8.2	--	--
3	21	12	9.6	8.3	--	--
7	23	14	11	9.1	--	--
14	25	15	12	10	--	--
30	27	17	13	11	--	--

Duration of daily mean flows based on 14 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
12	14	17	20	27	35	46	57
40%	30%	20%	15%	10%	5%	2%	1%
69	86	110	124	153	200	323	412

Magnitude and probability of annual high flow based on 14 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	341	565	728	945	--	--
3	316	518	669	874	--	--
7	273	451	591	793	--	--
15	218	360	475	644	--	--
30	176	283	372	509	--	--
60	141	219	284	384	--	--
90	122	190	246	331	--	--

Magnitude and probability of seasonal low flow from July-October based on 14 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	31	22	18	16	--	--
3	32	23	19	17	--	--
7	35	24	20	18	--	--
14	37	26	22	19	--	--
30	42	30	25	22	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	174	22	62	38	15
November	160	21	66	37	15
December	132	18	58	38	15
January	117	16	43	30	15
February	96	13	39	28	15
March	186	14	56	50	15
April	248	16	81	71	14
May	362	28	112	86	14
June	499	44	169	137	14
July	184	42	95	44	14
August	114	29	73	27	15
September	134	28	64	31	15
Annual	172	36	78	38	14

06023000 Ruby River near Twin Bridges, Mont.
Site Number 17

LOCATION.--Lat 45°30'28", long 112°19'48" (NAD 27), in SE¼NE¼NW¼ sec.10, T.4 S., R.6 W., Madison County, Hydrologic Unit 10020003, on right bank 300 ft upstream from county bridge, 1.2 mi upstream from mouth, and 2.6 mi south of Twin Bridges.
DRAINAGE AREA.--935 mi^2.
PERIOD OF RECORD.--August to October 1940, July 1941 to June 1943, July 1946 to September 1965, and July 1, 1979, to Sept. 30, 1981 (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 4,660 ft (NGVD 29, from topographic map).
REMARKS.--Diversions for irrigation of about 28,500 acres, of which about 500 acres lies downstream from station. Some regulation by Ruby River Reservoir (station number 06020500) 24 mi upstream from station.

Magnitude and probability of annual low flow
based on 20 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	41	14	7.3	4.0	--	--
3	44	15	7.8	4.2	--	--
7	57	21	11	5.6	--	--
14	75	31	16	8.0	--	--
30	85	48	32	22	--	--
60	106	69	53	41	--	--
90	117	82	67	56	--	--
120	146	101	80	64	--	--
183	166	121	99	83	--	--

Magnitude and probability of seasonal low flow from
March-June based on 23 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	48	16	8.4	4.5	--	--
3	52	18	9.2	4.9	--	--
7	68	25	13	6.7	--	--
14	91	37	19	9.4	--	--
30	107	56	36	24	--	--

Magnitude and probability of seasonal low flow from
November-February based on 23 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	109	85	73	64	--	--
3	111	87	76	67	--	--
7	114	94	85	79	--	--
14	120	101	92	86	--	--
30	128	109	101	95	--	--

Duration of daily mean flows based on 22 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
22	38	70	95	115	134	152	171
40%	30%	20%	15%	10%	5%	2%	1%
189	223	257	283	334	404	692	925

Magnitude and probability of annual high flow
based on 22 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	664	1,010	1,240	1,520	--	--
3	625	963	1,190	1,490	--	--
7	559	880	1,120	1,440	--	--
15	477	765	998	1,340	--	--
30	408	643	837	1,130	--	--
60	330	487	613	798	--	--
90	287	406	498	632	--	--

Magnitude and probability of seasonal low flow from
July-October based on 22 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	86	51	34	22	--	--
3	92	55	36	24	--	--
7	99	60	40	26	--	--
14	106	66	46	31	--	--
30	119	77	56	41	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	327	88	212	54	24
November	307	136	219	46	23
December	308	124	183	47	23
January	266	96	144	37	23
February	212	98	143	32	23
March	325	103	159	56	23
April	409	82	189	90	23
May	691	23	193	144	23
June	1,020	41	382	299	23
July	456	80	227	103	24
August	211	43	138	46	25
September	334	122	203	56	26
Annual	370	108	199	60	22

06024590 Wise River near Wise River, Mont.
Site Number 18

LOCATION.--Lat 45°42'17", long 113°01'50" (NAD 27), in SE¼NE¼SW¼ sec.36, T.1 S., R.12 W., Beaverhead County, Hydrologic Unit 10020004, Beaverhead National Forest, on left bank 6 ft downstream from abandoned bridge on old county road, 6.5 mi southwest of Wise River, and at river mile 9.1.
DRAINAGE AREA.--214 mi^2.
PERIOD OF RECORD.--October 1972 to September 1985 (discontinued).
GAGE.--Water-stage recorder and crest-stage gage. Altitude of gage is 6,112.52 ft (NGVD 29, from U.S. Forest Service bench mark).

Magnitude and probability of annual low flow based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	22	19	16	--	--
3	29	24	21	18	--	--
7	31	26	23	21	--	--
14	33	28	26	24	--	--
30	34	31	30	30	--	--
60	37	34	32	31	--	--
90	41	36	34	33	--	--
120	44	38	35	34	--	--
183	53	43	39	36	--	--

Magnitude and probability of seasonal low flow from March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	34	31	30	29	--	--
3	35	32	31	30	--	--
7	36	33	31	30	--	--
14	37	33	32	30	--	--
30	38	34	32	31	--	--

Magnitude and probability of seasonal low flow from November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	22	19	16	--	--
3	29	24	21	18	--	--
7	32	26	23	21	--	--
14	34	29	26	24	--	--
30	36	32	31	31	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
25	27	33	35	40	44	51	62
40%	30%	20%	15%	10%	5%	2%	1%
80	111	190	307	549	935	1,340	1,510

Magnitude and probability of annual high flow based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,530	1,990	2,210	2,400	--	--
3	1,400	1,870	2,090	2,310	--	--
7	1,280	1,730	1,960	2,200	--	--
15	1,150	1,540	1,720	1,900	--	--
30	985	1,330	1,500	1,660	--	--
60	748	995	1,110	1,210	--	--
90	569	749	831	903	--	--

Magnitude and probability of seasonal low flow from July-October based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	52	41	36	33	--	--
3	54	43	38	34	--	--
7	56	44	39	35	--	--
14	59	46	40	36	--	--
30	62	48	42	38	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	111	42	68	22	13
November	88	36	54	14	13
December	73	36	46	11	13
January	61	33	42	8.1	13
February	54	32	39	6.9	13
March	52	30	39	6.3	13
April	143	33	88	36	13
May	1,180	135	508	264	13
June	1,330	282	858	344	13
July	777	68	279	184	13
August	192	44	99	39	13
September	132	43	79	28	13
Annual	287	84	183	53	13

06025500 Big Hole River near Melrose, Mont.
Site Number 19

LOCATION.--Lat 45°31'36", long 112°42'03" (NAD 27), in SE¼SE¼SW¼ sec.34, T.3 S., R.9 W., Madison County, Hydrologic Unit 10020004, on left bank 50 ft downstream from bridge, on frontage road east of Interstate 15, 0.1 mi downstream from Rock Creek, 7 mi south of Melrose, and at river mile 31.1.
DRAINAGE AREA.--2,476 mi^2.
PERIOD OF RECORD.--October 1923 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.
GAGE.--Water-stage recorder. Altitude of gage is 5,032.87 ft (NGVD 29). Prior to June 14, 1927, water-stage recorder, and July 17, 1927, to Sept. 30, 1931, nonrecording gage, at site 1.7 mi upstream at different datum.
REMARKS.--Diversions for irrigation of about 136,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow
based on 78 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	195	136	109	89	70	58
3	206	146	118	97	77	65
7	221	156	126	104	82	69
14	237	167	134	109	85	71
30	264	186	148	121	93	77
60	296	215	178	150	123	106
90	327	247	210	183	156	139
120	362	281	245	218	191	174
183	382	296	260	233	206	190

Magnitude and probability of seasonal low flow from
March-June based on 79 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	323	262	235	214	192	178
3	333	274	247	227	206	193
7	348	291	265	246	227	214
14	367	306	281	263	246	235
30	430	341	307	283	261	248

Magnitude and probability of seasonal low flow from
November-February based on 78 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	215	165	143	127	111	102
3	232	180	157	140	124	114
7	255	200	176	157	139	128
14	276	219	193	174	155	143
30	304	243	216	195	174	160

Duration of daily mean flows based on 79 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
139	165	209	256	312	361	422	491
40%	30%	20%	15%	10%	5%	2%	1%
609	838	1,440	2,090	3,010	4,670	6,810	8,240

Magnitude and probability of annual high flow
based on 79 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	6,690	9,800	11,600	13,700	15,000	16,300
3	6,440	9,400	11,100	13,000	14,300	15,400
7	5,870	8,600	10,200	12,000	13,100	14,200
15	5,170	7,650	9,160	10,900	12,100	13,100
30	4,500	6,610	7,860	9,280	10,200	11,100
60	3,610	5,160	6,070	7,090	7,770	8,380
90	2,950	4,170	4,890	5,710	6,260	6,770

Magnitude and probability of seasonal low flow from
July-October based on 78 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	252	160	122	96	72	59
3	254	164	127	102	79	66
7	260	168	131	106	82	69
14	272	175	137	110	86	72
30	299	193	150	121	94	79

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,110	184	494	195	79
November	1,040	255	493	146	79
December	763	223	392	118	79
January	716	143	348	95	79
February	800	143	361	102	79
March	958	248	473	162	79
April	3,520	490	1,490	627	79
May	8,290	1,110	3,280	1,560	79
June	8,380	814	3,950	2,040	79
July	4,120	254	1,310	787	79
August	1,460	88	466	243	79
September	870	114	373	183	79
Annual	2,020	486	1,120	377	79

06026000 Birch Creek near Glen, Mont.
Site Number 20

LOCATION.--Lat 45°22'46", long 112°47'48" (NAD 27), in SE¼ SE¼ sec.23, T.5 S., R.10 W., Beaverhead County, Hydrologic Unit 10020004, Beaverhead National Forest, on left bank 2.3 mi downstream from Sheep Creek and 8.5 mi southwest of Glen.

DRAINAGE AREA.--36.0 mi^2 .

PERIOD OF RECORD.--28 years. May 1946 to September 1953, April 1955 to September 1976 (discontinued). Monthly discharge only for May 1946, published in WSP 1309. Prior to October 1950, published as "near Reichle."

GAGE.--Water-stage recorder. Concrete control since May 19, 1966. Altitude of gage is 5,862 ft (NGVD 29) from plane-table survey. Prior to Nov. 16, 1949, at site 1.5 mi upstream at different datum.

REMARKS.--Some regulation at lakes in headwaters. Minor diversions for irrigation upstream from station. Recorded diversions from Willow Creek basin into Birch Creek upstream from station.

Magnitude and probability of annual low flow
based on 26 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.0	2.0	1.7	1.5	1.3	--
3	3.3	2.3	1.9	1.6	1.4	--
7	3.8	2.8	2.4	2.1	1.8	--
14	4.4	3.3	2.9	2.6	2.3	--
30	5.6	4.5	4.1	3.8	3.5	--
60	6.6	5.6	5.2	4.9	4.6	--
90	7.3	6.1	5.5	5.1	4.7	--
120	8.3	6.9	6.3	5.8	5.3	--
183	10	8.5	7.7	7.1	6.5	--

Magnitude and probability of seasonal low flow from
March-June based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.9	4.4	3.8	3.3	2.8	--
3	6.1	4.7	4.0	3.5	3.0	--
7	6.4	4.9	4.3	3.8	3.3	--
14	6.7	5.3	4.6	4.1	3.6	--
30	7.5	5.9	5.1	4.6	4.0	--

Magnitude and probability of seasonal low flow from
November-February based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.0	2.1	1.7	1.5	1.3	--
3	3.4	2.3	1.9	1.7	1.4	--
7	4.1	2.9	2.4	2.1	1.8	--
14	4.8	3.5	3.0	2.6	2.3	--
30	6.2	4.9	4.4	3.9	3.5	--

Duration of daily mean flows based on 28 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
3.2	4.0	4.8	5.9	7.2	8.7	11	13
40%	30%	20%	15%	10%	5%	2%	1%
17	25	46	62	84	120	168	188

Magnitude and probability of annual high flow
based on 28 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	184	247	286	332	364	--
3	173	227	258	292	315	--
7	164	213	239	266	282	--
15	148	188	207	225	234	--
30	130	165	181	196	204	--
60	103	127	138	147	152	--
90	85	103	109	115	118	--

Magnitude and probability of seasonal low flow from
July-October based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	9.1	6.5	5.3	4.4	3.5	--
3	9.4	6.8	5.6	4.6	3.7	--
7	9.9	7.3	6.0	5.0	4.0	--
14	10	7.6	6.3	5.4	4.4	--
30	11	8.6	7.4	6.5	5.5	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	31	9.1	17	5.4	28
November	21	5.8	11	3.6	28
December	13	3.8	8.0	2.3	28
January	12	5.2	8.0	1.8	28
February	12	4.3	7.3	1.9	28
March	15	4.2	8.0	2.3	28
April	21	5.7	12	4.5	29
May	130	19	53	26	30
June	190	38	115	36	30
July	164	23	67	27	30
August	58	8.3	29	11	30
September	22	6.6	13	3.9	30
Annual	39	16	29	5.9	28

06026500 Jefferson River near Twin Bridges, Mont.
Site Number 21

LOCATION.--Lat 45°36'45", long 112°19'47" (NAD 27), in SE¼SE¼SW¼ sec.34, T.2 S., R.6 W., Madison County, Hydrologic Unit 10020005, on left bank 0.4 mi upstream from Hells Canyon Creek, 4.8 mi north of Twin Bridges, and at river mile 2,399.7.

DRAINAGE AREA.--7,632 mi^2.

PERIOD OF RECORD.--August 1940 to September 1943, October 1957 to September 1972, May 1994 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 4,560 ft (NGVD 29). August 1940 to September 1943, nonrecording gage at site 500 ft downstream at different datum. October 1957 to June 3, 1972, water-stage recorder at site 250 ft downstream and June 4 to September 30, 1972, nonrecording gage 6.5 mi downstream at different datums.

REMARKS.--Some regulation by Clark Canyon (station number 06015300), Lima, and Ruby River Reservoirs. Diversion for irrigation of about 310,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 15 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	721	473	348	257	--	--
3	745	491	363	270	--	--
7	791	515	381	285	--	--
14	842	548	407	306	--	--
30	957	635	468	346	--	--
60	1,090	747	561	421	--	--
90	1,210	867	679	532	--	--
120	1,320	986	796	644	--	--
183	1,350	1,050	894	766	--	--

Magnitude and probability of seasonal low flow from March-June based on 17 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,090	919	833	765	--	--
3	1,120	942	857	789	--	--
7	1,160	995	909	840	--	--
14	1,220	1,030	937	865	--	--
30	1,310	1,060	957	880	--	--

Magnitude and probability of seasonal low flow from November-February based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	940	726	591	478	--	--
3	982	761	620	503	--	--
7	1,050	831	685	560	--	--
14	1,110	907	779	669	--	--
30	1,160	965	848	747	--	--

Duration of daily mean flows based on 17 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
286	342	567	796	988	1,160	1,300	1,450
40%	30%	20%	15%	10%	5%	2%	1%
1,690	1,990	2,570	3,410	4,920	7,230	9,630	11,300

Magnitude and probability of annual high flow based on 17 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	10,600	13,900	15,000	15,900	--	--
3	10,200	13,400	14,500	15,200	--	--
7	9,620	12,500	13,500	14,100	--	--
15	8,840	11,500	12,400	13,000	--	--
30	7,750	10,000	10,700	11,200	--	--
60	6,130	7,720	8,250	8,600	--	--
90	5,080	6,300	6,720	7,000	--	--

Magnitude and probability of seasonal low flow from July-October based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	726	476	352	262	--	--
3	750	498	368	275	--	--
7	798	522	387	291	--	--
14	845	556	412	312	--	--
30	960	642	473	354	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,050	730	1,350	410	17
November	2,020	873	1,480	379	17
December	1,860	708	1,250	328	17
January	1,420	641	1,130	253	17
February	1,690	627	1,160	259	17
March	2,090	622	1,300	394	17
April	4,450	1,100	2,220	930	17
May	7,020	1,500	3,970	1,800	18
June	9,820	1,300	5,970	3,000	18
July	4,480	527	2,170	1,230	18
August	1,700	302	921	480	18
September	2,110	288	1,050	518	18
Annual	2,820	955	2,050	602	17

06027000 Jefferson River near Silver Star, Mont.
Site Number 22

LOCATION.--Lat 45°38'37", long 112°18'41" (NAD 27), in SW¼ sec.23, T.2 S., R.6 W., Madison County, on highway bridge 0.5 mi west of Ironrod, 4 mi southwest of Silverstar, and 7 mi downstream from the confluence of the Beaverhead and Big Hole Rivers.
DRAINAGE AREA.--7,683 mi^2 (revised).
PERIOD OF RECORD.--25 years (1910-16, 1920-39).
GAGE.--Wire-weight gage. Altitude of gage is 4,550 ft (NGVD 29, by barometer). Aug. 11, 1910, to Sept. 30, 1916, and July 22 to Aug. 26, 1920, staff gage.
REMARKS.--Diversions for irrigation of about 300,000 acres upstream from station.

Magnitude and probability of annual low flow based on 23 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	284	122	76	51	--	--
3	297	128	80	54	--	--
7	317	137	85	57	--	--
14	348	152	94	62	--	--
30	412	183	112	72	--	--
60	506	233	144	93	--	--
90	612	305	198	134	--	--
120	735	405	281	203	--	--
183	870	568	443	356	--	--

Magnitude and probability of seasonal low flow from March-June based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	842	607	509	438	369	--
3	859	632	536	468	400	--
7	898	680	588	522	456	--
14	952	765	688	634	581	--
30	1,060	882	812	763	716	--

Magnitude and probability of seasonal low flow from November-February based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	763	527	421	344	269	--
3	772	532	424	346	271	--
7	785	540	432	354	278	--
14	804	567	461	384	307	--
30	846	621	519	442	366	--

Duration of daily mean flows based on 25 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
86	120	258	435	677	851	1,000	1,170
40%	30%	20%	15%	10%	5%	2%	1%
1,360	1,620	2,140	2,700	3,640	5,630	8,510	10,700

Magnitude and probability of annual high flow based on 25 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	8,210	12,300	14,800	17,500	19,200	--
3	7,770	11,700	14,000	16,600	18,300	--
7	7,100	10,700	12,900	15,500	17,200	--
15	6,260	9,570	11,600	14,100	15,800	--
30	5,490	8,280	10,000	12,100	13,600	--
60	4,410	6,400	7,620	9,030	10,000	--
90	3,640	5,190	6,150	7,280	8,070	--

Magnitude and probability of seasonal low flow from July-October based on 23 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	288	125	78	52	--	--
3	302	133	83	57	--	--
7	326	144	90	60	--	--
14	360	157	99	66	--	--
30	429	188	116	76	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,970	240	1,040	514	25
November	2,080	562	1,290	400	25
December	2,250	527	1,100	389	25
January	1,550	394	958	265	25
February	1,600	357	939	275	25
March	2,180	781	1,170	326	25
April	3,720	1,020	2,240	705	25
May	7,830	1,330	3,900	1,720	25
June	10,500	1,050	4,840	3,000	25
July	5,120	177	1,630	1,230	25
August	2,030	78	652	494	27
September	1,890	92	800	526	27
Annual	2,950	698	1,720	613	25

06033000 Boulder River near Boulder, Mont.
Site Number 23

LOCATION.--Lat 46°12'40", long 112°05'27" (NAD 27), in SE¼NE¼SW¼ sec.3, T.5 N., R.4 W., Jefferson County, Hydrologic Unit 10020006, on left bank 40 ft downstream from county bridge, 1.1 mile downstream from Muskrat Creek, 2.0 mi southeast of Boulder, and at river mile 44.1.

DRAINAGE AREA.--381 mi^2.

PERIOD OF RECORD.--May 1929 to December 1932, March 1934 to September 1972, October 1984 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1729: 1931.

GAGE.--Water-stage recorder. Altitude of gage is 4,810 ft (NGVD 29). Prior to Aug. 29, 1946, nonrecording gage at present site and datum.

REMARKS.--Diversions for irrigation of about 3,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 58 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	7.3	5.2	3.7	1.4	0.00
3	13	7.7	5.6	4.1	1.7	.00
7	13	8.2	6.2	4.7	3.5	2.8
14	14	9.0	6.9	5.5	4.2	3.4
30	16	10	7.9	6.3	4.9	4.1
60	19	12	9.6	7.6	5.9	4.9
90	23	15	12	9.5	7.3	6.0
120	26	18	14	11	8.7	7.3
183	28	19	16	13	11	9.4

Magnitude and probability of seasonal low flow from
March-June based on 60 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	20	17	14	12	10
3	28	21	18	15	12	11
7	30	23	20	17	15	13
14	32	25	22	20	18	17
30	42	31	27	24	21	19

Magnitude and probability of seasonal low flow from
November-February based on 59 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	18	11	7.2	4.7	2.7	1.7
3	20	12	7.9	5.1	2.8	2.0
7	22	13	8.8	5.6	3.7	3.0
14	22	14	11	8.3	5.9	4.6
30	24	17	13	11	8.4	7.0

Duration of daily mean flows based on 59 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
6.1	7.3	11	16	22	27	31	38
40%	30%	20%	15%	10%	5%	2%	1%
45	69	148	228	344	547	865	1,060

Magnitude and probability of annual high flow
based on 59 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	961	1,430	1,740	2,130	2,410	2,690
3	879	1,290	1,560	1,890	2,130	2,360
7	793	1,150	1,380	1,640	1,820	1,990
15	685	998	1,190	1,420	1,580	1,730
30	575	837	1,000	1,190	1,330	1,460
60	443	616	716	830	906	975
90	344	478	557	649	710	768

Magnitude and probability of seasonal low flow from
July-October based on 60 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	7.5	5.4	3.9	1.5	0.00
3	14	7.9	5.8	4.2	1.9	.00
7	14	8.5	6.4	4.9	3.6	2.9
14	15	9.2	7.1	5.7	4.5	3.6
30	17	10	8.1	6.5	5.1	4.3

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	113	5.8	37	21	60
November	71	9.1	35	12	60
December	53	7.4	29	9.2	60
January	42	10	26	8.3	59
February	68	7.7	31	12	59
March	121	21	48	22	60
April	511	46	166	96	60
May	961	126	461	182	61
June	1,030	70	407	252	61
July	374	11	96	82	61
August	194	7.1	31	28	61
September	156	5.7	29	26	61
Annual	211	48	117	42	59

06034500 Jefferson River at Sappington, Mont.
Site Number 24

LOCATION.--Lat 45°48'15", long 111°45'05" (NAD 27), in SE¼ sec.29, T.1 N., R.1 W., Gallatin County, on right bank upstream side of bridge on State Highway 287, 1 mi northeast of Sappington, 5.5 mi upstream from Willow Creek, and at river mi 18.0.

DRAINAGE AREA.--9,277 mi^2.

PERIOD OF RECORD.--36 years (1896-1905, 1938-65).

REVISED RECORDS.--WSP 1389: 1899, 1900, 1902(M), 1904(M). WSP 1559: Drainage area.

GAGE.--Digital water-stage recorder. Altitude of gage is 4,170 ft (NGVD 29, from topographic map). Prior to Sept. 17, 1896, staff gage and Sept. 17, 1896, to Dec. 31, 1905, chain gage at railroad bridge 1.5 mi upstream at different datum. Aug. 16, 1938, to Sept. 30, 1964, graphic water-stage recorder at present site and datum.

REMARKS.--Diversions for irrigation of about 355,000 acres upstream from station. Some regulation by Clark Canyon Reservoir (station number 06015300) at Lima, and Ruby River Reservoir.

Magnitude and probability of annual low flow based on 28 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	431	285	223	178	136	--
3	446	293	227	180	136	--
7	475	307	234	184	136	--
14	518	328	248	192	140	--
30	595	376	282	217	156	--
60	743	495	377	291	209	--
90	882	611	483	387	294	--
120	1,010	767	656	573	488	--
183	1,130	930	839	769	698	--

Magnitude and probability of seasonal low flow from March-June based on 31 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,080	784	638	526	413	--
3	1,120	841	698	586	472	--
7	1,180	927	796	692	581	--
14	1,210	1,020	928	861	792	--
30	1,400	1,190	1,090	1,010	932	--

Magnitude and probability of seasonal low flow from November-February based on 29 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	709	513	434	378	323	--
3	746	555	476	419	363	--
7	799	614	537	482	428	--
14	907	709	620	552	483	--
30	1,020	838	753	687	619	--

Duration of daily mean flows based on 30 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
247	351	521	671	902	1,110	1,250	1,400
40%	30%	20%	15%	10%	5%	2%	1%
1,610	1,970	2,630	3,320	4,360	6,110	8,350	10,200

Magnitude and probability of annual high flow based on 30 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	8,400	11,300	13,300	15,700	17,600	--
3	8,210	11,000	12,800	15,200	16,900	--
7	7,680	10,400	12,200	14,400	16,100	--
15	6,870	9,380	11,000	13,100	14,700	--
30	6,140	8,230	9,570	11,200	12,500	--
60	4,970	6,550	7,500	8,600	9,370	--
90	4,200	5,480	6,250	7,140	7,750	--

Magnitude and probability of seasonal low flow from July-October based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	447	291	225	180	136	--
3	458	297	229	181	137	--
7	481	309	236	185	137	--
14	521	332	249	194	141	--
30	598	377	283	221	157	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,340	776	1,360	465	30
November	3,200	1,060	1,650	409	30
December	2,710	999	1,420	344	30
January	1,890	545	1,130	275	31
February	2,850	829	1,280	402	31
March	2,060	924	1,460	256	31
April	5,030	1,080	2,580	947	31
May	8,060	1,210	4,520	1,930	31
June	12,200	1,880	5,360	2,230	31
July	3,760	215	1,870	903	31
August	1,610	166	709	349	32
September	1,880	497	921	341	32
Annual	3,350	1,170	2,020	499	30

06035000 Willow Creek near Harrison, Mont.
Site Number 25

LOCATION.--Lat 46°43'23", long 111°44'25" (NAD 27), in SE¼SW¼NW¼ sec.28, T.1 S., R.1 W., Madison County, Hydrologic Unit 10020005, on right bank 2.2 mi upstream from Willow Creek Dam, 2.5 mi northeast of Harrison, and at river mile 13.6.

DRAINAGE AREA.--83.8 mi^2.

PERIOD OF RECORD.--April 1938 to September 1982, October 1982 to October 2002 (seasonal records only, discontinued). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.-- WSP 1559: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,750 ft (NGVD 29). Prior to Oct. 8, 1946, water-stage recorder at datum 0.22 ft higher, with different concrete control.

REMARKS.--Diversions for irrigation of about 12,500 acres of which 3,500 acres are in Norwegian Creek drainage.

Magnitude and probability of annual low flow
based on 43 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.7	2.9	2.3	2.0	1.6	--
3	4.9	3.0	2.4	2.0	1.7	--
7	5.2	3.2	2.5	2.1	1.7	--
14	5.7	3.5	2.7	2.2	1.8	--
30	6.7	3.9	3.0	2.4	1.9	--
60	9.1	4.9	3.6	2.8	2.1	--
90	13	6.5	4.5	3.3	2.3	--
120	17	9.6	6.8	5.1	3.6	--
183	22	15	12	9.4	7.3	--

Magnitude and probability of seasonal low flow from
March-June based on 44 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	14	8.4	6.1	4.5	3.1	--
3	16	9.3	6.6	4.8	3.2	--
7	18	11	7.7	5.6	3.7	--
14	21	13	9.0	6.5	4.3	--
30	27	18	13	9.8	6.8	--

Magnitude and probability of seasonal low flow from
November-February based on 44 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	14	9.6	7.4	5.8	4.3	--
3	15	10	8.0	6.4	4.8	--
7	16	11	9.3	7.7	6.1	--
14	18	13	11	8.8	7.0	--
30	21	16	14	12	10	--

Duration of daily mean flows based on 44 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
2.2	2.8	3.9	5.8	12	19	25	30
40%	30%	20%	15%	10%	5%	2%	1%
36	43	57	65	90	142	215	265

Magnitude and probability of annual high flow
based on 44 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	200	304	379	478	555	--
3	185	279	343	427	490	--
7	166	251	308	381	435	--
15	144	221	274	340	390	--
30	121	190	239	305	357	--
60	91	141	178	228	268	--
90	76	116	144	181	210	--

Magnitude and probability of seasonal low flow from
July-October based on 64 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.8	3.0	2.4	2.0	1.7	0.85
3	5.0	3.2	2.4	2.1	1.7	.86
7	5.3	3.3	2.6	2.1	1.8	.94
14	5.8	3.6	2.8	2.3	1.8	1.0
30	6.8	4.0	3.1	2.5	2.0	1.1

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	80	2.0	29	19	64
November	56	9.4	34	12	44
December	47	12	30	8.0	44
January	44	10	25	6.3	44
February	61	12	27	9.0	44
March	45	18	32	5.8	44
April	72	11	42	13	64
May	167	11	62	36	65
June	300	10	111	71	65
July	278	1.5	61	54	65
August	61	1.1	12	13	65
September	62	2.0	19	16	65
Annual	76	19	41	15	44

06036500 Willow Creek near Willow Creek, Mont.
Site Number 26

LOCATION.--Lat 45°45'00", long 111°39'30" (NAD 27), in SW¼ sec.18, T.1 S., R.1 E., Gallatin County, 3 mi downstream from Willow Creek Reservoir, 5.5 mi south of town of Willow Creek, and 6 mi upstream from mouth.

DRAINAGE AREA.--165 mi^2 (revised).

PERIOD OF RECORD.--16 years (1919-32, 1947-50).

GAGE.--Water-stage recorder. Altitude of gage is 4,340 ft (NGVD 29, from topographic map). Prior to June 14, 1920, staff gage at site 0.5 mi downstream at different datum. June 14, 1920, to Dec. 9, 1932, chain gage at present site at different datum. May 9 to June 30, 1946, staff gage at site 500 ft downstream at datum 1.5 ft higher. July 1, 1946, to Sept. 30, 1947, wire-weight gage at present site and datum. Oct. 1, 1947, to Nov. 28, 1949, staff gage at site 0.5 mi downstream at different datum.

REMARKS.--Regulation by Willow Creek Reservoir since 1937. Diversions for irrigation of about 12,800 acres upstream from station.

Magnitude and probability of annual low flow
based on 11 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	6.6	4.7	3.5	--	--
3	13	8.3	6.7	5.6	--	--
7	14	9.7	8.1	7.0	--	--
14	15	11	9.0	7.8	--	--
30	18	14	12	11	--	--
60	21	17	15	13	--	--
90	26	21	18	16	--	--
120	29	23	20	18	--	--
183	33	25	21	18	--	--

Magnitude and probability of seasonal low flow from
March-June based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	28	15	10	7.2	--	--
3	30	17	12	8.6	--	--
7	31	20	15	11	--	--
14	34	23	18	14	--	--
30	40	29	23	18	--	--

Magnitude and probability of seasonal low flow from
November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	17	9.3	6.1	4.1	--	--
3	18	12	9.2	7.2	--	--
7	19	14	11	9.1	--	--
14	20	15	12	10	--	--
30	22	18	16	15	--	--

Duration of daily mean flows based on 12 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
7.6	9.1	12	16	23	28	32	37
40%	30%	20%	15%	10%	5%	2%	1%
43	52	65	79	94	136	208	249

Magnitude and probability of annual high flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	208	299	357	--	--	--
3	194	278	335	--	--	--
7	177	254	305	--	--	--
15	151	213	256	--	--	--
30	122	174	212	--	--	--
60	98	141	173	--	--	--
90	85	118	139	--	--	--

Magnitude and probability of seasonal low flow from
July-October based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	7.7	6.2	5.2	--	--
3	13	8.5	6.9	5.9	--	--
7	14	9.7	8.2	7.2	--	--
14	17	12	9.1	8.0	--	--
30	20	14	12	11	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	88	10	38	20	14
November	60	21	41	13	14
December	51	15	34	12	14
January	40	15	26	6.7	13
February	40	15	28	9.6	13
March	60	26	44	8.0	13
April	110	17	58	23	13
May	146	15	92	40	13
June	242	42	112	71	12
July	140	28	57	30	13
August	49	11	26	12	13
September	83	7.0	28	18	14
Annual	64	23	48	11	12

06036650 Jefferson River near Three Forks, Mont.
Site Number 27

LOCATION.--Lat 45°53'52", long 111°35'45" (NAD 27), in SW¼SW¼NW¼ sec.27, T.2 N., R.1 E., Broadwater County, Hydrologic Unit 10020005, on left bank 50 ft downstream from bridge on U.S. Highway 10, 2.5 mi northwest of Three Forks, and at river mile 2,329.3.
DRAINAGE AREA.--9,532 mi^2.
PERIOD OF RECORD.--October 1978 to current year (2002).
GAGE.--Water-stage recorder. Altitude of gage is 4,076.76 ft (NGVD 29).
REMARKS.--Some regulation by Ruby River Reservoir (station number 06020500) and Clark Canyon Reservoir (station number 06015300). Diversions for irrigation of about 390,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

Magnitude and probability of annual low flow
based on 23 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	402	187	118	77	--	--
3	422	193	120	79	--	--
7	454	204	126	82	--	--
14	495	218	133	86	--	--
30	584	257	155	99	--	--
60	749	358	225	147	--	--
90	867	490	353	266	--	--
120	1,030	647	502	403	--	--
183	1,160	811	672	576	--	--

Magnitude and probability of seasonal low flow from
March-June based on 24 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,030	661	510	405	--	--
3	1,080	705	549	440	--	--
7	1,160	782	620	505	--	--
14	1,290	949	799	689	--	--
30	1,490	1,150	994	872	--	--

Magnitude and probability of seasonal low flow from
November-February based on 23 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	649	450	367	309	--	--
3	711	512	430	373	--	--
7	822	624	540	479	--	--
14	947	724	624	550	--	--
30	1,080	849	747	670	--	--

Duration of daily mean flows based on 24 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
145	211	380	614	885	1,110	1,310	1,500
40%	30%	20%	15%	10%	5%	2%	1%
1,780	2,050	2,580	2,990	3,990	6,020	9,060	10,900

Magnitude and probability of annual high flow
based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	7,300	12,000	15,300	19,600	--	--
3	7,080	11,600	14,800	19,000	--	--
7	6,570	10,800	13,700	17,500	--	--
15	5,790	9,660	12,400	16,100	--	--
30	4,980	8,360	10,800	14,100	--	--
60	4,150	6,760	8,640	11,100	--	--
90	3,590	5,700	7,190	9,150	--	--

Magnitude and probability of seasonal low flow from
July-October based on 23 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	450	192	120	79	--	--
3	458	199	125	80	--	--
7	479	208	130	85	--	--
14	516	224	136	88	--	--
30	600	267	158	104	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	3,160	803	1,610	647	24
November	2,800	1,040	1,650	523	24
December	1,990	805	1,360	409	24
January	1,930	727	1,240	345	24
February	1,960	805	1,310	354	24
March	2,300	824	1,550	386	24
April	4,440	1,370	2,390	742	24
May	7,680	990	3,790	2,000	24
June	11,400	988	5,110	3,270	24
July	5,500	352	2,090	1,690	24
August	3,030	59	920	768	24
September	3,300	262	1,160	774	24
Annual	3,650	996	2,020	812	24

06036905 Firehole River near West Yellowstone, Mont.
Site Number 28

LOCATION.--Lat 44°37'13", long 110°51'44" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank 1.6 mi south of Madison Junction, 12 mi east of West Yellowstone, and at river mile 1.8.
DRAINAGE AREA.--282 mi^2.
PERIOD OF RECORD.--October 1983 to March 1996, September 2002 (reactivated).
GAGE.--Water-stage recorder. Altitude of gage is 7,050 ft (NGVD 29).
REMARKS.--No regulation or diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	228	209	201	195	--	--
3	233	213	205	199	--	--
7	236	216	208	201	--	--
14	241	220	210	203	--	--
30	248	225	214	206	--	--
60	253	229	217	209	--	--
90	256	232	220	211	--	--
120	260	235	223	214	--	--
183	264	239	227	218	--	--

Magnitude and probability of seasonal low flow from March-June based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	245	227	219	213	--	--
3	247	230	222	217	--	--
7	250	233	226	220	--	--
14	257	239	232	226	--	--
30	265	248	242	237	--	--

Magnitude and probability of seasonal low flow from November-February based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	242	220	209	200	--	--
3	247	226	215	206	--	--
7	251	230	219	211	--	--
14	254	233	222	214	--	--
30	257	236	225	217	--	--

Duration of daily mean flows based on 12 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
192	194	199	209	228	246	265	289
40%	30%	20%	15%	10%	5%	2%	1%
314	339	364	376	439	522	691	755

Magnitude and probability of annual high flow based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	733	933	1,070	--	--	--
3	685	889	1,030	--	--	--
7	638	829	965	--	--	--
15	586	748	862	--	--	--
30	539	674	763	--	--	--
60	470	562	619	--	--	--
90	419	492	538	--	--	--

Magnitude and probability of seasonal low flow from July-October based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	252	223	209	199	--	--
3	254	224	210	200	--	--
7	255	226	212	202	--	--
14	258	228	214	204	--	--
30	260	230	216	207	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	356	225	283	42	13
November	348	227	278	40	13
December	316	220	269	33	13
January	298	222	264	26	13
February	304	226	263	25	13
March	336	239	272	27	13
April	398	276	334	35	12
May	612	367	493	86	12
June	756	273	435	150	12
July	415	221	300	60	12
August	371	212	275	48	12
September	368	217	275	44	12
Annual	399	264	311	40	12

06037000 Gibbon River near West Yellowstone, Mont.
Site Number 29

LOCATION.--Lat 44°38'58", long 111°47'02" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank, 0.6 mi downstream from Canyon Creek, 4.0 mi east of Madison Junction, 16.7 mi east of West Yellowstone, and at river mile 15.6.

DRAINAGE AREA.--118 mi^2.

PERIOD OF RECORD.--June 1913 to December 1916 (incomplete record most years), October 1983 to March 1996 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 6,940 ft (NGVD 29, from topographic map). Nonrecording gage at site 0.1 mi downstream at different datum, 1913-16.

REMARKS.--No regulation or diversions upstream from station.

Magnitude and probability of annual low flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	66	61	59	57	--	--
3	67	63	60	58	--	--
7	69	64	61	59	--	--
14	71	66	63	61	--	--
30	73	68	65	62	--	--
60	76	71	68	65	--	--
90	78	73	69	66	--	--
120	80	74	70	67	--	--
183	83	76	72	69	--	--

Magnitude and probability of seasonal low flow from
March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	71	65	61	58	--	--
3	73	67	63	60	--	--
7	74	68	64	61	--	--
14	76	69	65	62	--	--
30	78	71	67	64	--	--

Magnitude and probability of seasonal low flow from
November-February based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	68	63	60	58	--	--
3	70	64	62	60	--	--
7	71	66	64	62	--	--
14	73	68	66	63	--	--
30	75	70	67	65	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
53	60	67	70	75	80	85	90
40%	30%	20%	15%	10%	5%	2%	1%
100	115	133	159	185	262	378	529

Magnitude and probability of annual high flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	519	837	1,060	1,350	--	--
3	481	766	960	1,210	--	--
7	435	680	844	1,050	--	--
15	373	565	693	851	--	--
30	314	455	544	651	--	--
60	244	332	387	454	--	--
90	207	272	311	358	--	--

Magnitude and probability of seasonal low flow from
July-October based on 15 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	78	70	67	64	--	--
3	79	71	67	64	--	--
7	79	72	68	66	--	--
14	80	73	70	68	--	--
30	83	75	71	69	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	128	69	93	17	16
November	115	70	87	12	16
December	104	67	83	9.1	16
January	95	64	80	7.5	16
February	95	62	76	7.6	16
March	112	62	81	12	16
April	230	96	136	36	15
May	532	123	289	123	13
June	362	99	193	86	13
July	216	73	128	39	15
August	154	66	101	24	16
September	123	66	93	16	16
Annual	159	82	118	21	13

06037500 Madison River near West Yellowstone, Mont.
Site Number 30

LOCATION.--Lat 44°39'25", long 111°04'03" (NAD 27), in NE¼NW¼SW¼ sec.36, T.13 S., R.5 E., Gallatin County, Hydrologic Unit 10020007, Yellowstone National Park, on left bank 0.7 mi downstream from Montana-Wyoming State line, 1.5 mi east of West Yellowstone, 16.4 mi downstream from Gibbon River, and at river mile 132.7.

DRAINAGE AREA.--420 mi^2.

PERIOD OF RECORD.--June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 6,650 ft (NGVD 29). Prior to Oct. 20, 1918, nonrecording gage, and Oct. 20, 1918, to June 29, 1930, nonrecording gage or water-stage recorder at sites 2.5 mi upstream at different datums. Supplementary nonrecording gage at site 0.3 mi downstream at different datum used at time during 1927-30.

REMARKS.--No regulation or diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 71 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	339	300	281	267	252	242
3	346	308	290	276	261	252
7	356	318	299	285	269	259
14	363	324	304	289	273	262
30	372	331	311	295	279	268
60	387	342	320	302	283	271
90	396	349	326	308	289	276
120	401	353	330	311	292	279
183	408	357	334	315	295	283

Magnitude and probability of seasonal low flow from
March-June based on 75 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	375	337	319	304	287	277
3	379	341	323	308	291	280
7	384	346	327	312	296	286
14	391	352	333	317	301	290
30	400	361	342	328	313	303

Magnitude and probability of seasonal low flow from
November-February based on 75 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	350	307	288	272	256	246
3	359	318	299	284	269	260
7	368	329	311	298	284	275
14	377	337	318	304	289	280
30	385	344	325	310	295	286

Duration of daily mean flows based on 75 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
274	278	292	314	358	395	424	453
40%	30%	20%	15%	10%	5%	2%	1%
482	512	590	671	752	1,000	1,300	1,470

Magnitude and probability of annual high flow
based on 75 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,290	1,660	1,900	2,200	2,420	2,640
3	1,220	1,570	1,810	2,110	2,340	2,570
7	1,150	1,490	1,710	1,990	2,200	2,410
15	1,060	1,370	1,570	1,820	2,000	2,170
30	968	1,240	1,410	1,630	1,790	1,940
60	827	1,030	1,160	1,320	1,430	1,540
90	723	891	994	1,120	1,210	1,300

Magnitude and probability of seasonal low flow from
July-October based on 75 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	377	326	304	288	271	261
3	380	328	305	288	271	261
7	384	330	307	290	273	262
14	388	334	311	294	277	266
30	397	341	317	299	281	270

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	710	297	434	84	76
November	697	297	425	71	76
December	641	304	416	65	75
January	586	304	405	61	75
February	572	303	399	52	75
March	539	313	406	52	75
April	671	369	496	78	75
May	1,720	388	851	218	75
June	1,480	341	815	291	76
July	917	282	500	134	78
August	759	273	434	92	79
September	704	282	427	86	79
Annual	789	337	499	86	75

06038500 Madison River below Hebgen Lake, near Grayling, Mont.
Site Number 31

LOCATION.--Lat 44°52'00", long 111°20'15" (NAD 27), NE¼NE¼NE¼ sec.22, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, Gallatin National Forest, on right bank 1,500 ft downstream from Hebgen Dam, 8 mi northwest of Grayling, 17 mi upstream from West Fork, and at river mile 108.8.
DRAINAGE AREA.--905 mi^2.
PERIOD OF RECORD.--June 1909 to current year (2002). Prior to October 1938 adjusted runoff only, published in WSP 1309. Prior to October 1949, published as "below Hebgen Reservoir."
REVISED RECORDS.--WSP 1509: 1948. WSP 1559: Drainage area. WSP 1629: 1943. WSP 1709: 1959. WSP 1729: 1943.
GAGE.--Water-stage recorder. Altitude of gage is 6,448.47 ft (NGVD 29, after 1959 earthquake). Prior to July 13, 1943, nonrecording gage in stilling well.
REMARKS.--Flow completely regulated by Hebgen Lake (station number 06038000). Diversions for irrigation of about 1,100 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow based on 63 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	281	106	56	32	15	9.1
3	295	112	60	34	16	9.7
7	313	121	65	37	18	11
14	346	138	76	44	22	13
30	443	192	108	62	31	18
60	550	321	231	172	120	93
90	652	433	338	271	206	170
120	814	574	463	380	299	251
183	918	713	617	543	468	421

Magnitude and probability of seasonal low flow from March-June based on 64 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	301	109	58	32	16	9.3
3	314	115	61	34	17	9.9
7	333	125	67	37	18	11
14	370	143	78	44	22	13
30	492	213	120	69	34	20

Magnitude and probability of seasonal low flow from November-February based on 63 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	729	517	401	312	225	176
3	749	541	423	330	237	185
7	773	574	453	355	257	201
14	797	605	483	382	278	218
30	844	662	533	422	305	237

Duration of daily mean flows based on 64 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
79	169	303	499	661	791	889	986
40%	30%	20%	15%	10%	5%	2%	1%
1,080	1,250	1,440	1,580	1,850	2,110	2,620	2,940

Magnitude and probability of annual high flow based on 64 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	2,390	3,000	3,380	3,840	4,170	4,480
3	2,330	2,920	3,290	3,740	4,070	4,390
7	2,250	2,820	3,160	3,580	3,880	4,170
15	2,120	2,620	2,920	3,270	3,510	3,750
30	1,950	2,360	2,600	2,860	3,040	3,210
60	1,660	2,000	2,190	2,410	2,560	2,700
90	1,450	1,700	1,850	2,020	2,130	2,230

Magnitude and probability of seasonal low flow from July-October based on 63 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	676	432	306	215	135	94
3	720	473	335	235	145	100
7	774	516	364	252	153	104
14	846	586	415	285	169	112
30	899	671	535	426	315	251

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,480	215	1,360	478	64
November	2,540	501	1,400	461	64
December	2,840	410	986	310	64
January	1,410	180	900	212	64
February	1,900	181	839	243	64
March	1,570	291	838	298	64
April	2,340	217	929	502	64
May	2,490	46	857	556	64
June	2,940	96	1,270	705	64
July	2,060	503	1,030	275	64
August	1,720	662	1,080	219	64
September	1,690	368	1,140	278	64
Annual	1,560	506	1,050	190	64

06038800 Madison River at Kirby Ranch, near Cameron, Mont.
Site Number 32

LOCATION.--Lat 44°53'22", long 111°34'46" (NAD 27), in NE¼NE¼SE¼ sec.10, T.11 S., R.1 E., Madison County, Hydrologic Unit 10020007, 75 ft upstream from county bridge, 0.2 mi upstream from West Fork Madison River, and 22 mi south of Cameron, and at river mile 89.8.

DRAINAGE AREA.--1,065 mi^2.

PERIOD OF RECORD.--September 1959 to September 1963, May 1978 to September 1994 (seasonal records only), October 1995 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 5,860 ft (NGVD 29). Aug. 31, 1959, to Oct. 2, 1959, nonrecording gage 75 ft downstream at datum 0.96 ft lower. Oct. 3, 1959, to September 1963, water-stage recorder at present site and datum. May 1978 to September 1994, nonrecording gage 75 ft downstream at present datum.

REMARKS.--Flow regulated by Hebgen Lake (station number 06038000). Diversions for irrigation of about 1,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 10 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	734	429	310	232	--	--
3	738	433	313	234	--	--
7	744	440	320	240	--	--
14	761	463	343	262	--	--
30	811	523	401	316	--	--
60	879	596	469	378	--	--
90	947	665	537	443	--	--
120	1,040	743	604	502	--	--
183	1,130	841	709	610	--	--

Magnitude and probability of seasonal low flow from
March-June based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	736	432	314	234	--	--
3	740	436	317	237	--	--
7	747	443	325	244	--	--
14	765	466	346	265	--	--
30	814	529	408	320	--	--

Magnitude and probability of seasonal low flow from
November-February based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	923	720	624	550	--	--
3	928	724	627	552	--	--
7	937	732	634	559	--	--
14	945	739	641	566	--	--
30	967	772	681	612	--	--

Duration of daily mean flows based on 12 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
346	423	564	683	849	980	1,110	1,230
40%	30%	20%	15%	10%	5%	2%	1%
1,350	1,470	1,800	1,990	2,180	2,880	3,740	4,160

Magnitude and probability of annual high flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	3,080	4,200	4,800	--	--	--
3	3,000	4,100	4,690	--	--	--
7	2,900	3,970	4,570	--	--	--
15	2,780	3,860	4,450	--	--	--
30	2,550	3,530	4,090	--	--	--
60	2,160	2,900	3,310	--	--	--
90	1,900	2,470	2,800	--	--	--

Magnitude and probability of seasonal low flow from
July-October based on 10 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	980	804	715	644	--	--
3	1,000	828	739	667	--	--
7	1,020	860	775	706	--	--
14	1,070	900	810	736	--	--
30	1,100	914	818	741	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,570	938	1,610	581	12
November	2,780	736	1,610	588	12
December	3,000	739	1,240	599	12
January	1,450	737	1,060	256	12
February	1,520	626	1,030	302	12
March	1,610	525	1,040	345	12
April	1,530	370	1,010	420	12
May	2,860	445	1,380	611	29
June	3,860	619	1,880	943	29
July	2,120	716	1,330	387	29
August	1,670	734	1,140	238	13
September	1,570	732	1,180	247	14
Annual	1,900	733	1,320	325	12

06040000 Madison River near Cameron, Mont.
Site Number 33

LOCATION.--Lat 45°14'00", long 111°45'00" (NAD 27), at center of south line of sec.8, T.7 S., R.1 W., Madison County, on right bank 30 ft downstream from Varney Bridge, 1.8 mi downstream from Wigwam Creek, and 4.1 mi northwest of Cameron.
DRAINAGE AREA.--1,669 mi^2.
PERIOD OF RECORD.--13 years. October 1951 to September 1958, August 1959 to September 1963, April 1968 to September 1970 (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 5,135 ft (NGVD 29, from topographic map).
REMARKS.--Flow regulated by Hebgen Lake (station number 06038000). Diversions for irrigation of about 5,300 acres upstream from station.

Magnitude and probability of annual low flow
based on 10 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	584	426	357	307	--	--
3	643	494	426	376	--	--
7	684	523	448	391	--	--
14	735	558	469	401	--	--
30	791	589	488	409	--	--
60	853	639	534	453	--	--
90	917	726	634	562	--	--
120	1,140	930	815	720	--	--
183	1,280	1,040	904	791	--	--

Magnitude and probability of seasonal low flow from
March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	635	489	426	380	--	--
3	660	505	437	387	--	--
7	696	528	453	399	--	--
14	745	562	470	408	--	--
30	811	592	491	413	--	--

Magnitude and probability of seasonal low flow from
November-February based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	816	469	370	310	--	--
3	836	723	669	626	--	--
7	870	748	691	646	--	--
14	883	765	711	670	--	--
30	923	823	781	750	--	--

Duration of daily mean flows based on 12 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
416	472	604	770	887	1,010	1,130	1,270
40%	30%	20%	15%	10%	5%	2%	1%
1,410	1,610	1,930	2,090	2,400	3,030	4,030	4,750

Magnitude and probability of annual high flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,190	5,760	6,630	--	--	--
3	4,010	5,370	6,090	--	--	--
7	3,750	4,970	5,610	--	--	--
15	3,300	4,350	4,930	--	--	--
30	2,990	3,790	4,190	--	--	--
60	2,480	3,010	3,240	--	--	--
90	2,050	2,550	2,820	--	--	--

Magnitude and probability of seasonal low flow from
July-October based on 11 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	995	797	697	617	--	--
3	1,010	818	720	641	--	--
7	1,090	901	798	714	--	--
14	1,180	1,000	912	835	--	--
30	1,250	1,050	944	854	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,640	1,140	1,970	442	12
November	3,130	974	1,850	586	12
December	3,030	957	1,290	555	13
January	1,420	859	1,090	177	13
February	1,460	762	1,010	223	13
March	1,640	620	978	330	13
April	1,790	425	999	423	14
May	3,780	677	1,420	798	14
June	4,560	1,000	2,570	1,070	14
July	2,020	884	1,490	342	14
August	1,730	876	1,330	232	14
September	1,830	897	1,440	253	15
Annual	1,740	891	1,410	234	12

06040300 Jack Creek near Ennis, Mont.
Site Number 34

LOCATION.--Lat 45°21'22", long 111°34'55" (NAD 27), in NE¼NW¼SE¼ sec.34, T.5 S., R.l E., Madison County, Hydrologic Unit 10020007, Beaverhead National Forest, on left bank 800 ft upstream from bridge at forest boundary, 8.8 mi east of Ennis, and at river mile 6.5.
DRAINAGE AREA.--51.5 mi^2.
PERIOD OF RECORD.--September 1973 to September 1986; April 1991 to September 1992, seasonal records only (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 5,470 ft (NGVD 29, from topographic map).
REMARKS.--No known regulation or diversion upstream from station.

Magnitude and probability of annual low flow based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	8.8	7.3	6.6	6.1	--	--
3	9.9	8.7	8.2	7.8	--	--
7	11	9.8	9.3	8.9	--	--
14	12	10	9.8	9.3	--	--
30	12	11	10	9.6	--	--
60	13	12	11	11	--	--
90	15	13	13	12	--	--
120	16	14	13	13	--	--
183	20	17	16	15	--	--

Magnitude and probability of seasonal low flow from March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	9.9	9.0	8.3	--	--
3	12	11	9.8	9.2	--	--
7	13	11	10	9.6	--	--
14	13	11	10	9.8	--	--
30	14	12	11	10	--	--

Magnitude and probability of seasonal low flow from November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	9.0	7.4	6.7	6.2	--	--
3	10	8.9	8.3	7.8	--	--
7	11	10	9.6	9.1	--	--
14	12	11	10	9.8	--	--
30	13	12	11	10	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
9.3	11	12	13	15	18	21	26
40%	30%	20%	15%	10%	5%	2%	1%
32	44	66	89	123	179	244	270

Magnitude and probability of annual high flow based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	261	364	431	515	--	--
3	243	336	394	463	--	--
7	222	304	353	410	--	--
15	202	267	303	343	--	--
30	182	233	259	285	--	--
60	148	188	210	233	--	--
90	121	152	168	185	--	--

Magnitude and probability of seasonal low flow from July-October based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	20	16	14	13	--	--
3	21	17	16	15	--	--
7	22	19	17	17	--	--
14	22	19	18	17	--	--
30	24	20	19	18	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	35	18	24	5.2	14
November	28	15	20	4.0	13
December	20	13	17	2.1	13
January	18	11	15	1.9	13
February	16	11	13	1.6	13
March	18	9.9	14	2.5	13
April	44	13	33	9.2	15
May	175	37	111	40	15
June	268	72	163	58	15
July	136	35	77	31	15
August	56	26	39	10	15
September	39	22	29	5.9	16
Annual	65	33	47	10	13

06041000 Madison River below Ennis Lake, near McAllister, Mont.
Site Number 35

LOCATION.--Lat 45°29'25", long 111°38'00" (NAD 27), in SW¼SE¼NW¼ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 500 ft downstream from Madison powerplant, 1.5 mi downstream from Ennis Lake, 5.7 mi northeast of McAllister, and at river mile 38.8.

DRAINAGE AREA.--2,186 mi^2.

PERIOD OF RECORD.--October 1901 to December 1905, October 1906 to current year (2002). Prior to October 1938 adjusted monthly runoff only, published in WSP 1309. Published as "below Madison Reservoir," 1938-49. Records published as "near Red Bluff," 1890-94 and as "near Norris," 1910 are not equivalent and are published as "near Norris" in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,689.03 ft (NGVD 29, levels by U.S. Army Corps of Engineers). Prior to May 7, 1941, nonrecording gage in wooden stilling well at present site at different datum. May 7, 1941, to Jan. 13, 1945, nonrecording gages in concrete stilling well at present site and datum.

REMARKS.--Flow regulated by Hebgen Lake (station number 06038000) and Ennis Lake (station number 06040500). Diversions for irrigation of about 23,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 50 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	966	718	571	453	333	263
3	1,020	778	633	513	387	313
7	1,070	852	731	631	523	455
14	1,130	913	791	692	585	518
30	1,200	992	880	789	690	627
60	1,270	1,080	984	908	827	774
90	1,350	1,170	1,070	998	918	865
120	1,550	1,320	1,210	1,110	1,000	935
183	1,640	1,400	1,270	1,170	1,050	976

Magnitude and probability of seasonal low flow from March-June based on 51 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,110	849	708	594	476	404
3	1,130	885	754	651	541	473
7	1,180	959	849	762	669	610
14	1,240	1,010	895	805	708	647
30	1,330	1,070	952	856	756	693

Magnitude and probability of seasonal low flow from November-February based on 50 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	968	820	751	699	645	611
3	1,020	882	815	764	709	675
7	1,120	963	884	821	752	708
14	1,200	1,040	957	894	826	782
30	1,290	1,140	1,060	1,000	938	898

Duration of daily mean flows based on 51 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
765	802	911	1,090	1,230	1,350	1,480	1,650
40%	30%	20%	15%	10%	5%	2%	1%
1,830	2,020	2,200	2,510	2,830	3,360	4,340	5,420

Magnitude and probability of annual high flow based on 51 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,600	6,190	7,180	8,350	9,170	9,960
3	4,410	5,960	6,920	8,080	8,910	9,710
7	4,120	5,570	6,480	7,580	8,370	9,140
15	3,800	5,100	5,910	6,880	7,570	8,230
30	3,420	4,480	5,110	5,860	6,380	6,880
60	2,900	3,650	4,090	4,600	4,950	5,280
90	2,520	3,140	3,510	3,950	4,260	4,550

Magnitude and probability of seasonal low flow from July-October based on 50 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,300	1,020	859	693	532	403
3	1,340	1,070	892	736	581	448
7	1,380	1,130	952	795	620	512
14	1,420	1,160	992	845	683	580
30	1,450	1,200	1,050	928	793	706

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	2,960	1,120	2,090	445	51
November	3,320	1,300	2,180	421	51
December	3,240	1,200	1,540	313	51
January	2,060	1,040	1,400	227	51
February	1,960	1,040	1,410	213	51
March	2,050	911	1,460	282	51
April	2,760	746	1,570	479	51
May	4,190	859	2,090	800	51
June	6,140	1,120	3,070	1,300	51
July	3,450	972	1,900	642	51
August	2,340	1,040	1,520	299	51
September	2,300	1,120	1,670	336	51
Annual	2,530	1,140	1,820	320	51

06042500 Madison River near Three Forks, Mont.
Site Number 36

LOCATION.--Lat 45°49'25", long 111°29'50" (NAD 27), in SW¼NE¼ sec.20 T.1 N., R.2 E., Gallatin County, 5 mi south of Three Forks and 8 mi upstream from confluence with Jefferson and Gallatin Rivers.

DRAINAGE AREA.--2,511 mi^2.

PERIOD OF RECORD.--16 years (1893-96, 1928-32, 1941-50).

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft (NGVD 29, from topographic map). Aug. 24, 1893, to May 1, 1897, slope gage, and Nov. 8, 1928, to Sept. 30, 1932, wire-weight gage at different datums at site 6 miles downstream.

REMARKS.--Diversions for irrigation of about 31,000 acres upstream from station. Flow regulated by Hebgen Lake (station number 06038000) since 1915 and Ennis Lake (station number 06040500) since 1900.

Magnitude and probability of annual low flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	736	568	489	428	--	--
3	764	592	510	448	--	--
7	829	654	570	504	--	--
14	882	721	642	581	--	--
30	977	788	688	608	--	--
60	1,130	917	804	713	--	--
90	1,240	1,030	907	806	--	--
120	1,350	1,140	989	858	--	--
183	1,440	1,210	1,060	919	--	--

Magnitude and probability of seasonal low flow from
March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	807	658	599	557	--	--
3	867	689	616	565	--	--
7	973	765	678	615	--	--
14	1,050	851	769	712	--	--
30	1,180	928	826	754	--	--

Magnitude and probability of seasonal low flow from
November-February based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	956	738	612	511	--	--
3	998	776	647	542	--	--
7	1,040	830	711	613	--	--
14	1,090	919	826	750	--	--
30	1,170	1,020	950	889	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
590	664	798	912	1,120	1,230	1,350	1,460
40%	30%	20%	15%	10%	5%	2%	1%
1,630	1,840	2,050	2,150	2,490	3,030	4,000	4,690

Magnitude and probability of annual high flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,100	5,710	6,800	8,190	--	--
3	3,900	5,400	6,410	7,700	--	--
7	3,610	4,920	5,790	6,900	--	--
15	3,340	4,390	5,030	5,780	--	--
30	2,930	3,840	4,410	5,120	--	--
60	2,450	3,100	3,510	4,030	--	--
90	2,210	2,680	2,970	3,310	--	--

Magnitude and probability of seasonal low flow from
July-October based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	912	708	605	523	--	--
3	953	735	622	533	--	--
7	1,020	786	660	561	--	--
14	1,090	839	704	597	--	--
30	1,210	926	765	635	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,820	826	1,300	291	13
November	1,580	884	1,320	195	13
December	1,760	1,000	1,500	219	13
January	2,100	1,100	1,510	266	13
February	2,500	898	1,490	501	13
March	2,000	834	1,440	389	13
April	3,100	778	1,670	694	13
May	2,910	972	1,700	479	13
June	5,580	886	2,670	1,210	13
July	2,560	783	1,600	442	13
August	3,030	884	1,450	536	13
September	2,740	547	1,420	504	13
Annual	1,980	1,040	1,590	275	13

06043500 Gallatin River near Gallatin Gateway, Mont.
Site Number 37

LOCATION.--Lat 45°29'51", long 111°16'11" (NAD 27), in SE¼SE¼SE¼ sec.7, T.4 S., R.4 E., Gallatin County, Hydrologic Unit 10020008, on left bank 0.3 mi downstream from Spanish Creek, 7.3 mi south of Gallatin Gateway and at river mile 47.7.

DRAINAGE AREA.--825 mi^2.

PERIOD OF RECORD.--August 1889 to September 1894, June 1930 to September 1969, annual maximum, water years 1970-71, October 1971 to September 1981, October 1984 to current year (2002). Monthly discharge only for some periods, published in WSP 1309. Published as "West Gallatin River near Bozeman," 1889-94.

REVISED RECORDS.--WSP 1389: 1892(M), 1893-94. WSP 1559: Drainage area. WDR MT-85-1 (M), WDR MT-02-1: 1970-71 (M).

GAGE.--Water-stage recorder. Altitude of gage is 5,167.67 ft (NGVD 29). Prior to Oct. 20, 1932, nonrecording gages at several different sites and datums within 0.8 mi of present site.

REMARKS.--Diversions for irrigation of about 1,400 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 65 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	222	195	183	174	165	160
3	233	205	192	183	173	167
7	247	218	204	194	183	177
14	257	228	215	205	194	187
30	273	242	228	217	205	197
60	289	256	240	228	215	207
90	296	261	245	233	221	213
120	313	274	257	244	230	222
183	362	310	286	268	250	238

Magnitude and probability of seasonal low flow from March-June based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	265	230	213	199	185	176
3	273	237	220	207	192	183
7	280	244	227	213	199	189
14	288	251	233	219	204	194
30	301	261	243	229	214	205

Magnitude and probability of seasonal low flow from November-February based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	229	197	184	175	166	160
3	240	207	193	184	174	168
7	256	222	206	195	184	178
14	270	235	219	207	195	188
30	284	248	232	219	206	198

Duration of daily mean flows based on 67 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
196	204	226	264	303	338	374	437
40%	30%	20%	15%	10%	5%	2%	1%
506	654	1,000	1,410	2,050	3,010	4,100	4,980

Magnitude and probability of annual high flow based on 67 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,620	5,920	6,650	7,460	7,990	8,470
3	4,310	5,580	6,320	7,150	7,710	8,230
7	3,960	5,170	5,880	6,690	7,250	7,770
15	3,590	4,680	5,300	5,990	6,460	6,880
30	3,160	4,040	4,530	5,040	5,380	5,680
60	2,500	3,150	3,510	3,910	4,160	4,390
90	2,000	2,500	2,780	3,090	3,290	3,470

Magnitude and probability of seasonal low flow from July-October based on 66 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	379	318	289	267	244	229
3	393	330	299	275	249	233
7	403	337	306	281	255	238
14	411	343	310	285	259	242
30	425	351	317	291	264	247

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	721	238	447	102	67
November	589	247	375	74	68
December	488	214	313	56	67
January	428	200	302	51	67
February	407	220	299	45	67
March	465	206	307	52	67
April	899	263	503	149	67
May	3,140	873	1,790	541	67
June	5,110	643	2,910	1,010	68
July	3,670	345	1,270	576	68
August	1,160	270	602	170	68
September	788	233	483	112	68
Annual	1,180	408	802	174	67

06048000 East Gallatin River at Bozeman, Mont.
Site Number 38

LOCATION.--Lat 45°42'00", long 111°01'45" (NAD 27), near center of south line of sec.31, T.1 S., R.6 E., Gallatin County, on left bank 100 ft upstream from highway bridge, 500 ft downstream from Bozeman Creek, 0.5 mi upstream from Bridger Creek, and 0.5 mi north of Bozeman.
DRAINAGE AREA.--148 mi^2.
PERIOD OF RECORD.--22 years. August 1939 to September 1961 (discontinued).
REVISED RECORDS.--WSP 1559: Drainage area.
GAGE.--Water-stage recorder. Altitude of gage is 4,701.6 ft (NGVD 29).
REMARKS.--Diversions for irrigation of about 4,000 acres upstream from station. Some diurnal fluctuation caused by mill upstream from station.

Magnitude and probability of annual low flow based on 21 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	22	17	15	14	--	--
3	23	18	16	14	--	--
7	25	21	19	17	--	--
14	29	25	23	21	--	--
30	33	28	25	23	--	--
60	37	32	30	29	--	--
90	40	36	34	32	--	--
120	43	38	36	34	--	--
183	45	39	37	35	--	--

Magnitude and probability of seasonal low flow from March-June based on 22 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	35	26	21	17	--	--
3	36	27	22	18	--	--
7	38	30	25	21	--	--
14	42	34	30	26	--	--
30	55	43	38	35	--	--

Magnitude and probability of seasonal low flow from November-February based on 22 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	24	19	17	15	--	--
3	26	20	17	15	--	--
7	28	23	20	18	--	--
14	32	27	24	22	--	--
30	36	31	27	24	--	--

Duration of daily mean flows based on 22 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
20	23	26	32	37	42	46	53
40%	30%	20%	15%	10%	5%	2%	1%
60	70	107	145	196	272	378	482

Magnitude and probability of annual high flow based on 22 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	441	674	845	1,080	--	--
3	392	593	743	950	--	--
7	342	502	619	780	--	--
15	304	426	509	617	--	--
30	261	357	418	493	--	--
60	217	301	356	425	--	--
90	185	252	297	352	--	--

Magnitude and probability of seasonal low flow from July-October based on 21 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	30	24	21	19	--	--
3	32	25	22	20	--	--
7	33	26	23	21	--	--
14	35	28	25	23	--	--
30	37	30	27	24	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	86	30	52	12	22
November	75	31	50	11	22
December	75	28	46	10	22
January	64	23	39	8.4	22
February	56	28	42	7.8	22
March	124	26	60	20	22
April	329	68	158	77	22
May	529	90	236	108	22
June	343	46	178	83	22
July	134	23	63	24	22
August	96	19	42	17	22
September	83	32	49	12	23
Annual	156	50	85	24	22

06048500 Bridger Creek near Bozeman, Mont.
Site Number 39

LOCATION.--Lat 45°42'20", long 110°57'40" (NAD 27), in NE¼NE¼SE¼ sec.34, T.1 S., R.1 E., Gallatin County, Hydrologic Unit 10020008, on right bank, 3.5 mi northeast of Bozeman, and at river mile 3.6.

DRAINAGE AREA.--62.5 mi^2.

PERIOD OF RECORD.--October 1945 to September 1969, May 1971 to June 1972, March 1987 to August 1987 (discontinued). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1948. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,960 ft (NGVD 29, from topographic map). Prior to June 28, 1946, nonrecording gage at present site and datum.

REMARKS.--Diversions for irrigation of about 1,200 acres upstream from station.

Magnitude and probability of annual low flow
based on 23 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.4	2.2	1.7	1.4	--	--
3	3.8	2.5	1.9	1.6	--	--
7	4.2	2.9	2.3	1.9	--	--
14	4.7	3.4	2.9	2.6	--	--
30	5.5	3.9	3.3	2.9	--	--
60	6.4	4.7	4.0	3.5	--	--
90	7.1	5.2	4.5	4.0	--	--
120	7.8	5.8	5.0	4.5	--	--
183	8.4	6.3	5.6	5.0	--	--

Magnitude and probability of seasonal low flow from
March-June based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.9	3.5	2.7	2.2	1.7	--
3	6.2	3.7	2.9	2.3	1.8	--
7	6.7	4.1	3.2	2.7	2.2	--
14	7.3	4.9	4.2	3.7	3.3	--
30	12	7.0	5.4	4.4	3.4	--

Magnitude and probability of seasonal low flow from
November-February based on 24 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.5	2.2	1.9	1.6	--	--
3	3.8	2.5	2.1	1.8	--	--
7	4.3	3.0	2.5	2.2	--	--
14	5.0	3.6	3.1	2.7	--	--
30	5.7	4.2	3.6	3.2	--	--

Duration of daily mean flows based on 24 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
2.9	3.6	4.4	5.3	6.7	8.1	10	13
40%	30%	20%	15%	10%	5%	2%	1%
17	28	53	74	109	170	249	316

Magnitude and probability of annual high flow
based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	260	408	518	668	--	--
3	244	378	475	607	--	--
7	223	334	411	512	--	--
15	193	279	336	408	--	--
30	163	230	272	325	--	--
60	129	181	214	255	--	--
90	105	144	169	199	--	--

Magnitude and probability of seasonal low flow from
July-October based on 24 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	6.7	4.3	3.5	2.8	--	--
3	7.0	4.6	3.6	3.0	--	--
7	7.3	4.9	3.9	3.3	--	--
14	7.8	5.3	4.3	3.7	--	--
30	8.3	5.9	5.1	4.5	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	22	6.1	11	4.3	25
November	22	5.8	10	3.8	25
December	17	4.1	8.7	4.0	25
January	15	3.0	7.2	3.4	25
February	34	2.8	8.9	6.4	25
March	45	2.8	15	11	26
April	148	20	64	35	26
May	333	45	154	72	27
June	240	32	101	56	27
July	84	11	31	16	27
August	38	3.9	13	7.3	26
September	29	5.2	11	5.9	25
Annual	70	16	37	14	24

06050000 Hyalite Creek at Hyalite Ranger Station, near Bozeman, Mont.
Site Number 40

LOCATION.--Lat 45°33'42", long 111°04'12" (NAD 27), in NW¼NW¼SE¼ sec.23, T.3 S., R.5 E., Gallatin County, Hydrologic Unit 10020008, Gallatin National Forest, on right bank 0.8 mi south of former Hyalite Ranger Station, 7.3 mi south of Bozeman, and at river mile 20.8.

DRAINAGE AREA.--48.2 m^2.

PERIOD OF RECORD.--August 1895 to October 1896, calendar year 1897 (discharge measurements only), April 1898 to October 1899, June to October 1900, May to September 1902, calendar year 1903 (discharge measurements only), September to December 1904, September 1934 to September 1994, October 1994 to September 1995 (seasonal records only, discontinued). Monthly discharge only for some periods, published in WSP 1309. Prior to 1934, published as "Middle Creek near Bozeman."

REVISED RECORDS.--WSP 1509: 1902, 1939(M). WSP 1559: Drainage area. WSP 1709: 1953, 1956-57.

GAGE.--Water-stage recorder. Altitude of gage is 5,539.6 ft (NGVD 29). Prior to September 1934, nonrecording gages at two sites 0.5 mi upstream at different datums. Sept. 13, 1934, to May 13, 1948, water-stage recorder at site 0.3 mi downstream at different datum.

REMARKS.--Flow regulated by Middle Creek Reservoir (station 06049500) after March 1951.

Unregulated streamflow period

Magnitude and probability of annual low flow
based on 16 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	9.8	8.4	7.3	--	--
3	12	10	8.6	7.4	--	--
7	12	11	10	8.8	--	--
14	14	12	11	9.6	--	--
30	15	13	12	11	--	--
60	18	15	14	13	--	--
90	20	16	15	14	--	--
120	21	18	16	15	--	--
183	25	21	18	17	--	--

Magnitude and probability of seasonal low flow from
March-June based on 17 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	11	10	9.4	--	--
3	13	11	10	9.5	--	--
7	14	11	10	9.6	--	--
14	15	12	11	10	--	--
30	16	14	12	11	--	--

Magnitude and probability of seasonal low flow from
November-February based on 17 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	11	9.7	8.8	--	--
3	13	11	9.9	9.0	--	--
7	13	11	10	9.2	--	--
14	14	12	11	9.7	--	--
30	16	13	12	11	--	--

Duration of daily mean flows based on 17 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
9.9	11	13	15	19	22	27	32
40%	30%	20%	15%	10%	5%	2%	1%
40	53	87	118	158	213	264	327

Magnitude and probability of annual high flow
based on 17 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	291	378	438	515	--	--
3	268	349	405	478	--	--
7	246	317	365	426	--	--
15	214	278	323	383	--	--
30	191	245	283	334	--	--
60	168	208	234	267	--	--
90	140	174	196	225	--	--

Magnitude and probability of seasonal low flow from
July-October based on 17 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	18	13	9.6	--	--
3	28	18	13	9.9	--	--
7	28	21	19	18	--	--
14	29	23	21	19	--	--
30	30	24	22	20	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	53	19	34	10	20
November	39	17	27	7.1	18
December	31	12	22	6.0	18
January	29	9.7	19	4.7	17
February	25	12	17	4.0	17
March	24	11	17	3.7	17
April	122	18	45	28	17
May	290	99	141	45	18
June	270	89	192	53	19
July	160	30	97	37	19
August	75	25	46	15	19
September	58	16	36	11	21
Annual	91	37	57	13	17

06050000 Hyalite Creek at Hyalite Ranger Station, near Bozeman, Mont.—Continued
Site Number 40

Regulated streamflow period

Magnitude and probability of annual low flow based on 41 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	9.9	7.4	6.4	5.6	4.9	--
3	10	7.8	6.7	5.9	5.1	--
7	11	8.5	7.3	6.4	5.6	--
14	12	9.3	8.0	7.1	6.2	--
30	13	10	8.9	7.8	6.7	--
60	15	12	10	9.0	7.7	--
90	17	14	12	10	9.0	--
120	19	15	13	12	10	--
183	28	22	19	18	16	--

Magnitude and probability of seasonal low flow from March-June based on 42 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	14	11	8.9	7.7	6.6	--
3	15	11	9.3	8.1	6.9	--
7	15	12	10	8.9	7.7	--
14	16	12	11	9.6	8.4	--
30	17	13	11	10	8.7	--

Magnitude and probability of seasonal low flow from November-February based on 41 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	11	7.8	6.6	5.7	5.0	--
3	11	8.2	6.9	6.0	5.2	--
7	12	8.9	7.5	6.5	5.6	--
14	13	9.7	8.2	7.1	6.2	--
30	15	11	9.3	8.1	6.8	--

Duration of daily mean flows based on 42 years of record

Discharge, in ft³/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
7.7	9.1	12	14	18	22	28	37
40%	30%	20%	15%	10%	5%	2%	1%
52	79	113	134	174	241	324	365

Magnitude and probability of annual high flow based on 42 years of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	361	471	540	626	687	--
3	337	438	502	580	636	--
7	301	388	442	506	552	--
15	269	341	383	433	468	--
30	236	296	331	370	397	--
60	197	246	276	310	334	--
90	169	207	229	254	271	--

Magnitude and probability of seasonal low flow from July-October based on 43 seasons of record

Period of consecutive days	Discharge, in ft³/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	27	20	17	15	13	--
3	28	21	18	16	14	--
7	29	22	19	17	15	--
14	32	24	21	18	16	--
30	36	27	24	21	19	--

Monthly and annual mean discharges

Month	Maximum (ft³/s)	Minimum (ft³/s)	Mean (ft³/s)	Standard deviation (ft³/s)	Years of record
October	80	20	39	14	44
November	62	12	26	9.7	42
December	30	7.7	20	5.4	42
January	32	6.3	17	5.2	42
February	35	8.6	17	4.9	42
March	37	8.5	18	6.1	42
April	66	13	36	13	44
May	273	56	133	50	44
June	383	108	219	59	44
July	275	63	142	45	44
August	145	41	89	22	44
September	117	28	53	19	44
Annual	102	43	68	14	42

06052500 Gallatin River at Logan, Mont.
Site Number 41

LOCATION.--Lat 45°53'07", long 111°26'15" (NAD 27), in SE¼NW¼NE¼ sec.35, T.2 N., R.2 E., Gallatin County, Hydrologic Unit 10020008, on right bank at former county road bridge site, 0.2 mi upstream from present county bridge, 0.5 mi west of Logan, and at river mile 6.3.

DRAINAGE AREA.--1,795 mi^2.

PERIOD OF RECORD.--September 1893 to December 1905, August 1928 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1389: 1898-99, 1903, 1905, 1929(M), 1935-36(M), 1938-39(M), 1941(M). WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,086.42 ft (NGVD 29). Prior to Aug. 10, 1928, nonrecording gages at several sites within 0.5 mi of present site at various datums. Aug. 10, 1928, to Oct. 7, 1941, nonrecording gage at present site and datum.

REMARKS.--Some regulation by Middle Creek Reservoir (station number 06049500). Diversions for irrigation of about 110,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

Magnitude and probability of annual low flow based on 78 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	326	241	203	176	149	133
3	332	246	209	183	157	141
7	346	256	218	191	163	147
14	366	268	226	196	167	149
30	401	289	241	207	173	153
60	473	336	276	233	190	166
90	541	392	324	274	225	195
120	606	449	375	319	262	228
183	674	522	445	385	322	284

Magnitude and probability of seasonal low flow from March-June based on 80 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	610	440	349	279	209	169
3	634	462	368	295	221	178
7	669	496	398	320	240	194
14	726	567	469	388	301	248
30	824	653	542	448	347	286

Magnitude and probability of seasonal low flow from November-February based on 79 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	516	404	347	303	256	227
3	536	422	364	319	271	241
7	568	455	396	350	300	269
14	607	491	431	383	331	298
30	648	536	477	428	376	342

Duration of daily mean flows based on 80 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
205	248	322	416	550	622	693	767
40%	30%	20%	15%	10%	5%	2%	1%
888	1,010	1,230	1,490	2,120	3,270	4,630	5,560

Magnitude and probability of annual high flow based on 80 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,880	6,430	7,160	7,820	8,180	8,460
3	4,570	6,070	6,800	7,490	7,880	8,190
7	4,140	5,590	6,340	7,100	7,560	7,950
15	3,690	5,100	5,890	6,740	7,280	7,750
30	3,180	4,470	5,210	6,020	6,540	7,010
60	2,520	3,530	4,120	4,800	5,250	5,670
90	2,060	2,830	3,300	3,850	4,220	4,570

Magnitude and probability of seasonal low flow from July-October based on 79 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	328	244	206	178	150	135
3	334	248	212	186	158	142
7	349	260	222	194	164	148
14	369	272	230	198	169	151
30	406	293	246	209	175	155

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	1,260	333	777	227	81
November	1,190	328	829	175	81
December	1,050	464	751	127	81
January	971	410	690	118	80
February	1,250	385	707	143	80
March	1,290	478	799	148	80
April	1,990	429	1,050	302	80
May	4,690	176	2,110	896	80
June	5,960	280	2,900	1,360	80
July	3,900	162	1,010	710	80
August	1,660	167	487	230	81
September	1,270	238	647	232	81
Annual	1,670	454	1,060	297	80

06054500 Missouri River at Toston, Mont.
Site Number 42

LOCATION.--Lat 46°08'46", long 111°25'11" (NAD 27), in NW¼SE¼NW¼ sec.36, T.5 N., R.2 E., Broadwater County, Hydrologic Unit 10030101, on left bank 2.2 mi southeast of Toston, 4.8 mi upstream from Crow Creek, 7.8 mi downstream from Sixteenmile Creek, and at river mile 2,296.1.

DRAINAGE AREA.--14,669 mi^2.

PERIOD OF RECORD.--April 1890 to February 1891, April 1910 to December 1916, April 1941 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,905.68 ft (NGVD 29). Prior to Dec. 20, 1916, nonrecording gages at site 2.5 mi downstream at different datums.

REMARKS.--Some regulation by six reservoirs on tributaries and Clark Canyon Reservoir (station number 06015300). Diversions for irrigation of about 555,400 acres of which 12,000 acres lies downstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

Magnitude and probability of annual low flow
based on 65 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,610	1,180	994	855	716	633
3	1,710	1,260	1,060	914	764	675
7	1,900	1,410	1,180	1,010	839	737
14	2,080	1,510	1,260	1,060	872	758
30	2,320	1,670	1,380	1,160	941	814
60	2,670	1,940	1,610	1,350	1,100	949
90	3,010	2,270	1,910	1,640	1,360	1,200
120	3,390	2,650	2,290	2,000	1,710	1,530
183	3,610	2,990	2,690	2,470	2,220	2,070

Magnitude and probability of seasonal low flow from
March-June based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2,920	2,180	1,830	1,570	1,300	1,140
3	3,080	2,330	1,960	1,680	1,390	1,210
7	3,340	2,610	2,230	1,930	1,610	1,420
14	3,600	2,920	2,560	2,280	1,980	1,790
30	4,020	3,340	3,000	2,720	2,430	2,250

Magnitude and probability of seasonal low flow from
November-February based on 66 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,960	1,450	1,200	1,010	815	699
3	2,100	1,600	1,350	1,160	955	832
7	2,390	1,940	1,710	1,530	1,340	1,230
14	2,730	2,310	2,110	1,950	1,770	1,660
30	3,110	2,700	2,510	2,350	2,190	2,080

Duration of daily mean flows based on 67 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
1,210	1,460	1,850	2,340	2,990	3,400	3,760	4,120
40%	30%	20%	15%	10%	5%	2%	1%
4,670	5,400	6,180	7,630	9,560	13,900	19,500	22,700

Magnitude and probability of annual high flow
based on 67 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	17,800	24,300	27,900	31,800	34,300	36,500
3	17,400	23,800	27,400	31,300	33,800	36,100
7	16,400	22,700	26,300	30,200	32,800	35,100
15	15,000	21,100	24,500	28,300	30,800	33,000
30	13,400	18,600	21,600	24,900	27,000	29,000
60	10,900	14,900	17,100	19,500	21,100	22,500
90	9,350	12,500	14,200	16,100	17,300	18,400

Magnitude and probability of seasonal low flow from
July-October based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,970	1,380	1,130	964	801	706
3	2,020	1,400	1,150	976	807	710
7	2,090	1,450	1,190	1,020	841	745
14	2,180	1,520	1,270	1,070	881	766
30	2,390	1,680	1,390	1,180	944	825

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	6,780	2,510	4,450	993	68
November	7,030	3,130	4,740	887	68
December	5,970	2,680	3,780	641	68
January	4,890	2,430	3,400	587	67
February	5,220	2,270	3,730	600	67
March	6,900	2,840	4,120	773	67
April	10,100	2,390	5,630	1,680	67
May	18,400	3,130	8,750	3,490	68
June	24,500	3,180	12,500	5,460	68
July	14,200	1,240	5,210	2,760	68
August	5,730	896	2,750	1,170	68
September	5,810	1,450	3,430	1,030	68
Annual	7,740	2,930	5,220	1,220	67

06055500 Crow Creek near Radersburg, Mont.
Site Number 43

LOCATION.--Lat 46°16'10", long 111°41'38" (NAD 27), Broadwater County, Hydrologic Unit 10030101, on left bank, 0.8 mi west of Helena National Forest boundary, 1.5 mi upstream from Slim Sam Creek, and 6.0 mi northwest of Radersburg.

DRAINAGE AREA.--76.6 mi^2.

PERIOD OF RECORD.--Apri1 to June 1901, May 1919 to September 1929, June 1966 to June 1972, April 1989 to October 1990 (discontinued, seasonal records only). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1509: 1920, 1921, 1922(M), 1924(M). WRD MT-66: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,870 ft (NGVD 29, from topographic map). Prior to June 29, 1901, nonrecording gage at site 1.5 mi downstream at different datum. May 25, 1919, to Apr. 16, 1924, nonrecording gage at about the same site as earlier record but different datum. Apr. 17, 1924, to Sept. 30, 1929, at site 0.6 mi downstream at different datum.

REMARKS.--No known diversions upstream from gage.

Magnitude and probability of annual low flow based on 14 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.7	3.2	2.6	2.2	--	--
3	5.1	3.5	2.9	2.4	--	--
7	5.4	3.7	3.0	2.4	--	--
14	6.1	4.1	3.3	2.6	--	--
30	6.6	4.7	3.9	3.2	--	--
60	7.5	5.6	4.9	4.3	--	--
90	8.6	6.7	5.8	5.1	--	--
120	10	7.8	6.7	5.8	--	--
183	13	11	9.6	8.6	--	--

Magnitude and probability of seasonal low flow from March-June based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	7.8	5.2	4.1	3.3	--	--
3	7.9	5.8	4.9	4.4	--	--
7	8.4	6.1	5.2	4.6	--	--
14	8.9	6.8	6.0	5.4	--	--
30	11	8.1	6.9	6.1	--	--

Magnitude and probability of seasonal low flow from November-February based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.3	3.6	3.0	2.5	--	--
3	5.5	3.8	3.0	2.6	--	--
7	5.9	4.0	3.2	2.6	--	--
14	6.4	4.3	3.4	2.8	--	--
30	6.9	4.9	4.0	3.4	--	--

Duration of daily mean flows based on 15 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
3.5	4.5	5.9	6.7	8.7	12	15	18
40%	30%	20%	15%	10%	5%	2%	1%
22	31	63	92	138	223	332	406

Magnitude and probability of annual high flow based on 15 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	427	520	578	647	--	--
3	386	475	531	600	--	--
7	345	430	488	562	--	--
15	292	373	430	505	--	--
30	244	313	362	428	--	--
60	179	224	258	305	--	--
90	138	171	196	230	--	--

Magnitude and probability of seasonal low flow from July-October based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	11	7.1	5.6	4.6	--	--
3	11	7.8	6.4	5.4	--	--
7	12	9.0	7.4	6.3	--	--
14	14	9.9	8.2	7.0	--	--
30	16	12	9.4	7.8	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	24	7.0	17	5.2	16
November	25	7.0	14	4.8	16
December	17	5.0	9.8	2.8	16
January	17	4.0	8.4	3.0	16
February	14	3.0	8.5	3.0	16
March	20	6.0	12	3.9	16
April	96	9.6	34	21	19
May	263	108	167	46	19
June	377	46	168	94	21
July	142	9.0	54	29	19
August	38	6.9	23	7.7	19
September	27	2.5	17	6.1	20
Annual	68	34	48	9.0	15

06061500 Prickly Pear Creek near Clancy, Mont.
Site Number 44

LOCATION.--Lat 46°31'09", long 111°56'45" (NAD 27), in NE¼SE¼SW¼ sec.23, T.9 N., R.3 W., Jefferson County, Hydrologic Unit 10030101, on right bank 3.5 mi downstream from Lump Gulch, 4 mi northeast of Clancy, 7 mi southeast of Helena, and at river mile 24.4.

DRAINAGE AREA.--192 mi^2.

PERIOD OF RECORD.--July 1908 to September 1916, July 1921 to September 1933, October 1945 to October 1953, October 1954 to September 1969, October 1978 to 2002 (discontinued). October 1969 to September 1980 record collected by Montana Department of Natural Resources and Conservation. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1086: 1946(M). WSP 1309: 1925, 1927, 1931(M), 1933, 1948(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,067.1 ft (NGVD 29). Prior to July 12, 1910, nonrecording gage at site 1.2 mi upstream at different datum. July 12, 1910, to Sept. 30, 1916, and July 28, 1921, to Aug. 12, 1933, nonrecording gage at site 2.2 mi upstream at different datum.

REMARKS.--Diversions for irrigation of about 700 acres upstream from station.

Magnitude and probability of annual low flow
based on 63 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	12	8.6	7.0	5.8	4.8	4.2
3	13	9.0	7.3	6.2	5.0	4.4
7	14	9.8	8.0	6.6	5.3	4.5
14	15	11	8.7	7.1	5.6	4.8
30	17	12	9.7	7.9	6.1	5.1
60	19	14	11	9.0	7.0	5.9
90	21	15	13	11	8.8	7.6
120	22	16	14	12	9.9	8.8
183	24	17	15	13	11	9.6

Magnitude and probability of seasonal low flow from
March-June based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	20	14	11	9.7	8.2	7.4
3	20	14	12	10	8.7	7.8
7	22	16	13	12	10	9.3
14	24	17	15	13	12	11
30	28	21	18	16	14	13

Magnitude and probability of seasonal low flow from
November-February based on 67 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	15	10	8.3	7.0	5.8	5.1
3	15	11	8.8	7.5	6.2	5.5
7	16	12	9.6	8.2	6.9	6.1
14	17	13	11	9.1	7.6	6.7
30	19	14	12	11	9.1	8.2

Duration of daily mean flows based on 67 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
8.1	10	13	16	19	22	27	31
40%	30%	20%	15%	10%	5%	2%	1%
37	45	63	79	102	149	208	257

Magnitude and probability of annual high flow
based on 67 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	215	361	482	664	823	1,000
3	195	320	419	563	684	819
7	174	280	361	476	571	673
15	157	248	315	406	477	552
30	138	213	265	333	384	436
60	114	170	206	250	282	312
90	96	140	168	201	225	247

Magnitude and probability of seasonal low flow from
July-October based on 66 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	19	11	8.6	6.7	5.0	4.1
3	19	12	8.8	6.9	5.2	4.2
7	19	12	9.1	7.2	5.4	4.4
14	20	13	9.6	7.6	5.7	4.7
30	22	14	10	8.2	6.2	5.2

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	70	11	31	14	68
November	60	12	29	11	67
December	44	10	24	7.8	67
January	37	9.9	21	6.3	67
February	57	8.6	24	8.9	67
March	80	12	31	12	67
April	131	23	52	20	67
May	453	21	108	56	67
June	450	20	129	82	67
July	141	9.9	57	34	69
August	89	4.7	30	17	69
September	71	7.3	29	15	69
Annual	117	15	47	18	67

06062500 Tenmile Creek near Rimini, Mont.
Site Number 45

LOCATION.--Lat 46°31'27", long 112°15'22" (NAD 27), in NE¼SW¼NE¼ sec.20, T.9 N., R.5 W., Lewis and Clark County, Hydrologic Unit 10030101, Helena National Forest, on left bank at U.S. Forest Service Moose Creek campground, 500 ft upstream from Moose Creek, 2.5 mi north of Rimini, and at river mile 20.4.

DRAINAGE AREA.--30.9 mi^2.

PERIOD OF RECORD.--July 1914 to September 1994, May 1997 to current year (2002). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1917, 1921, 1924-25. WSP 1509: 1915, 1916-17(M), 1920(M), 1927(M), 1928-30, 1947(M), 1948, 1950(M). WSP 1559: Drainage area. WSP 1709: 1959. WDR-MT-97-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,850 ft (NGVD 29). Prior to Dec. 17, 1934, water-stage recorder at site 40 ft downstream at different datum and different control.

REMARKS.--Flow partly regulated by Chessman and Scott Reservoirs on tributaries upstream from station, combined capacity, 2,340 acre-feet. Some small diversions upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 84 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.33	0.13	0.04	0.00	0.00	0.00
3	.36	.14	.07	.00	.00	.00
7	.43	.15	.07	.04	.00	.00
14	.47	.20	.13	.09	.06	.04
30	.58	.27	.18	.13	.09	.07
60	.76	.37	.26	.19	.14	.11
90	.91	.44	.30	.22	.15	.12
120	1.0	.50	.34	.25	.18	.14
183	1.3	.60	.42	.32	.23	.19

Magnitude and probability of seasonal low flow from March-June based on 86 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.96	0.41	0.26	0.18	0.12	0.09
3	1.0	.43	.28	.19	.12	.09
7	1.1	.49	.31	.21	.14	.10
14	1.3	.58	.37	.26	.17	.12
30	1.8	.81	.51	.35	.22	.16

Magnitude and probability of seasonal low flow from November-February based on 85 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.49	0.22	0.14	0.10	0.07	0.05
3	.53	.23	.15	.11	.07	.06
7	.62	.28	.19	.13	.09	.07
14	.72	.34	.22	.16	.10	.08
30	.86	.40	.26	.18	.12	.09

Duration of daily mean flows based on 85 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.03	0.07	0.17	0.33	0.66	0.99	1.4	2.1
40%	30%	20%	15%	10%	5%	2%	1%
3.5	6.2	17	30	54	101	168	215

Magnitude and probability of annual high flow based on 85 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	172	299	397	532	641	756
3	165	271	342	428	489	548
7	148	237	291	352	391	427
15	125	200	244	294	327	356
30	103	164	201	243	270	295
60	75	118	144	171	189	204
90	56	88	106	127	140	151

Magnitude and probability of seasonal low flow from July-October based on 85 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.42	0.17	0.07	0.00	0.00	0.00
3	.45	.17	.09	.00	.00	.00
7	.52	.18	.09	.04	.00	.00
14	.56	.23	.15	.10	.06	.05
30	.70	.31	.21	.16	.11	.09

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	23	0.19	3.1	4.2	86
November	14	.22	2.3	2.5	86
December	9.6	.17	1.8	1.7	86
January	7.0	.14	1.5	1.2	86
February	5.1	.06	1.3	1.0	86
March	18	.07	2.5	2.7	86
April	67	1.5	18	14	86
May	300	6.1	83	46	87
June	346	3.0	73	63	87
July	66	.34	12	14	86
August	22	.13	2.5	3.1	86
September	22	.23	2.4	3.5	86
Annual	53	1.7	17	9.2	85

06063000 Tenmile Creek near Helena, Mont.
Site Number 46

LOCATION.--Lat 46°36'20", long 112°05'20" (NAD 27), near center of SE¼ sec.22, T.10 N., R.4 W., Lewis and Clark County, on right bank near Broadwater Hotel 1.5 mi west of Helena and 2.5 mi upstream from Sevenmile Creek.
DRAINAGE AREA.--96.5 mi^2.
PERIOD OF RECORD.--46 years. July 1908 to September 1954 (discontinued).
GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,960 ft (NGVD 29, from topographic map). Prior to Sept. 18, 1925, staff gage and Sept. 18, 1925, to Mar. 15, 1929, water-stage recorder, at site 100 ft downstream at different datum.
REMARKS.--Diversions for irrigation of about 1,200 acres upstream from station.

Magnitude and probability of annual low flow based on 40 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.35	0.10	0.00	0.00	0.00	--
3	.39	.11	.00	.00	.00	--
7	.44	.14	.00	.00	.00	--
14	.52	.15	.00	.00	.00	--
30	.70	.28	.00	.00	.00	--
60	1.3	.35	.12	.00	.00	--
90	2.2	.65	.27	.10	.00	--
120	3.0	1.3	.76	.49	.29	--
183	4.0	2.0	1.4	1.0	.72	--

Magnitude and probability of seasonal low flow from March-June based on 46 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.5	1.6	0.88	0.31	0.00	--
3	3.8	1.7	1.0	.58	.00	--
7	4.7	2.1	1.2	.68	.34	--
14	5.1	2.5	1.6	1.0	.63	--
30	7.3	3.9	2.7	2.0	1.4	--

Magnitude and probability of seasonal low flow from November-February based on 46 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2.7	1.3	0.78	0.50	0.28	--
3	2.8	1.3	.84	.54	.31	--
7	2.9	1.5	.94	.62	.38	--
14	3.2	1.6	1.1	.71	.44	--
30	3.5	1.9	1.3	.96	.66	--

Duration of daily mean flows based on 46 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.08	0.17	0.42	0.84	1.9	3.2	4.7	6.5
40%	30%	20%	15%	10%	5%	2%	1%
9.5	15	29	43	72	140	246	329

Magnitude and probability of annual high flow based on 46 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	230	420	560	747	891	--
3	212	391	524	701	837	--
7	187	346	464	620	740	--
15	159	291	390	523	625	--
30	130	242	327	446	541	--
60	98	175	233	310	370	--
90	75	134	176	231	272	--

Magnitude and probability of seasonal low flow from July-October based on 40 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.36	0.10	0.00	0.00	0.00	--
3	.40	.12	.00	.00	.00	--
7	.45	.15	.00	.00	.00	--
14	.53	.16	.00	.00	.00	--
30	.71	.30	.00	.00	.00	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	40	0.62	8.5	8.3	46
November	26	.99	8.3	6.1	46
December	19	.75	6.3	4.6	46
January	19	.86	5.5	3.9	46
February	14	1.6	5.3	3.0	46
March	31	1.8	9.8	6.8	46
April	111	5.2	36	24	46
May	381	23	115	78	46
June	423	4.4	106	99	46
July	117	.32	19	23	45
August	20	.16	3.6	4.9	42
September	20	.27	3.5	4.2	44
Annual	74	4.6	28	17	46

06065500 Missouri River below Hauser Dam, near Helena, Mont.
Site Number 47

LOCATION.--Lat 46°46'02", long 111°53'27" (NAD 27), in SE¼NW¼SW¼ sec.29, T.12 N., R.2 W., Lewis and Clark County, Hydrologic Unit 10030101, 0.2 mi downstream from Hauser Dam, 1.3 mi upstream from Beaver Creek, 15 mi northeast of Helena, and at river mile 2,237.2.

DRAINAGE AREA.--16,876 mi^2.

PERIOD OF RECORD.--January 1923 to September 1942, October 1994 to current year (2002). Monthly mean discharges for October, November, and December 1922 were from Congressional documents: 73rd Congress, 2nd session, H. Doc. 238, Missouri River. Published figures are in acre feet.

GAGE.--Water-stage recorder. Altitude of gage is 3,580 ft (NGVD 29).

REMARKS.--Flow regulated by eight small irrigation reservoirs and two powerplants, Clark Canyon Reservoir (station number 06015300) and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 594,400 acres. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	681	458	362	293	--	--
3	1,240	840	676	561	--	--
7	1,620	1,170	990	863	--	--
14	1,850	1,340	1,120	962	--	--
30	2,080	1,510	1,250	1,060	--	--
60	2,320	1,730	1,460	1,260	--	--
90	2,490	1,890	1,630	1,430	--	--
120	2,650	2,040	1,780	1,590	--	--
183	2,850	2,250	1,990	1,790	--	--

Magnitude and probability of seasonal low flow from March-June based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,820	974	659	460	--	--
3	2,260	1,380	1,020	768	--	--
7	2,610	1,820	1,470	1,220	--	--
14	2,970	2,170	1,820	1,550	--	--
30	3,500	2,730	2,390	2,140	--	--

Magnitude and probability of seasonal low flow from November-February based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	998	629	493	403	--	--
3	1,620	1,170	987	854	--	--
7	2,050	1,530	1,300	1,130	--	--
14	2,290	1,790	1,570	1,410	--	--
30	2,610	2,090	1,850	1,660	--	--

Duration of daily mean flows based on 20 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
826	1,020	1,430	1,740	2,260	2,640	3,010	3,410
40%	30%	20%	15%	10%	5%	2%	1%
3,820	4,230	5,240	5,800	7,070	9,800	14,200	16,800

Magnitude and probability of annual high flow based on 20 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	12,500	18,900	23,300	29,000	--	--
3	12,100	18,400	22,900	28,800	--	--
7	11,200	17,200	21,600	27,400	--	--
15	9,860	15,200	19,100	24,300	--	--
30	8,600	13,100	16,500	21,200	--	--
60	7,230	10,700	13,100	16,400	--	--
90	6,280	9,060	11,100	13,800	--	--

Magnitude and probability of seasonal low flow from July-October based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	922	551	414	324	--	--
3	1,490	975	766	621	--	--
7	1,840	1,280	1,040	877	--	--
14	2,070	1,440	1,160	964	--	--
30	2,260	1,580	1,280	1,060	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	5,540	1,940	3,300	913	20
November	5,940	2,000	3,430	992	20
December	4,720	1,940	3,250	796	20
January	4,340	1,900	3,080	717	20
February	5,150	1,670	3,220	936	20
March	7,280	2,400	3,940	1,080	20
April	9,230	2,580	5,150	1,920	20
May	16,300	2,380	7,150	3,480	20
June	23,500	2,550	7,960	5,140	20
July	7,640	1,210	3,560	1,760	20
August	3,710	971	2,520	802	20
September	4,620	1,500	2,840	929	20
Annual	6,410	2,380	4,120	1,230	20

06066500 Missouri River below Holter Dam, near Wolf Creek, Mont.
Site Number 48

LOCATION.--Lat 46°59'41", long 112°00'37" (NAD 27), in NE¼SW¼SE¼ sec.5, T.14 N., R.3 W., Lewis and Clark County, Hydrologic Unit 10030102, on left bank 0.4 mi downstream from Holter Dam, 2.8 mi southeast of Wolf Creek, and at river mile 2,210.7.

DRAINAGE AREA.--17,149 mi^2.

PERIOD OF RECORD.--October 1945 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 3,464.11 ft (NGVD 29).

REMARKS.--Flow regulated by nine smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 594,400 acres. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow
based on 49 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2,720	1,720	1,290	992	718	--
3	2,950	1,920	1,450	1,120	811	--
7	3,120	2,140	1,680	1,340	1,020	--
14	3,270	2,290	1,830	1,490	1,150	--
30	3,500	2,560	2,110	1,770	1,430	--
60	3,690	2,810	2,400	2,090	1,770	--
90	3,890	3,040	2,650	2,360	2,060	--
120	4,110	3,210	2,800	2,490	2,170	--
183	4,370	3,460	3,050	2,730	2,410	--

Magnitude and probability of seasonal low flow from
March-June based on 50 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,140	1,850	1,350	1,020	725	570
3	3,390	2,030	1,490	1,130	822	625
7	3,540	2,230	1,700	1,350	1,030	821
14	3,710	2,380	1,840	1,510	1,170	930
30	4,080	2,750	2,190	1,790	1,450	1,190

Magnitude and probability of seasonal low flow from
November-February based on 49 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,670	2,960	2,650	2,410	2,180	--
3	3,890	3,250	2,960	2,750	2,520	--
7	4,070	3,420	3,120	2,890	2,650	--
14	4,170	3,490	3,180	2,930	2,680	--
30	4,350	3,630	3,300	3,040	2,760	--

Duration of daily mean flows based on 50 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
1,760	2,220	2,480	2,910	3,470	3,950	4,430	4,920
40%	30%	20%	15%	10%	5%	2%	1%
5,410	5,890	6,940	7,670	8,390	11,000	15,200	17,000

Magnitude and probability of annual high flow
based on 50 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	12,200	18,600	22,600	27,300	30,500	33,500
3	11,900	18,200	22,200	26,900	30,200	33,300
7	11,300	17,500	21,400	26,100	29,400	32,500
15	10,500	16,300	20,100	24,800	28,200	31,500
30	9,420	14,100	17,300	21,100	24,000	26,800
60	8,140	11,500	13,700	16,300	18,200	20,000
90	7,400	10,100	11,800	13,700	15,100	16,500

Magnitude and probability of seasonal low flow from
July-October based on 49 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,040	2,130	1,720	1,420	1,120	--
3	3,280	2,420	2,010	1,700	1,390	--
7	3,450	2,660	2,290	2,010	1,730	--
14	3,610	2,800	2,420	2,120	1,820	--
30	3,750	2,950	2,590	2,320	2,040	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	10,100	2,710	4,520	1,340	50
November	8,500	2,970	4,850	1,320	50
December	9,640	3,020	5,100	1,120	50
January	6,640	3,070	5,200	901	50
February	7,950	3,040	5,150	1,040	50
March	9,190	2,760	5,170	1,490	50
April	11,100	2,490	5,350	1,910	50
May	14,300	2,060	6,190	3,030	50
June	20,700	1,530	8,530	5,000	50
July	16,600	2,450	6,060	3,140	50
August	7,590	1,970	4,420	1,300	50
September	10,000	2,080	4,300	1,390	50
Annual	8,500	3,010	5,400	1,430	50

06068500 Little Prickly Pear Creek near Marysville, Mont.
Site Number 49

LOCATION.--Lat 46°47'16", long 112°24'24" (NAD 27), in SW¼ sec.18 T.12 N., R.6 W., Lewis and Clark County, 0.5 mi (revised) downstream from Deadman Creek and 6 mi northeast of Marysville.
DRAINAGE AREA.--44.4 mi ^{2}.
PERIOD OF RECORD.--19 years (1913-32).
GAGE.--Staff gage. Altitude of gage is 4,700 ft (NGVD 29, from topographic map). Apr. 12 to May 23, 1913, at site just downstream from mouth of Deadman Creek at different datum.
REMARKS.--Some diversions for irrigation upstream from station.

Magnitude and probability of annual low flow
based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.4	3.1	2.5	2.1	--	--
3	4.4	3.1	2.6	2.2	--	--
7	4.4	3.1	2.6	2.2	--	--
14	4.7	3.5	2.9	2.6	--	--
30	5.4	4.2	3.7	3.4	--	--
60	6.6	5.4	4.8	4.3	--	--
90	7.7	6.3	5.6	5.1	--	--
120	8.7	7.0	6.2	5.6	--	--
183	11	8.3	7.2	6.4	--	--

Magnitude and probability of seasonal low flow from
March-June based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.7	3.7	2.9	2.4	--	--
3	5.7	3.7	3.0	2.4	--	--
7	5.9	3.9	3.0	2.5	--	--
14	6.5	4.2	3.4	2.8	--	--
30	7.8	5.1	4.2	3.6	--	--

Magnitude and probability of seasonal low flow from
November-February based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.3	3.9	3.3	2.8	--	--
3	5.4	4.0	3.3	2.8	--	--
7	5.4	4.0	3.3	2.8	--	--
14	5.5	4.2	3.5	3.1	--	--
30	5.8	4.6	4.0	3.6	--	--

Duration of daily mean flows based on 19 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
3.4	4.1	4.8	5.8	7.1	8.9	12	14
40%	30%	20%	15%	10%	5%	2%	1%
18	22	32	44	63	107	168	215

Magnitude and probability of annual high flow
based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	156	243	288	332	--	--
3	151	232	273	313	--	--
7	138	212	251	289	--	--
15	117	182	219	258	--	--
30	96	154	190	234	--	--
60	74	118	147	184	--	--
90	61	95	115	140	--	--

Magnitude and probability of seasonal low flow from
July-October based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	11	7.6	6.1	5.0	--	--
3	11	8.0	6.6	5.6	--	--
7	12	8.3	6.9	5.9	--	--
14	12	8.6	7.1	6.0	--	--
30	12	9.2	7.7	6.6	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	18	7.2	13	3.9	20
November	16	4.6	11	3.4	20
December	14	5.3	9.4	2.4	20
January	11	5.0	7.9	1.9	19
February	10	3.5	6.1	1.8	19
March	24	3.3	9.4	5.5	19
April	64	5.0	30	18	20
May	190	23	87	44	20
June	245	17	78	60	20
July	67	8.7	32	16	20
August	28	7.2	19	6.4	20
September	20	7.3	14	4.0	20
Annual	51	8.8	26	10	19

06071000 Little Prickly Pear Creek near Canyon Creek, Mont.
Site Number 50

LOCATION.--Lat 46°49'08", long 112°15'01" (NAD 27), in NW¼ sec.9, T.12 N., R.5 W., Lewis and Clark County, 0.5 mi downstream from Canyon Creek and 1 mi (revised) northeast of Canyon Creek Post Office.
DRAINAGE AREA.--183 mi^2.
PERIOD OF RECORD.--13 years (1909-11, 1913-24).
GAGE.--Staff gage. Altitude of gage is 4,240 ft (NGVD 29, from topographic map). Prior to June 2, 1917, at site 0.25 mi downstream at different datum.
REMARKS.--Flow is greatly affected by diversions for irrigation upstream from station.

Magnitude and probability of annual low flow
based on 10 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	0.66	0.13	0.00	0.00	--	--
3	.78	.16	.00	.00	--	--
7	1.3	.29	.00	.00	--	--
14	1.8	.49	.24	.14	--	--
30	3.1	.97	.53	.32	--	--
60	7.0	2.1	1.0	.51	--	--
90	11	5.0	3.0	1.9	--	--
120	13	6.4	4.1	2.7	--	--
183	17	9.8	6.8	4.8	--	--

Magnitude and probability of seasonal low flow from
March-June based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	10	0.71	0.02	0.00	--	--
3	11	.84	.03	.00	--	--
7	13	1.2	.05	.00	--	--
14	15	2.5	.80	.27	--	--
30	31	8.2	2.9	1.1	--	--

Magnitude and probability of seasonal low flow from
November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	16	9.2	6.1	4.1	--	--
3	16	9.8	7.0	5.0	--	--
7	17	11	8.0	6.1	--	--
14	17	12	9.9	8.2	--	--
30	19	14	12	11	--	--

Duration of daily mean flows based on 12 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.27	0.54	1.8	4.7	13	18	22	27
40%	30%	20%	15%	10%	5%	2%	1%
31	41	64	88	139	232	337	418

Magnitude and probability of annual high flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	282	398	444	--	--	--
3	271	384	425	--	--	--
7	252	358	395	--	--	--
15	219	320	358	--	--	--
30	181	272	309	--	--	--
60	139	209	240	--	--	--
90	111	168	194	--	--	--

Magnitude and probability of seasonal low flow from
July-October based on 15 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1.7	0.21	0.00	0.00	--	--
3	1.9	.23	.00	.00	--	--
7	2.3	.47	.14	.00	--	--
14	2.9	.86	.46	.27	--	--
30	4.0	1.3	.75	.47	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	44	4.9	23	9.4	15
November	40	10	25	8.8	15
December	49	12	24	8.6	15
January	44	13	23	8.1	13
February	47	13	25	10	13
March	80	20	41	20	13
April	181	23	83	41	15
May	458	9.4	189	116	15
June	291	.40	111	96	14
July	134	.66	32	40	15
August	36	.84	13	11	15
September	38	2.2	20	11	15
Annual	79	12	44	18	12

06071300 Little Prickly Pear Creek at Wolf Creek, Mont.
Site Number 51

LOCATION.--Lat 47°00'19", long 112°04'10" (NAD 27), in NE¼NW¼NE¼ sec.2, T.14 N., R.4 W., Lewis and Clark County, Hydrologic Unit 10030102, on right bank 30 ft downstream from Interstate 15 access road bridge, 500 ft southwest of Wolf Creek Post Office, 0.5 mi downstream from Wolf Creek, and at river mile 3.2.

DRAINAGE AREA.--381 mi^2.

PERIOD OF RECORD.--May 1962 to September 1967, October 1991 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 3,547.38 ft (NGVD 29). May 10, 1962, to July 6, 1965, water-stage recorder on left bank at present datum. July 7, 1965, to Apr. 11, 1966, non-recording gage on bridge 0.25 mi upstream at datum 3.27 ft higher. Apr. 12, 1966, to Sept. 30, 1967, water-stage recorder on right bank 23 ft upstream at present datum.

REMARKS.--Diversions for irrigation of about 2,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 15 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	19	14	11	9.8	--	--
3	21	15	12	10	--	--
7	24	17	14	11	--	--
14	28	19	15	13	--	--
30	32	22	17	14	--	--
60	36	24	19	16	--	--
90	38	27	22	18	--	--
120	40	29	24	20	--	--
183	42	31	27	24	--	--

Magnitude and probability of seasonal low flow from
March-June based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	34	23	19	16	--	--
3	35	24	20	17	--	--
7	39	28	24	20	--	--
14	48	35	29	25	--	--
30	58	41	33	27	--	--

Magnitude and probability of seasonal low flow from
November-February based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	21	16	15	13	--	--
3	23	18	16	15	--	--
7	27	21	19	17	--	--
14	32	26	23	21	--	--
30	39	31	27	24	--	--

Duration of daily mean flows based on 16 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
15	18	24	28	36	43	50	58
40%	30%	20%	15%	10%	5%	2%	1%
65	82	110	131	182	300	519	677

Magnitude and probability of annual high flow
based on 16 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	495	1,040	1,510	2,210	--	--
3	438	862	1,200	1,670	--	--
7	363	671	902	1,210	--	--
15	297	525	691	910	--	--
30	237	428	580	799	--	--
60	193	348	477	671	--	--
90	162	281	378	522	--	--

Magnitude and probability of seasonal low flow from
July-October based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	30	18	13	10	--	--
3	31	18	14	11	--	--
7	32	19	14	12	--	--
14	33	20	15	13	--	--
30	35	22	17	14	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	131	30	52	28	16
November	98	32	54	17	16
December	75	26	50	13	16
January	69	31	45	11	16
February	190	29	61	40	16
March	102	42	66	18	16
April	372	65	134	87	16
May	580	36	235	178	17
June	684	26	210	184	17
July	175	18	83	47	17
August	95	14	47	24	17
September	127	18	50	32	17
Annual	179	35	90	42	16

06073000 Dearborn River near Clemons, Mont.
Site Number 52

LOCATION.--Lat 47°17'30", long 112°27'00" (NAD 27), in SE¼ SE¼ sec.23, T.18 N., R.7 W., Lewis and Clark County, on right bank 300 ft upstream from highway bridge, 0.5 mi southeast of former post office at Clemons, 2 mi downstream from Falls Creek, and 14 mi south of Augusta.

DRAINAGE AREA.--123 mi^2 .

PERIOD OF RECORD.--26 years. April 1921 to September 1923, May 1929 to September 1953. May 1908 to December 1911 at site 2.5 mi upstream; records not equivalent owing to tributary inflow (published as "above Falls Creek, near Clemons" in WSP 1309). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 4,560 ft (NGVD 29, by barometer). Prior to Apr. 8, 1931, wire-weight gage at same site and datum.

REMARKS.--Diversions for irrigation of about 2,500 acres in Flat Creek drainage, all of which lies downstream from station.

Magnitude and probability of annual low flow
based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	16	11	8.6	7.3	--	--
3	16	11	8.7	7.4	--	--
7	16	11	9.2	7.8	--	--
14	17	12	9.7	8.2	--	--
30	19	13	10	8.7	--	--
60	23	15	12	9.9	--	--
90	27	18	14	12	--	--
120	30	21	17	14	--	--
183	33	23	19	17	--	--

Magnitude and probability of seasonal low flow from
March-June based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	25	19	17	16	15	--
3	26	20	18	16	15	--
7	27	21	18	17	15	--
14	29	22	20	18	17	--
30	31	24	22	20	19	--

Magnitude and probability of seasonal low flow from
November-February based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	22	18	16	15	14	--
3	23	18	16	16	14	--
7	25	20	18	16	15	--
14	26	20	18	17	15	--
30	27	21	19	17	16	--

Duration of daily mean flows based on 26 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
10	12	16	19	25	29	34	42
40%	30%	20%	15%	10%	5%	2%	1%
53	75	141	216	339	529	805	1,050

Magnitude and probability of annual high flow
based on 26 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,090	1,790	2,120	2,400	2,540	--
3	1,010	1,630	1,920	2,160	2,280	--
7	851	1,350	1,580	1,780	1,870	--
15	684	1,080	1,270	1,440	1,520	--
30	542	853	1,010	1,150	1,220	--
60	422	653	762	856	904	--
90	326	514	610	700	749	--

Magnitude and probability of seasonal low flow from
July-October based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	16	11	8.7	7.4	6.2	--
3	16	11	8.8	7.4	6.3	--
7	17	11	9.3	7.8	6.7	--
14	18	12	9.8	8.3	7.1	--
30	20	13	10	8.8	7.4	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	111	11	44	24	26
November	125	22	45	24	26
December	97	20	39	19	26
January	65	18	33	12	26
February	51	18	31	11	26
March	104	18	36	18	26
April	440	25	129	105	27
May	675	50	375	160	28
June	1,210	23	451	309	28
July	364	14	123	101	28
August	213	10	47	43	28
September	109	9.4	35	22	28
Annual	214	24	116	55	26

06073500 Dearborn River near Craig, Mont.
Site Number 53

LOCATION.--Lat 47°11'57", long 112°05'44" (NAD 27), in NW¼ NW¼ SE¼ sec.27, T.17 N., R.4 W., Lewis and Clark County, Hydrologic Unit 10030102, on left bank at upstream side of bridge on U.S. Highway 287, 7.0 mi downstream from South Fork Dearborn River, 10.5 mi northwest of Craig, 13.5 mi north of Wolf Creek, and at river mile 19.0.

DRAINAGE AREA.--325 mi^2.

PERIOD OF RECORD.--October 1945 to September 1969, October 1993 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 3,800 ft (NGVD 29). Oct. 1, 1945, to Sept. 30, 1946, nonrecording gage; Oct. 1, 1946, to June 9, 1964, water-stage recorder on upstream side of bridge; June 10, 1964, to May 31, 1965, nonrecording gage; June 1, 1965, to Sept. 30 1969, water-stage recorder on downstream side of abandoned bridge, all at same datum.

REMARKS.--U.S. Geological Survey satellite telemeter at station.

Magnitude and probability of annual low flow
based on 31 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	25	18	14	12	9.3	--
3	27	19	16	13	10	--
7	29	21	17	14	11	--
14	32	22	18	15	12	--
30	37	25	20	16	12	--
60	42	29	23	19	15	--
90	49	35	29	23	18	--
120	55	40	33	28	23	--
183	58	42	36	31	27	--

Magnitude and probability of seasonal low flow from
March-June based on 33 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	43	30	25	21	17	--
3	45	32	27	23	20	--
7	48	35	30	26	22	--
14	52	40	35	32	29	--
30	75	52	44	38	32	--

Magnitude and probability of seasonal low flow from
November-February based on 32 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	29	22	20	18	16	--
3	31	24	21	19	17	--
7	34	26	24	22	20	--
14	39	31	27	24	21	--
30	46	35	30	27	24	--

Duration of daily mean flows based on 33 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
17	21	28	35	44	54	63	79
40%	30%	20%	15%	10%	5%	2%	1%
99	143	251	368	564	865	1,340	1,790

Magnitude and probability of annual high flow
based on 33 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,650	3,180	4,610	6,980	9,240	--
3	1,530	2,800	3,870	5,520	6,970	--
7	1,330	2,240	2,930	3,880	4,630	--
15	1,090	1,760	2,250	2,900	3,410	--
30	895	1,380	1,710	2,110	2,410	--
60	700	1,060	1,290	1,570	1,770	--
90	561	833	1,000	1,200	1,330	--

Magnitude and probability of seasonal low flow from
July-October based on 31 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	33	20	16	12	9.2	--
3	34	21	17	13	10	--
7	35	22	17	14	11	--
14	36	23	18	15	12	--
30	40	26	20	16	13	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	187	17	74	39	33
November	165	34	75	31	33
December	155	24	67	29	33
January	104	22	57	20	33
February	184	22	61	29	33
March	187	34	84	37	33
April	518	51	236	129	33
May	1,340	135	692	302	33
June	2,100	113	784	545	33
July	583	27	213	131	33
August	163	13	69	39	33
September	230	19	58	43	34
Annual	363	58	206	80	33

06074000 Missouri River at Cascade, Mont.
Site Number 54

LOCATION.--Lat 47°16'10", long 111°41'43" (NAD 27), in SW¼NE¼ sec.35, T.18 N., R.1 W., Cascade County, at highway bridge at Cascade.
DRAINAGE AREA.--18,493 mi^2.
PERIOD OF RECORD.--13 years (1902-15).
GAGE.--Chain gage. Altitude of gage is 3,337.8 ft (NGVD 29).
REMARKS.--Diversions for irrigation of about 588,000 acres upstream from station. Flow regulated by Hauser Lake and Canyon Ferry powerplants.

Magnitude and probability of annual low flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	1,890	1,350	1,080	873	--	--
3	2,050	1,570	1,350	1,180	--	--
7	2,260	1,850	1,670	1,530	--	--
14	2,350	1,940	1,760	1,620	--	--
30	2,470	2,040	1,840	1,700	--	--
60	2,740	2,290	2,080	1,910	--	--
90	3,040	2,580	2,340	2,150	--	--
120	3,360	2,790	2,510	2,290	--	--
183	3,610	3,010	2,720	2,480	--	--

Magnitude and probability of seasonal low flow from
March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,640	2,470	1,820	1,330	--	--
3	3,820	2,710	2,090	1,600	--	--
7	3,890	3,350	3,100	2,910	--	--
14	4,170	3,530	3,230	3,000	--	--
30	4,340	3,540	3,260	3,070	--	--

Magnitude and probability of seasonal low flow from
November-February based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2,650	2,440	2,350	2,290	--	--
3	2,770	2,540	2,430	2,360	--	--
7	2,870	2,620	2,500	2,400	--	--
14	2,950	2,700	2,560	2,440	--	--
30	3,010	2,740	2,580	2,450	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
1,630	1,790	2,220	2,450	2,910	3,340	3,740	4,150
40%	30%	20%	15%	10%	5%	2%	1%
4,970	6,030	8,410	10,700	13,900	19,000	25,000	31,600

Magnitude and probability of annual high flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	25,100	34,800	40,800	47,900	--	--
3	24,600	33,900	39,600	46,200	--	--
7	23,700	32,200	37,300	43,000	--	--
15	22,100	29,800	34,300	39,400	--	--
30	19,900	26,300	30,000	34,200	--	--
60	16,700	20,900	22,700	24,300	--	--
90	14,100	17,100	18,200	19,100	--	--

Magnitude and probability of seasonal low flow from
July-October based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2,140	1,590	1,280	1,030	--	--
3	2,170	1,720	1,510	1,360	--	--
7	2,280	1,860	1,690	1,550	--	--
14	2,370	1,960	1,780	1,640	--	--
30	2,570	2,050	1,860	1,710	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	6,320	2,160	4,320	1,470	13
November	6,150	2,900	4,370	1,130	13
December	4,300	2,700	3,480	473	13
January	3,600	2,300	3,130	395	13
February	5,700	3,000	3,500	754	13
March	9,350	3,100	4,810	1,640	13
April	11,500	3,640	7,430	2,110	13
May	15,900	3,940	11,600	3,560	13
June	36,700	8,080	18,900	7,720	13
July	18,700	2,840	7,790	3,930	14
August	6,010	1,800	3,410	1,360	14
September	5,370	1,930	3,360	1,140	14
Annual	7,910	3,660	6,360	1,250	13

06074500 Smith River near White Sulphur Springs, Mont.
Site Number 55

LOCATION.--Lat 46°40'18", long 110°43'24" (NAD 27), near center of sec.33, T.11 N., R.8 E., Meagher County, at Meachen Ranch, 12 mi (revised) northeast of White Sulphur Springs.
DRAINAGE AREA.--30.7 mi^2.
PERIOD OF RECORD.--11 years (1922-31, 1934-36).
GAGE.--Chain gage. Altitude of gage is 5,600 ft (NGVD 29, from topographic map). Prior to Jun. 27, 1927, staff gage at site 150 ft downstream at same datum.
REMARKS.--A few small diversions for irrigation upstream from station.

Magnitude and probability of annual low flow
based on 10 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	2.9	1.9	1.6	1.4	--	--
3	3.0	2.0	1.7	1.4	--	--
7	3.2	2.2	1.8	1.5	--	--
14	3.5	2.4	2.0	1.7	--	--
30	4.0	2.8	2.3	2.0	--	--
60	4.8	3.4	2.8	2.4	--	--
90	5.7	4.0	3.3	2.9	--	--
120	6.6	4.6	3.9	3.3	--	--
183	7.6	5.3	4.3	3.6	--	--

Magnitude and probability of seasonal low flow from
March-June based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.3	3.0	2.4	2.0	--	--
3	5.5	3.1	2.4	2.0	--	--
7	5.8	3.3	2.5	2.0	--	--
14	6.1	3.7	2.9	2.5	--	--
30	7.5	4.9	4.0	3.5	--	--

Magnitude and probability of seasonal low flow from
November-February based on 10 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3.8	2.4	1.9	1.5	--	--
3	3.9	2.5	1.9	1.5	--	--
7	4.1	2.7	2.1	1.7	--	--
14	4.2	2.8	2.2	1.8	--	--
30	4.4	3.1	2.5	2.1	--	--

Duration of daily mean flows based on 11 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
2.0	2.4	3.2	4.2	5.4	6.6	7.8	10
40%	30%	20%	15%	10%	5%	2%	1%
13	17	25	34	50	78	123	170

Magnitude and probability of annual high flow
based on 11 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	125	244	338	--	--	--
3	109	209	289	--	--	--
7	97	181	247	--	--	--
15	83	151	205	--	--	--
30	73	131	175	--	--	--
60	62	105	134	--	--	--
90	50	83	104	--	--	--

Magnitude and probability of seasonal low flow from
July-October based on 10 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.8	2.7	2.0	1.6	--	--
3	5.1	3.0	2.3	1.9	--	--
7	5.5	3.2	2.5	2.0	--	--
14	6.2	3.7	2.8	2.3	--	--
30	7.2	4.2	3.2	2.5	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	16	4.0	10	4.0	11
November	18	2.9	9.3	4.2	11
December	12	2.9	7.5	3.5	11
January	8.0	3.0	5.5	1.8	11
February	11	2.0	5.8	2.4	12
March	27	3.5	9.5	6.5	12
April	69	9.9	34	23	12
May	135	16	59	33	12
June	250	12	58	65	12
July	64	6.2	22	17	12
August	27	3.8	11	7.7	12
September	18	2.3	8.8	5.2	12
Annual	43	7.3	21	10	11

06076690 Smith River near Fort Logan, Mont.
Site Number 56

LOCATION.--Lat 46°47'45", long 111°10'41" (NAD 27), in NE¼SW¼SW¼ sec.13, T.12 N., R.4 E., Meagher County, Hydrologic Unit 10030103, on left bank, 15 ft downstream from ranch bridge, 1.0 mi upstream from Sheep Creek, 9.0 mi north of Fort Logan, and at river mile 83.7.
DRAINAGE AREA.--846 mi^2.
PERIOD OF RECORD.--October 1977 to September 1996 (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 4,400 ft (NGVD 29, from topographic map).
REMARKS.--Flow slightly regulated by Smith River Reservoir (station number 06075000). Diversions for irrigation of about 19,300 acres upstream from station.

Magnitude and probability of annual low flow
based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	48	34	27	22	--	--
3	51	36	29	24	--	--
7	57	39	31	26	--	--
14	60	41	33	26	--	--
30	67	45	36	29	--	--
60	74	52	42	35	--	--
90	81	57	47	39	--	--
120	86	63	53	46	--	--
183	89	67	58	52	--	--

Magnitude and probability of seasonal low flow from
March-June based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	76	50	38	30	--	--
3	80	52	40	32	--	--
7	90	59	45	36	--	--
14	106	69	53	42	--	--
30	125	83	67	56	--	--

Magnitude and probability of seasonal low flow from
November-February based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	53	41	35	32	--	--
3	58	44	39	35	--	--
7	64	50	43	38	--	--
14	72	55	47	41	--	--
30	80	61	51	44	--	--

Duration of daily mean flows based on 19 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
34	38	48	57	72	84	97	112
40%	30%	20%	15%	10%	5%	2%	1%
127	156	189	236	298	401	590	744

Magnitude and probability of annual high flow
based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	640	1,310	1,920	2,910	--	--
3	564	1,090	1,550	2,260	--	--
7	468	867	1,200	1,680	--	--
15	384	686	926	1,270	--	--
30	333	560	731	966	--	--
60	276	439	554	703	--	--
90	248	380	469	578	--	--

Magnitude and probability of seasonal low flow from
July-October based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	62	39	30	24	--	--
3	64	40	32	26	--	--
7	66	42	33	27	--	--
14	68	43	33	27	--	--
30	71	46	37	31	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	272	64	116	48	19
November	237	50	108	39	19
December	220	46	99	38	19
January	146	46	90	28	19
February	373	49	120	72	19
March	399	82	163	76	19
April	363	79	181	83	19
May	798	63	264	170	19
June	833	46	304	201	19
July	445	37	175	122	19
August	276	27	90	53	19
September	299	50	102	56	19
Annual	244	64	151	56	19

06077000 Sheep Creek near White Sulphur Springs, Mont.
Site Number 57

LOCATION.--Lat 46°46'05", long 110°48'33" (NAD 27), SW¼SW¼SE¼ sec.26, T.12 N., R.7 E., Meagher County, Lewis and Clark National Forest, on right bank 7 mi upstream from Moose Creek and 16 mi north of White Sulphur Springs.
DRAINAGE AREA.--42.8 mi^2.
PERIOD OF RECORD.--31 years. July 1941 to September 1972 (discontinued).
REVISED RECORDS.--WSP 1309: 1942(M). WSP 1559: Drainage area.
GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft (NGVD 29, by barometer). Prior to Oct 1, 1942, nonrecording gages at site 1,000 ft upstream at datum 7.03 ft higher, and Oct. 1, 1942, to May 3, 1955, at site 700 ft upstream at datum 5.33 ft higher.
REMARKS.--Diversions for irrigation of about 200 acres upstream from station.

Magnitude and probability of annual low flow
based on 30 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.7	4.7	4.2	3.8	3.4	--
3	6.0	4.9	4.4	4.0	3.5	--
7	6.6	5.4	4.9	4.4	4.0	--
14	7.1	5.9	5.3	4.8	4.3	--
30	7.8	6.6	6.0	5.5	5.1	--
60	8.9	7.4	6.7	6.2	5.6	--
90	9.5	8.0	7.3	6.8	6.3	--
120	10	8.7	8.0	7.4	6.9	--
183	12	10	9.7	9.2	8.7	--

Magnitude and probability of seasonal low flow from
March-June based on 31 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	6.9	5.8	5.2	4.7	4.2	--
3	7.2	5.9	5.3	4.8	4.2	--
7	7.6	6.3	5.6	5.2	4.6	--
14	7.8	6.6	6.1	5.8	5.5	--
30	8.5	7.3	6.9	6.7	6.5	--

Magnitude and probability of seasonal low flow from
November-February based on 31 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	6.3	5.0	4.4	3.9	3.4	--
3	6.6	5.3	4.7	4.2	3.6	--
7	7.2	5.9	5.2	4.7	4.1	--
14	7.8	6.3	5.6	5.0	4.4	--
30	8.4	6.9	6.2	5.6	5.0	--

Duration of daily mean flows based on 31 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
5.4	5.9	6.5	7.6	9.5	11	13	16
40%	30%	20%	15%	10%	5%	2%	1%
19	26	41	57	82	123	189	243

Magnitude and probability of annual high flow
based on 31 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	191	276	339	427	498	--
3	182	262	321	404	471	--
7	168	240	293	368	429	--
15	151	214	262	327	380	--
30	131	185	224	278	322	--
60	102	138	163	195	220	--
90	82	109	126	147	163	--

Magnitude and probability of seasonal low flow from
July-October based on 30 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	11	10	9.7	9.3	--
3	13	11	10	9.8	9.3	--
7	13	11	11	10	9.5	--
14	14	12	11	10	9.9	--
30	15	12	11	11	10	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	34	9.9	16	4.6	31
November	24	8.3	13	3.2	31
December	17	6.1	10	2.3	31
January	13	5.9	9.2	1.9	31
February	14	6.2	9.1	1.9	31
March	21	6.2	9.4	2.8	31
April	47	9.0	21	11	31
May	169	46	95	35	31
June	232	44	115	56	31
July	84	19	43	14	31
August	39	11	23	6.5	32
September	36	10	18	5.0	32
Annual	51	18	32	8.3	31

06077500 Smith River near Eden, Mont.
Site Number 58

LOCATION.--Lat 47°11'24", long 111°23'12" (NAD 27), in SW¼SW¼ sec.29, T.17 N., R.3 E., Cascade County, on left bank 0.3 mi upstream from Mullens Creek, 2.3 mi upstream from Hound Creek, and 7.7 mi southeast of Eden.
DRAINAGE AREA.--1,594 mi^2.
PERIOD OF RECORD.--18 years. April 1951 to September 1969 (discontinued).
REVISED RECORDS.--WSP 1559: Drainage area.
GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft (NGVD 29, by barometer).
REMARKS.--Flow affected by storage in Smith River Reservoir. Diversions for irrigation of about 24,500 acres upstream from station.

Magnitude and probability of annual low flow
based on 17 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	30	12	7.3	4.7	--	--
3	37	16	9.6	6.1	--	--
7	51	24	14	8.8	--	--
14	61	31	20	13	--	--
30	73	42	29	21	--	--
60	85	51	38	30	--	--
90	96	60	46	37	--	--
120	104	68	54	44	--	--
183	110	70	56	47	--	--

Magnitude and probability of seasonal low flow from
March-June based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	84	51	39	32	--	--
3	88	55	44	36	--	--
7	100	66	54	45	--	--
14	113	76	61	51	--	--
30	160	107	87	72	--	--

Magnitude and probability of seasonal low flow from
November-February based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	31	14	9.3	6.5	--	--
3	37	19	14	10	--	--
7	51	29	22	17	--	--
14	63	39	29	23	--	--
30	74	49	39	33	--	--

Duration of daily mean flows based on 18 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
21	30	45	61	88	111	136	168
40%	30%	20%	15%	10%	5%	2%	1%
213	299	450	588	836	1,340	2,140	2,760

Magnitude and probability of annual high flow
based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	1,780	3,300	4,800	7,470	--	--
3	1,660	3,000	4,270	6,450	--	--
7	1,530	2,640	3,620	5,200	--	--
15	1,360	2,290	3,070	4,280	--	--
30	1,210	2,020	2,680	3,660	--	--
60	964	1,580	2,030	2,670	--	--
90	786	1,250	1,580	2,020	--	--

Magnitude and probability of seasonal low flow from
July-October based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	102	39	19	9.9	--	--
3	105	41	21	11	--	--
7	108	44	23	12	--	--
14	110	48	28	16	--	--
30	114	56	36	25	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	501	52	169	111	18
November	370	57	150	81	18
December	260	31	110	62	18
January	212	43	99	52	18
February	350	49	137	78	18
March	372	63	179	81	18
April	1,160	137	393	258	19
May	2,090	289	955	517	19
June	3,120	279	1,190	869	19
July	833	36	374	222	19
August	344	16	158	93	19
September	537	30	154	124	19
Annual	614	107	338	159	18

06078200 Missouri River near Ulm, Mont.
Site Number 59

LOCATION.--Lat 47°26'06", long 111°23'07" (NAD 27), in NE¼NW¼NW¼ sec.5, T.19 N., R.3 E., Cascade County, Hydrologic Unit 10030102, on left bank 5.6 mi east of Ulm, 9.1 mi downstream from Smith River, and at river mile 2,140.4.
DRAINAGE AREA.--20,941 mi^2.
PERIOD OF RECORD.--August 1957 to current year (2002).
GAGE.--Water-stage recorder. Altitude of gage is 3,313.27 ft (NGVD 29).
REMARKS.--Flow regulated by 10 smaller irrigation reservoirs and powerplants, Clark Canyon Reservoir (station number 06015300), and Canyon Ferry Lake (station number 06058500). Diversions for irrigation of about 630,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

Magnitude and probability of annual low flow
based on 44 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,390	2,690	2,380	2,150	1,910	--
3	3,510	2,820	2,520	2,300	2,070	--
7	3,670	2,960	2,650	2,420	2,190	--
14	3,770	3,080	2,780	2,550	2,330	--
30	3,950	3,210	2,880	2,640	2,400	--
60	4,160	3,370	3,020	2,770	2,510	--
90	4,380	3,520	3,150	2,880	2,610	--
120	4,550	3,670	3,290	3,010	2,730	--
183	4,880	3,930	3,510	3,190	2,850	--

Magnitude and probability of seasonal low flow from
March-June based on 45 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4,290	3,150	2,660	2,310	1,970	--
3	4,410	3,280	2,810	2,480	2,150	--
7	4,580	3,420	2,930	2,580	2,240	--
14	4,810	3,620	3,110	2,750	2,390	--
30	5,160	3,910	3,380	2,990	2,610	--

Magnitude and probability of seasonal low flow from
November-February based on 45 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4,120	3,440	3,140	2,920	2,690	--
3	4,280	3,570	3,260	3,020	2,780	--
7	4,460	3,730	3,390	3,130	2,850	--
14	4,580	3,810	3,460	3,190	2,900	--
30	4,750	3,930	3,540	3,250	2,950	--

Duration of daily mean flows based on 45 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
2,440	2,690	3,180	3,450	3,990	4,540	5,100	5,670
40%	30%	20%	15%	10%	5%	2%	1%
6,310	7,210	8,120	8,580	10,500	14,300	19,600	22,900

Magnitude and probability of annual high flow
based on 45 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	14,900	21,900	26,000	30,700	33,900	--
3	14,500	21,500	25,700	30,500	33,700	--
7	13,900	20,700	24,900	29,900	33,300	--
15	13,000	19,600	23,800	29,100	32,900	--
30	11,700	17,600	21,500	26,400	30,000	--
60	10,300	14,800	17,600	21,000	23,400	--
90	9,360	13,000	15,300	17,900	19,800	--

Magnitude and probability of seasonal low flow from
July-October based on 44 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	3,530	2,780	2,460	2,230	2,000	--
3	3,670	2,920	2,600	2,360	2,130	--
7	3,830	3,070	2,740	2,500	2,260	--
14	3,940	3,170	2,850	2,610	2,380	--
30	4,080	3,270	2,920	2,670	2,420	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	10,000	2,200	4,160	1,390	45
November	7,950	2,920	4,690	1,240	45
December	6,790	3,020	4,650	1,060	45
January	6,760	3,100	5,080	971	45
February	8,000	3,000	5,150	1,220	45
March	8,820	2,820	5,010	1,440	45
April	9,320	2,370	5,290	1,690	45
May	15,300	2,520	6,380	2,880	45
June	17,500	1,700	7,420	4,100	45
July	9,930	2,200	4,860	1,810	45
August	7,280	2,230	4,220	1,300	46
September	9,340	1,900	3,940	1,370	46
Annual	5,800	1,700	3,220	787	45

06078500 North Fork Sun River near Augusta, Mont.
Site Number 60

LOCATION.--Lat 47°38'27", long 112°51'34" (NAD 27), in SW¼SW¼SW¼ sec.23, T.22 N., R.10 W., Teton County, Hydrologic Unit 10030104, on left bank 400 ft upstream from Arsenic Creek, 1 mi upstream from South Fork and Gibson Reservoir, and 25 mi northwest of Augusta.

DRAINAGE AREA.--258 mi^2.

PERIOD OF RECORD.--May 1911 to September 1912, October 1945 to September 1968, May 1989 to September 1993 (discontinued, seasonal records only). Monthly discharge only for some periods, published in WSP 1309. Prior to October 1959, published as "North Fork of North Fork Sun River near Augusta."

GAGE.--Water-stage recorder. Altitude of gage is 4,785.72 ft (NGVD 29, levels by Bureau of Reclamation). May 27, 1911, to Sept. 30, 1912, staff gage near present site at different datum. Oct. 1, 1945, to July 22, 1946, wire-weight gage at site 0.75 mi downstream at different datum. July 23, 1946, to June, 8, 1964, water-stage recorder at present site and datum. Sept. 12, 1964, to Sept. 30, 1968, water-stage recorder at present site and datum.

REMARKS.--No known regulation or diversion upstream from station.

Magnitude and probability of annual low flow
based on 23 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	40	35	32	31	--	--
3	42	36	33	31	--	--
7	44	39	36	34	--	--
14	48	43	41	39	--	--
30	54	48	45	43	--	--
60	62	55	51	49	--	--
90	69	60	56	54	--	--
120	75	65	61	58	--	--
183	89	74	68	64	--	--

Magnitude and probability of seasonal low flow from
March-June based on 24 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	48	40	37	35	--	--
3	50	42	39	37	--	--
7	52	45	42	40	--	--
14	57	49	46	43	--	--
30	64	54	50	47	--	--

Magnitude and probability of seasonal low flow from
November-February based on 24 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	44	37	33	31	--	--
3	46	38	34	32	--	--
7	50	41	37	35	--	--
14	54	45	42	39	--	--
30	59	51	47	44	--	--

Duration of daily mean flows based on 24 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
38	44	50	57	71	85	102	125
40%	30%	20%	15%	10%	5%	2%	1%
168	255	527	837	1,240	1,830	2,480	2,870

Magnitude and probability of annual high flow
based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	2,500	3,710	5,290	8,790	--	--
3	2,360	3,450	4,680	7,090	--	--
7	2,220	3,090	3,880	5,180	--	--
15	2,050	2,710	3,210	3,910	--	--
30	1,830	2,320	2,650	3,050	--	--
60	1,440	1,770	1,970	2,190	--	--
90	1,110	1,350	1,490	1,660	--	--

Magnitude and probability of seasonal low flow from
July-October based on 28 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	90	73	66	61	56	--
3	92	77	70	65	60	--
7	95	79	72	67	62	--
14	97	80	73	68	63	--
30	102	83	76	70	65	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	286	72	123	49	28
November	191	65	102	30	24
December	152	59	83	24	24
January	96	43	67	13	24
February	100	47	66	14	24
March	113	44	68	17	24
April	935	76	265	189	28
May	1,920	688	1,260	329	30
June	3,220	455	1,480	613	30
July	1,010	203	486	234	30
August	249	95	173	44	30
September	291	84	130	46	30
Annual	468	253	360	68	24

06080000 Sun River near Augusta, Mont.
Site Number 61

LOCATION.--Lat 47°37', long 112°42' (NAD 27), in NW¼ sec.36, T.22 N., R.9 W., Lewis and Clark County, about 150 ft upstream from diversion dam and 18 mi northwest of Augusta.

DRAINAGE AREA.--609 mi^2.

PERIOD OF RECORD.--37 years (1889-90, 1904-40).

GAGE.--Water-stage recorder. Altitude of gage is 4,474 ft (NGVD 29, levels by Bureau of Reclamation). Prior to Jan, 1, 1916, staff or chain gages at site 8 mi downstream at different datum. Jan. 1, 1916, to Sept. 30, 1936, slope gage on diversion dam 150 ft downstream at same datum.

REMARKS.--Flow regulated for 1916-36 and Pishkun Canal, data furnished by Bureau of Reclamation. Records for 1929-36 not previously published by U.S. Geological Survey.

Magnitude and probability of annual low flow
based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	128	74	49	33	--	--
3	130	91	73	60	--	--
7	136	102	87	76	--	--
14	141	109	96	86	--	--
30	149	117	104	94	--	--
60	181	139	120	107	--	--
90	197	148	127	112	--	--
120	220	162	138	121	--	--
183	259	193	162	140	--	--

Magnitude and probability of seasonal low flow from
March-June based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	154	103	67	43	24	--
3	159	119	103	92	82	--
7	167	127	112	101	91	--
14	172	131	115	105	95	--
30	183	137	122	113	104	--

Magnitude and probability of seasonal low flow from
November-February based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	147	106	90	79	69	--
3	152	111	95	84	74	--
7	159	115	99	87	76	--
14	164	119	102	90	78	--
30	170	126	109	97	85	--

Duration of daily mean flows based on 25 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
96	103	125	145	180	223	270	330
40%	30%	20%	15%	10%	5%	2%	1%
402	557	1,130	1,690	2,490	3,890	5,750	7,540

Magnitude and probability of annual high flow
based on 25 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	6,600	10,500	13,800	18,700	22,900	--
3	6,200	9,390	11,700	14,800	17,200	--
7	5,650	8,310	10,100	12,200	13,800	--
15	4,900	7,040	8,440	10,200	11,400	--
30	4,160	5,860	6,900	8,120	8,970	--
60	3,220	4,380	5,070	5,860	6,390	--
90	2,530	3,420	3,950	4,560	4,970	--

Magnitude and probability of seasonal low flow from
July-October based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	249	151	106	74	47	--
3	251	156	111	80	53	--
7	252	164	127	101	76	--
14	253	177	145	122	99	--
30	264	195	166	145	125	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	544	128	301	105	25
November	682	120	297	135	25
December	450	100	229	88	25
January	521	96	204	95	25
February	421	100	208	90	25
March	579	102	222	112	25
April	1,900	200	686	405	25
May	6,260	1,120	2,760	1,140	25
June	7,840	1,000	3,560	1,790	25
July	4,350	264	1,250	850	26
August	982	182	442	199	26
September	714	59	321	132	26
Annual	1,620	444	876	285	25

06080900 Sun River below diversion dam, near Augusta, Mont.
Site Number 62

LOCATION.--Lat 47°37'10", long 112°41'28" (NAD 27), near center of east line of sec.36, T.22 N., R.9 W., Lewis and Clark County, Hydrologic Unit 10030104, Lewis and Clark National Forest, on road bridge 1.0 mi downstream from diversion dam, 16.5 mi northwest of Augusta, and at river mile 96.4 (revised).
DRAINAGE AREA.--609 mi^2.
PERIOD OF RECORD.--September 1967 to Sept. 30, 1980 (discontinued).
GAGE.--Water-stage recorder. Altitude of gage is 14,370 ft (NGVD 29, from topographic map).
REMARKS.--Flow regulated by Gibson Dam (station number 06079500). Diversions upstream from station into Pishkun Canal and Willow Creek feeder canal for irrigation of about 91,000 acres downstream from station.

Magnitude and probability of annual low flow
based on 12 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	40	29	24	20	--	--
3	44	31	25	21	--	--
7	46	33	27	23	--	--
14	50	35	29	24	--	--
30	60	44	36	31	--	--
60	70	55	48	42	--	--
90	84	64	56	50	--	--
120	95	69	60	53	--	--
183	116	81	67	57	--	--

Magnitude and probability of seasonal low flow from
March-June based on 13 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	56	32	24	20	--	--
3	61	36	27	22	--	--
7	68	40	30	24	--	--
14	81	47	35	27	--	--
30	100	53	38	31	--	--

Magnitude and probability of seasonal low flow from
November-February based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	69	42	32	25	--	--
3	73	46	35	27	--	--
7	82	50	37	28	--	--
14	89	53	38	28	--	--
30	99	63	48	39	--	--

Duration of daily mean flows based on 13 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
30	36	47	56	72	87	112	141
40%	30%	20%	15%	10%	5%	2%	1%
167	201	323	505	1,140	2,260	4,010	5,420

Magnitude and probability of annual high flow
based on 13 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	5,020	10,900	14,800	19,200	--	--
3	4,730	9,580	12,500	15,400	--	--
7	3,990	7,540	9,460	11,300	--	--
15	3,170	5,820	7,250	8,620	--	--
30	2,470	4,460	5,540	6,570	--	--
60	1,710	3,000	3,720	4,430	--	--
90	1,270	2,180	2,670	3,150	--	--

Magnitude and probability of seasonal low flow from
July-October based on 12 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	51	34	27	23	--	--
3	53	36	30	25	--	--
7	55	39	33	28	--	--
14	60	43	37	33	--	--
30	71	59	54	51	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	470	50	139	110	13
November	468	58	141	107	13
December	295	41	136	71	13
January	238	56	133	56	13
February	198	48	125	51	13
March	276	40	138	78	13
April	910	35	279	293	13
May	3,600	289	1,330	1,020	13
June	6,260	230	2,180	1,640	13
July	1,680	71	423	467	13
August	282	64	137	71	13
September	299	60	120	66	13
Annual	818	112	440	210	13

06081500 Willow Creek near Augusta, Mont.
Site Number 63

LOCATION.--Lat 47°33', long 112°28' (NAD 27), in NW¼SW¼ sec.26, T.21 N., R.7 W., Lewis and Clark County, just downstream from Little Willow Creek and 5 mi (revised) northwest of Augusta.
DRAINAGE AREA.--96.1 mi^2.
PERIOD OF RECORD.--20 years (1905-25).
GAGE.--Chain gage. Altitude of gage is 4,150 ft (NGVD 29, by barometer). Prior to Aug. 22, 1905, staff gage at same site and datum.
REMARKS.--Diversions for irrigation of about 2,000 acres upstream from station.

Magnitude and probability of annual low flow
based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	4.6	1.5	0.49	0.00	--	--
3	4.6	1.6	.75	.37	--	--
7	5.0	1.8	.87	.44	--	--
14	5.7	2.1	1.0	.50	--	--
30	6.9	2.6	1.2	.59	--	--
60	7.6	3.0	1.5	.80	--	--
90	8.3	3.6	2.0	1.1	--	--
120	9.4	4.2	2.4	1.4	--	--
183	11	5.0	3.0	1.8	--	--

Magnitude and probability of seasonal low flow from
March-June based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	6.9	3.1	1.8	1.2	--	--
3	7.4	3.2	1.9	1.2	--	--
7	7.9	3.5	2.1	1.3	--	--
14	9.0	4.3	2.8	1.8	--	--
30	11	6.2	4.3	3.1	--	--

Magnitude and probability of seasonal low flow from
November-February based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	5.9	3.0	1.9	1.2	--	--
3	6.0	3.2	2.1	1.5	--	--
7	6.2	3.4	2.3	1.6	--	--
14	6.4	3.5	2.3	1.6	--	--
30	6.9	3.7	2.5	1.7	--	--

Duration of daily mean flows based on 19 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.77	1.2	2.1	4.2	6.4	7.9	10	13
40%	30%	20%	15%	10%	5%	2%	1%
17	23	32	42	57	90	183	294

Magnitude and probability of annual high flow
based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	165	429	707	1,200	--	--
3	144	365	599	1,020	--	--
7	123	306	502	860	--	--
15	102	249	405	692	--	--
30	83	187	292	477	--	--
60	65	137	203	313	--	--
90	54	108	156	233	--	--

Magnitude and probability of seasonal low flow from
July-October based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	7.1	2.1	0.67	0.00	--	--
3	7.3	2.2	.97	.45	--	--
7	7.7	2.5	1.1	.54	--	--
14	8.3	2.7	1.2	.56	--	--
30	9.2	2.9	1.3	.61	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	30	0.86	13	7.8	20
November	24	1.0	12	6.2	20
December	26	4.6	10	5.3	20
January	37	3.7	10	8.1	20
February	70	1.7	14	17	20
March	48	4.7	16	11	20
April	50	8.2	24	13	20
May	320	4.8	68	69	19
June	363	1.9	99	107	20
July	211	1.0	39	48	20
August	53	.46	18	15	20
September	35	.23	13	10	20
Annual	77	7.2	28	20	19

06084500 Elk Creek at Augusta, Mont.
Site Number 64

LOCATION.--Lat 47°29', long 111°23' (NAD 27), in NW¼ SE¼ sec.17, T.20 N., R.6 W., Lewis and Clark County, at old highway bridge 0.5 mi from Augusta and 6 mi upstream from mouth.
DRAINAGE AREA.--157 mi^2.
PERIOD OF RECORD.--20 years (1904-24).
GAGE.--Staff gage. Altitude of gage is 4,070 ft (NGVD 29, by barometer). Apr. 20, 1907, to December 1908, staff gage at site 300 ft upstream at different datum.
REMARKS.--Diversions for irrigation of about 4,500 acres upstream from station.

Magnitude and probability of annual low flow
based on 19 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	11	2.0	0.00	0.00	--	--
3	13	2.2	.00	.00	--	--
7	14	2.3	.41	.00	--	--
14	16	3.8	1.0	.00	--	--
30	17	5.5	2.4	1.0	--	--
60	20	8.0	4.2	2.3	--	--
90	23	9.9	5.5	3.2	--	--
120	28	13	8.3	5.2	--	--
183	32	18	13	9.2	--	--

Magnitude and probability of seasonal low flow from
March-June based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	24	6.0	1.9	0.00	--	--
3	25	7.4	3.2	1.4	--	--
7	31	13	6.8	3.8	--	--
14	33	16	10	6.9	--	--
30	36	19	13	9.0	--	--

Magnitude and probability of seasonal low flow from
November-February based on 19 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	22	16	13	12	--	--
3	22	16	13	12	--	--
7	22	16	14	12	--	--
14	23	16	14	12	--	--
30	23	17	14	12	--	--

Duration of daily mean flows based on 20 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
0.74	2.5	7.2	14	22	28	32	42
40%	30%	20%	15%	10%	5%	2%	1%
53	65	94	128	206	351	678	1,020

Magnitude and probability of annual high flow
based on 20 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	833	1,920	2,740	3,800	--	--
3	743	1,620	2,240	3,010	--	--
7	630	1,350	1,890	2,560	--	--
15	498	1,040	1,440	1,960	--	--
30	386	769	1,050	1,420	--	--
60	278	530	714	954	--	--
90	215	395	528	707	--	--

Magnitude and probability of seasonal low flow from
July-October based on 20 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	13	2.2	0.00	0.00	--	--
3	16	2.3	.00	.00	--	--
7	16	2.4	.51	.00	--	--
14	18	3.9	1.1	.00	--	--
30	21	5.6	2.4	1.1	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	99	14	46	25	21
November	99	15	44	23	21
December	60	10	34	15	20
January	65	10	28	15	20
February	97	12	32	19	20
March	115	20	47	27	20
April	164	26	68	42	20
May	965	10	262	214	20
June	1,280	4.9	385	377	20
July	417	2.6	105	100	20
August	119	1.0	45	37	20
September	114	.87	38	30	20
Annual	212	20	94	56	20

06085800 Sun River at Simms, Mont.
Site Number 65

LOCATION.--Lat 47°30'06", long 111°55'56" (NAD 27), in NW¼NW¼SE¼ sec.12, T.20 N., R.3 W., Cascade County, Hydrologic Unit 10030104, on left bank 5 ft downstream from bridge on Montana Secondary Highway 565, 0.7 mi downstream from Simms Creek, 0.7 mi north of Simms, and at river mile 45.0.

DRAINAGE AREA.--1,320 mi^2.

PERIOD OF RECORD.--May to June 1953 (in WSP 1320-B), May to June 1964 (in WSP 1840-B), April 1966 to September 1979, April 1997 to current year (2002).

REVISED RECORDS.--WDR MT-75-1: 1964 (M).

GAGE.--Water-stage recorder. Altitude of gage is 3,570 ft (NGVD 29). May 1941 to October 1965, nonrecording gage at different datum. April 1966 to September 1979, water-stage recorder at site about 500 ft downstream at different datum.

REMARKS.--Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs. Diversions for irrigation of about 105,000 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow based on 16 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	49	33	26	21	--	--
3	54	37	30	25	--	--
7	62	44	36	30	--	--
14	75	50	40	33	--	--
30	88	59	47	39	--	--
60	110	75	61	51	--	--
90	127	88	72	61	--	--
120	145	101	84	72	--	--
183	168	119	100	86	--	--

Magnitude and probability of seasonal low flow from March-June based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	76	43	31	24	--	--
3	87	50	38	29	--	--
7	100	59	45	36	--	--
14	119	69	52	42	--	--
30	151	88	66	53	--	--

Magnitude and probability of seasonal low flow from November-February based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	93	64	53	44	--	--
3	100	76	66	59	--	--
7	117	89	78	69	--	--
14	134	103	90	80	--	--
30	153	114	98	86	--	--

Duration of daily mean flows based on 18 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
38	46	63	84	117	143	167	190
40%	30%	20%	15%	10%	5%	2%	1%
228	266	368	553	1,060	2,230	4,140	5,970

Magnitude and probability of annual high flow based on 18 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	4,180	10,100	14,900	21,200	--	--
3	3,880	9,200	13,300	18,600	--	--
7	3,380	7,560	10,600	14,300	--	--
15	2,690	5,890	8,160	10,900	--	--
30	2,130	4,590	6,330	8,430	--	--
60	1,420	2,970	4,120	5,610	--	--
90	1,080	2,150	2,950	3,990	--	--

Magnitude and probability of seasonal low flow from July-October based on 18 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	55	35	28	23	--	--
3	61	40	32	27	--	--
7	70	46	38	32	--	--
14	84	54	42	34	--	--
30	100	64	49	40	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	519	89	211	105	18
November	596	120	224	103	18
December	456	101	199	83	18
January	314	122	197	59	18
February	291	96	194	66	18
March	473	104	223	106	18
April	1,120	81	327	273	20
May	4,120	72	1,180	1,100	20
June	8,560	109	2,320	2,140	20
July	2,160	54	418	511	20
August	383	49	168	97	20
September	422	49	151	86	20
Annual	1,180	123	478	282	18

06086000 Sun River at Fort Shaw, Mont.
Site Number 66

LOCATION.--Lat 47°31'10", long 111°48'50" (NAD 27), on west line of SW¼ sec.1, T.20 N., R.2 W., Cascade County, at highway bridge at Fort Shaw.
DRAINAGE AREA.--1,417 mi^2.
PERIOD OF RECORD.--13 years (1912-28).
GAGE.--Water-stage recorder. Altitude of gage is 3,465 ft (NGVD 29, from topographic map). Prior to May 20, 1925, chain or staff gages at several sites within 0.25 mi of present site at different datums.
REMARKS.--Numerous diversions for irrigation upstream and downstream from station. Diversion to Pishkun Canal and Pishkun Reservoir began in 1916. Some regulation in Willow Creek Reservoir.

Magnitude and probability of annual low flow
based on 15 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	121	72	53	40	--	--
3	142	89	67	52	--	--
7	171	110	82	62	--	--
14	187	129	102	82	--	--
30	203	146	119	100	--	--
60	227	172	149	133	--	--
90	259	194	166	145	--	--
120	290	218	186	161	--	--
183	320	236	198	171	--	--

Magnitude and probability of seasonal low flow from
March-June based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	204	121	88	65	--	--
3	217	139	107	85	--	--
7	237	181	158	142	--	--
14	251	199	181	168	--	--
30	270	221	205	195	--	--

Magnitude and probability of seasonal low flow from
November-February based on 16 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	208	133	98	73	--	--
3	218	142	105	78	--	--
7	232	152	111	81	--	--
14	234	168	136	112	--	--
30	236	188	171	158	--	--

Duration of daily mean flows based on 16 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
100	127	162	198	233	268	322	377
40%	30%	20%	15%	10%	5%	2%	1%
474	637	1,100	1,700	2,530	3,980	6,030	7,910

Magnitude and probability of annual high flow
based on 16 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	6,580	10,000	12,700	16,500	--	--
3	6,160	9,210	11,400	14,300	--	--
7	5,620	8,310	10,200	12,600	--	--
15	4,800	7,170	8,860	11,100	--	--
30	4,090	6,100	7,480	9,240	--	--
60	3,190	4,620	5,540	6,680	--	--
90	2,500	3,550	4,230	5,080	--	--

Magnitude and probability of seasonal low flow from
July-October based on 15 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	179	91	61	44	--	--
3	197	107	75	55	--	--
7	216	121	87	65	--	--
14	236	136	103	83	--	--
30	263	159	122	102	--	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	708	181	402	150	16
November	622	165	369	125	16
December	423	190	297	79	16
January	600	170	280	104	16
February	824	168	312	182	16
March	669	200	310	123	16
April	1,160	308	755	259	16
May	5,220	1,490	2,980	1,010	16
June	7,630	723	3,450	1,990	17
July	5,140	103	1,150	1,170	17
August	938	120	397	223	17
September	845	134	382	185	16
Annual	1,770	415	929	356	16

06088300 Muddy Creek near Vaughn, Mont.
Site Number 67

LOCATION.--Lat 47°37'30", long 111°38'05" (NAD 27), in NE¼NE¼NW¼ sec.32, T.22 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on left bank 200 ft downstream from bridge on county road, 6.2 mi northwest of Vaughn and at river mile 14.6.

DRAINAGE AREA.--282 mi^2.

PERIOD OF RECORD.--July 1968 to September 1987, March 1996 to current year (2002).

GAGE.--Water-stage recorder. Altitude of gage is 3,441.79 ft (NGVD 29, levels by U.S. Army Corps of Engineers).

REMARKS.--Natural flow increased by wastage from Greenfield Irrigation Project. Diversions for irrigation of about 400 acres upstream from station and pumped diversions from Muddy Creek upstream from station in SW¼ sec.2, T.22 N., R.1 W, to supplement water supply for Benton Lake Wildlife Refuge. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow based on 24 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	17	13	11	9.6	--	--
3	18	14	13	11	--	--
7	20	16	14	13	--	--
14	22	18	16	14	--	--
30	25	21	19	17	--	--
60	29	24	22	21	--	--
90	36	29	26	24	--	--
120	40	34	31	29	--	--
183	65	52	45	40	--	--

Magnitude and probability of seasonal low flow from March-June based on 26 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	21	16	13	12	9.6	--
3	23	18	15	13	11	--
7	25	19	17	15	13	--
14	27	22	19	18	16	--
30	30	25	23	23	22	--

Magnitude and probability of seasonal low flow from November-February based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	19	15	13	11	9.2	--
3	20	16	14	12	11	--
7	22	18	16	14	12	--
14	24	19	17	15	13	--
30	28	22	19	17	15	--

Duration of daily mean flows based on 25 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
17	19	23	27	33	41	51	63
40%	30%	20%	15%	10%	5%	2%	1%
88	138	189	225	262	333	393	491

Magnitude and probability of annual high flow based on 25 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	583	939	1,260	1,780	2,270	--
3	509	742	924	1,190	1,410	--
7	403	538	638	777	890	--
15	330	400	445	501	543	--
30	295	352	387	430	461	--
60	270	314	337	361	376	--
90	242	285	309	335	353	--

Magnitude and probability of seasonal low flow from July-October based on 25 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	54	44	40	37	34	--
3	56	46	41	38	35	--
7	58	48	43	40	37	--
14	61	50	45	42	39	--
30	71	57	51	47	42	--

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	145	41	77	23	25
November	71	35	54	8.1	25
December	58	22	42	8.8	25
January	60	19	33	11	25
February	65	18	36	12	25
March	238	23	60	61	26
April	162	21	41	27	26
May	264	56	115	47	26
June	455	101	200	67	26
July	367	137	259	51	27
August	402	138	245	68	27
September	218	46	136	46	27
Annual	160	77	109	21	25

06088500 Muddy Creek at Vaughn, Mont.
Site Number 68

LOCATION.--Lat 47°33'40", long 111°32'15" (NAD 27), in SW¼SE¼NE¼ sec.24, T.21 N., R.1 E., Cascade County, Hydrologic Unit 10030104, on left bank at Vaughn, and at river mile 1.1.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--June 1925 to January 1926, April 1934 to September 1968, July 1971 to current year (2002).

REVISED RECORDS.--WSP 856: 1937. WSP 1509: 1934-35, 1941(M). WSP 1559: 1956. WSP 1629: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,330 ft (NGVD 29). May 21, 1925, to Feb. 8, 1926, nonrecording gage at site 500 ft downstream at different datum. Apr. 19, 1925, to Sept. 30, 1955, at previous site at datum. May 18, 1955, to Apr. 25, 1960, and Sept. 24, 1962, to Sept. 30, 1968, auxiliary crest-stage gage. Oct. 1, 1955, to Sept. 30, 1968, nonrecording gage at bridge 670 ft upstream at previous datum. July 1, 1971, to May 9, 1996, 700 ft upstream at previous datum.

REMARKS.--Natural flow increased by wastage from Sun River Canal and by return flow from irrigation. Diversions for irrigation of about 700 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

Magnitude and probability of annual low flow based on 63 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	16	12	9.7	8.0	6.3	5.3
3	17	13	11	8.9	7.3	6.3
7	19	14	12	11	8.9	7.8
14	22	17	14	13	11	9.6
30	26	21	18	16	13	12
60	31	25	22	20	17	16
90	37	30	27	25	23	21
120	43	36	33	31	28	27
183	78	63	56	49	43	39

Magnitude and probability of seasonal low flow from March-June based on 65 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	20	14	11	9.4	7.5	6.3
3	21	15	12	10	8.3	7.1
7	23	17	15	13	11	10
14	25	20	18	16	15	14
30	30	24	22	21	20	19

Magnitude and probability of seasonal low flow from November-February based on 65 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	19	14	11	9.5	7.7	6.6
3	19	15	12	11	8.8	7.7
7	21	16	14	12	9.5	8.2
14	24	18	15	13	11	9.4
30	29	22	18	16	13	11

Duration of daily mean flows based on 65 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
14	17	22	26	34	42	55	73
40%	30%	20%	15%	10%	5%	2%	1%
109	162	222	256	305	365	463	511

Magnitude and probability of annual high flow based on 65 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	553	916	1,280	1,950	2,640	3,560
3	474	716	943	1,330	1,700	2,170
7	402	557	696	920	1,130	1,380
15	353	457	537	652	748	854
30	329	405	448	496	528	557
60	302	366	396	424	440	454
90	278	336	364	391	407	420

Magnitude and probability of seasonal low flow from July-October based on 65 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	70	49	38	28	19	14
3	73	53	41	31	22	17
7	76	56	45	36	27	22
14	81	60	49	40	31	26
30	98	72	59	49	40	34

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	200	26	100	31	66
November	113	31	60	13	66
December	131	17	44	15	66
January	68	17	34	11	65
February	97	10	37	14	65
March	283	22	55	44	65
April	182	18	42	23	65
May	305	53	138	54	65
June	480	86	237	79	66
July	416	52	275	81	67
August	488	44	284	82	67
September	270	40	176	51	67
Annual	185	61	125	25	65

06089000 Sun River near Vaughn, Mont.
Site Number 69

LOCATION.--Lat 47°31'37", long 111°29'05" (NAD 27), in NW¼SE¼SW¼ sec.33, T.21 N., R.2 E., Cascade County, Hydrologic Unit 10030104, on right bank 3.7 mi downstream from Muddy Creek, 3.6 mi southeast of Vaughn, and at river mile 13.6.

DRAINAGE AREA.--1,849 mi^2.

PERIOD OF RECORD.--July to October 1897 (gage heights and discharge measurements only, published as "near Great Falls"), April 1934 to current year (2002). Monthly discharge only for April 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: 1934. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,317.12 ft (NGVD 29). July 11 to Oct. 30, 1897, nonrecording gage at site 0.8 mi upstream at different datum. Apr. 19 to Aug. 3, 1934, non-recording gage at present site and datum.

REMARKS.--Flow regulated by Gibson, Pishkun, Willow Creek, and Nilan Reservoirs. Diversion for irrigation of about 110,000 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

Magnitude and probability of annual low flow
based on 67 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	133	88	68	53	39	31
3	141	95	74	58	44	35
7	153	106	84	69	53	45
14	168	120	99	83	67	57
30	191	138	114	96	78	68
60	216	159	133	114	95	84
90	251	182	152	131	109	97
120	268	198	169	148	127	114
183	319	240	205	179	154	138

Magnitude and probability of seasonal low flow from
March-June based on 68 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	173	105	77	58	42	33
3	182	113	84	64	47	37
7	194	124	96	76	58	48
14	212	141	114	95	77	67
30	243	160	131	112	94	84

Magnitude and probability of seasonal low flow from
November-February based on 68 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	145	101	82	69	56	49
3	152	109	90	77	65	57
7	167	120	99	85	71	62
14	185	132	109	93	77	67
30	210	150	123	105	86	75

Duration of daily mean flows based on 68 years of record

Discharge, in ft^3/s, which was equaled or exceeded for indicated percent of time							
99%	98%	95%	90%	80%	70%	60%	50%
95	113	143	176	224	268	318	369
40%	30%	20%	15%	10%	5%	2%	1%
445	528	719	951	1,460	2,740	4,480	5,900

Magnitude and probability of annual high flow
based on 68 years of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and exceedance probability, in percent					
	2	5	10	25	50	100
	50%	20%	10%	4%	2%	1%
1	5,180	9,310	12,200	15,700	18,200	20,700
3	4,840	8,480	10,800	13,500	15,400	17,000
7	4,220	7,150	8,890	10,800	12,000	13,000
15	3,430	5,810	7,230	8,770	9,750	10,600
30	2,740	4,670	5,860	7,220	8,100	8,890
60	1,950	3,260	4,080	5,040	5,690	6,280
90	1,540	2,470	3,070	3,770	4,260	4,710

Magnitude and probability of seasonal low flow from
July-October based on 68 seasons of record

Period of consecutive days	Discharge, in ft^3/s, for indicated recurrence interval, in years, and non-exceedance probability, in percent					
	2	5	10	20	50	100
	50%	20%	10%	5%	2%	1%
1	267	194	160	135	110	96
3	275	203	170	145	120	105
7	290	215	180	154	128	113
14	308	231	195	169	142	125
30	342	261	225	198	170	154

Monthly and annual mean discharges

Month	Maximum (ft^3/s)	Minimum (ft^3/s)	Mean (ft^3/s)	Standard deviation (ft^3/s)	Years of record
October	779	143	381	134	68
November	908	149	339	138	68
December	896	114	301	141	68
January	656	66	256	103	68
February	601	82	266	104	68
March	868	133	327	166	68
April	3,000	93	501	484	69
May	4,330	87	1,580	1,020	69
June	8,010	280	2,560	1,900	69
July	2,510	265	787	479	69
August	1,020	250	566	170	69
September	1,040	164	444	149	69
Annual	1,310	210	687	281	68