Water-Data Report 2007

12323700 MILL CREEK AT OPPORTUNITY, MT

Pend Oreille Basin
Upper Clark Fork Subbasin

LOCATION.--Lat 46°06′52″, long 112°49′16″ referenced to North American Datum of 1927, in SE ¼ SE ¼ NE ¼ sec.10, T.4 N., R.10 W., Deer Lodge County, MT, Hydrologic Unit 17010201, on right bank at Opportunity, 1.0 mi upstream from Mill-Willow Bypass, and at river mile 1.0.

DRAINAGE AREA.--43.2 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2003 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,940 ft, referenced to the National Geodetic Vertical Datum of 1929. Apr. 1, 2003 to July 18, 2006, water-stage recorder at site 400 ft downstream at different datum.

REMARKS.--Records are good except those for those for estimated daily discharges, which are poor. Minor diversions for irrigation occur upstream from station. U.S. Geological Survey satellite telemeter is located at the station.

12323700 MILL CREEK AT OPPORTUNITY, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.4	e2.1	e4.0	e5.0	e3.0	e4.5	5.6	35	55	8.5	2.4	0.66
2	1.4	e3.0	e3.0	e8.0	e3.5	e4.0	5.5	38	61	7.9	2.2	0.64
3	1.2	e5.0	e3.0	e7.0	e5.0	e4.5	4.8	66	73	6.7	1.9	0.53
4	1.3	6.1	e4.0	e6.0	e7.0	e6.0	5.1	59	83	6.5	1.8	0.57
5	1.5	5.9	4.7	e5.0	e9.0	7.0	4.8	47	103	6.4	1.8	0.79
6	1.9	5.7	5.1	e4.5	11	7.4	4.3	39	111	6.5	1.9	1.6
7	2.7	7.2	5.3	e4.5	10	7.9	4.1	33	88	6.8	1.7	1.5
8	2.7	17	5.7	e6.5	9.3	7.5	4.2	32	75	6.8	1.5	1.5
9	3.0	15	6.1	e9.0	9.5	6.6	4.5	34	66	6.3	1.3	1.7
10	2.8	14	6.8	e4.0	8.4	6.6	4.5	40	71	6.1	1.2	1.7
11	2.9	13	6.5	e2.0	7.4	7.3	4.3	51	118	5.6	1.1	1.3
12	2.6	12	6.5	e1.0	7.4	10	4.2	56	91	4.7	1.1	1.1
13	2.5	13	7.2	e2.0	7.1	13	4.0	66	80	4.3	1.1	1.1
14	2.5	13	e7.0	e3.0	6.5	12	3.9	64	76	4.1	1.1	1.2
15	2.8	10	e6.0	e3.0	6.0	9.9	4.1	57	64	5.2	1.0	1.3
16	4.2	14	e4.0	e3.5	5.7	9.1	3.8	54	46	5.2	1.1	1.1
17	4.4	11	e3.0	e4.0	5.3	9.6	4.1	56	49	5.7	1.2	0.96
18	3.9	11	e4.0	e5.0	5.4	11	8.3	60	40	12	1.2	0.68
19	5.5	10	e5.0	e7.0	5.3	11	13	61	31	10	1.4	0.71
20	7.5	10	e6.0	e7.5	5.5	12	13	65	30	8.9	1.5	0.70
21	6.8	11	e6.0	e6.0	5.5	11	13	75	29	8.0	1.5	0.53
22	5.9	12	e6.0	e7.0	5.6	9.0	12	63	27	6.5	1.5	0.56
23	5.7	11	e6.0	e8.0	5.5	8.0	14	54	25	6.3	1.4	1.9
24	5.8	7.4	e7.0	e7.0	e5.0	6.6	14	51	23	6.1	1.3	3.1
25	5.6	e5.0	e8.0	e5.5	e6.0	6.8	15	51	22	6.8	1.2	2.7
26	5.4	e4.0	e7.5	e5.5	e5.0	6.0	16	45	20	6.3	0.93	2.4
27	6.0	e4.0	e7.0	e4.0	e4.0	6.3	16	47	18	5.6	0.86	2.0
28	5.9	e2.0	e5.0	e4.5	e4.0	6.3	17	64	14	5.0	0.84	1.4
29	6.0	e3.0	e4.0	e4.0	---	5.4	25	58	11	4.7	0.77	1.7
30	5.9	e3.0	e4.5	e4.0	---	5.4	32	54	9.0	4.1	0.70	1.9
31	e2.0	---	e4.5	e4.0	---	5.5	---	53	---	2.9	0.67	---
Total	119.7	260.4	168.4	157.0	177.9	243.2	284.1	1,628	1,609.0	196.5	41.17	39.53
Mean	3.86	8.68	5.43	5.06	6.35	7.85	9.47	52.5	53.6	6.34	1.33	1.32
Max	7.5	17	8.0	9.0	11	13	32	75	118	12	2.4	3.1
Min	1.2	2.0	3.0	1.0	3.0	4.0	3.8	32	9.0	2.9	0.67	0.53
Ac-ft	237	517	334	311	353	482	564	3,230	3,190	390	82	78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2.49	3.84	2.72	2.82	3.29	3.45	8.84	47.8	62.4	11.4	1.70	1.35
Max	3.86	8.68	5.43	5.06	6.35	7.85	16.2	61.7	85.7	22.4	2.27	1.58
(WY)	(2007)	(2007)	(2007)	(2007)	(2007)	(2007)	(2006)	(2006)	(2003)	(2005)	(2003)	(2005)
Min	0.97	1.00	1.46	1.31	1.53	0.57	0.54	9.44	31.8	6.34	1.33	1.07
(WY)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2004)	(2004)	(2007)	(2007)	(2006)

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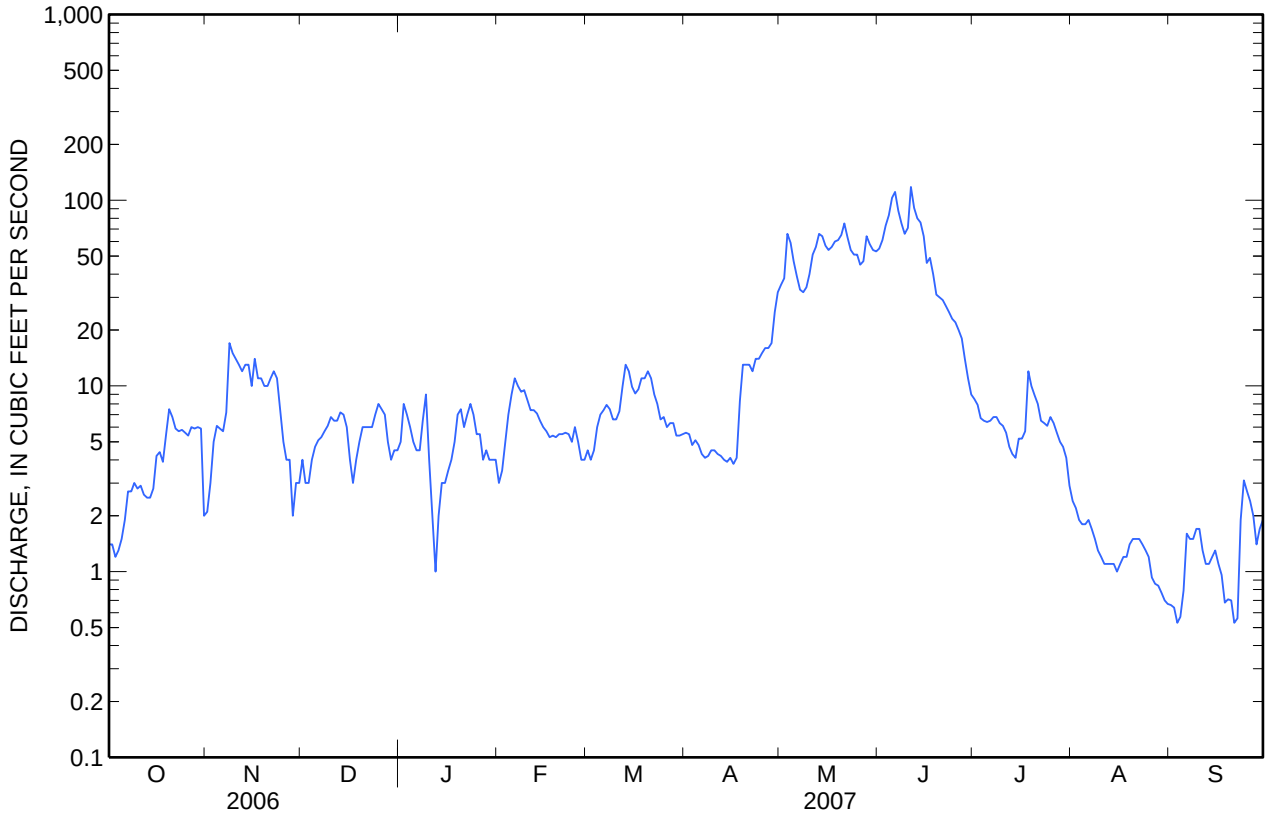
SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 2003 - 2007	
Annual total	5,396.10		4,924.90			
Annual mean	14.8		13.5		11.9	
Highest annual mean					14.7	2005
Lowest annual mean					5.44	2004
Highest daily mean	140	May 21	118	Jun 11	260	Jun 1, 2003
Lowest daily mean	0.60	Sep 6	0.53	Sep 3	0.38	Apr 6, 2005
Annual seven-day minimum	0.69	Sep 6	0.65	Aug 29	0.39	Apr 5, 2005
Maximum peak flow			142	Jun 11	284	Jun 1, 2003
Maximum peak stage			3.04	Jun 11	3.34	Jun 1, 2003
Instantaneous low flow			[a]0.36	Sep 3	[b]0.34	Apr 6, 2005
Annual runoff (ac-ft)	10,700		9,770		8,650	
10 percent exceeds	30		50		36	
50 percent exceeds	4.0		5.9		2.7	
90 percent exceeds	1.4		1.3		0.96	

[a] Gage height, 1.53 ft.
[b] Gage height, 0.88 ft, site and datum then in use.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2003 to current year.

REMARKS.--Several unpublished observations of specific conductance and water temperature were made during the year.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 2

[Remark codes: E, estimated.]

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf µS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Arsenic water, fltrd, µg/L (01000)	Arsenic water, unfltrd µg/L (01002)	Cadmium water, fltrd, µg/L (01025)	Cadmium water, unfltrd µg/L (01027)
Nov													
13...	1630	12	8.1	164	4.5	2.5	73	20.6	5.36	20.6	21.0	.06	.11
Feb													
26...	1340	E5.0	8.2	217	.0	.5	94	25.4	7.42	14.0	14.6	.05	.07
Mar													
26...	1620	5.5	8.1	161	12.5	7.5	69	19.0	5.11	17.9	19.8	E.02	.07
May													
09...	1035	35	8.0	107	21.5	9.0	42	11.9	2.93	22.9	25.0	.06	.12
Jun													
05...	1140	103	7.8	75	20.0	10.5	30	8.65	1.93	20.3	29.5	.13	.32
18...	1530	40	8.0	99	19.0	11.5	41	11.7	2.75	23.1	25.2	.07	.12
Jul													
23...	1530	6.3	8.1	168	37.5	20.0	71	19.6	5.37	55.1	53.5	.07	.09
Aug													
27...	1340	.83	8.0	199	21.5	15.0	84	23.4	6.29	26.4	27.8	.05	.07

12323700 MILL CREEK AT OPPORTUNITY, MT—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
Part 2 of 2
[Remark codes: <, less than; E, estimated.]

Date	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
Nov													
13...	1.9	2.8	74	129	.12	.26	5.6	8.0	4.2	5	71	2	.06
Feb													
26...	1.1	1.7	28	68	<.12	.13	2.2	3.5	2.4	2	86	1	E.01
Mar													
26...	2.5	3.3	30	95	E.07	.26	4.1	5.8	2.2	3	67	2	.03
May													
09...	4.0	6.6	34	212	.16	1.14	3.1	14.0	2.8	5.7	67	6	.57
Jun													
05...	3.9	17.4	36	959	.12	4.54	5.1	49.2	3.4	15.9	47	49	14
18...	2.6	6.3	42	233	.16	1.12	4.8	13.6	2.1	5.1	60	8	.86
Jul													
23...	2.6	3.5	94	155	.20	.42	5.7	9.3	1.3	E1.9	82	1	.02
Aug													
27...	1.6	2.2	42	115	<.12	.30	9.3	12.5	1.6	2.2	75	2	<.01