Water-Data Report 2013

05020500 ST. MARY RIVER AT INTERNATIONAL BOUNDARY

Saskatchewan Basin
St Mary Subbasin

LOCATION.--Lat 49°00'41", long 113°17'58" referenced to North American Datum of 1983, in NE ¼ sec.5, T.0 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, MT.

DRAINAGE AREA.--465 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1902 to current year. 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.--Water Supply Paper (WSP) 1308: 1902, 1908-12. WSP 1508: 1902, 1908-09. Water Data Report 1983: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,087.40 ft (referenced to the National Geodetic Vertical Datum of 1929) based upon levels from elevation established at previous site located 1.1 mi upstream by Prairie Farm Rehabilitation Administration. Prior to Jan. 1, 1913, nonrecording gages were located at two sites within 0.3 mi of previous site at different elevations. Jan. 1, 1913 to Oct. 25, 1955, water-stage recorder was located at several sites about 7 mi downstream from present site at various elevations. Oct. 26, 1955 to Mar. 23, 1965, water-stage recorder was located at site 200 ft upstream from previous site at elevation 2 ft higher. Mar. 24, 1965 to Sept. 8, 1975, water-stage recorder was located at site 100 ft upstream from previous site at same elevation. Water-stage recorder was located at site 1.1 miles upstream June 22, 1975 to Oct. 31, 1999.

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

REMARKS.--Records are good except for estimated daily discharges, which are poor. Since 1917, St. Mary Canal has diverted water from the river near Babb, MT, to North Fork Milk River. Some regulation occurs by Lake Sherburne on Swiftcurrent Creek. Bureau of Reclamation satellite telemeter is located at the station.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	190	646	465	e200	e110	e100	195	644	1,910	2,130	573	325
2	188	800	463	e180	e120	e100	207	676	1,870	2,230	698	316
3	213	880	466	e170	e120	e110	230	689	2,070	2,290	905	315
4	205	914	470	e170	e130	e120	244	689	2,120	2,410	832	314
5	194	933	481	e170	e130	e130	276	676	2,020	2,400	735	318
6	188	987	462	e160	e130	e130	332	675	1,990	2,320	658	324
7	187	1,120	451	e160	e120	e130	383	690	2,080	2,110	570	344
8	192	1,240	421	e160	e120	e140	427	810	2,270	1,890	482	345
9	186	1,280	401	e170	e120	e160	455	979	2,440	1,580	469	340
10	180	1,180	460	e180	e110	e180	478	1,240	2,560	1,350	515	330
11	173	1,040	459	e190	e120	e140	485	1,490	2,550	1,160	572	320
12	167	1,110	442	e190	e120	e120	507	1,830	2,490	989	565	313
13	164	989	410	e180	e120	e130	506	2,480	2,320	876	529	326
14	162	885	408	e170	e120	e140	488	3,260	2,160	796	520	341
15	172	808	397	e160	e110	e150	477	3,510	1,990	693	494	321
16	211	732	408	e160	e110	159	455	3,320	1,850	683	472	323
17	253	665	406	e150	e110	e170	433	3,010	1,750	690	460	354
18	300	609	352	e150	e110	e180	414	2,690	1,670	715	449	389
19	345	600	339	e140	e110	227	415	2,430	1,800	729	436	390
20	422	578	e320	e130	e110	250	420	2,220	2,650	731	413	360
21	469	593	e310	e130	e100	256	428	2,080	2,770	718	393	337
22	502	602	e300	e130	e100	231	404	2,030	2,730	701	383	315
23	539	619	e270	e130	e100	213	396	2,740	2,570	678	376	329
24	542	655	e260	e120	e100	244	391	2,970	2,380	656	370	391
25	524	614	e250	e120	e95	233	393	2,780	2,200	637	358	455
26	498	578	e220	e120	e95	204	388	2,530	2,030	653	349	405
27	472	569	e240	e120	e95	205	443	2,300	1,950	680	342	362
28	452	540	e250	e120	e95	194	475	2,100	1,940	679	336	317
29	444	501	e270	e120	---	173	527	1,980	1,990	664	337	326
30	467	486	e230	e110	---	174	598	1,950	2,040	635	335	408
31	517	---	e210	e110	---	186	---	1,940	---	613	327	---
Total	9,718	23,753	11,291	4,670	3,130	5,279	12,270	59,408	65,160	36,086	15,253	10,353
Mean	313	792	364	151	112	170	409	1,916	2,172	1,164	492	345
Max	542	1,280	481	200	130	256	598	3,510	2,770	2,410	905	455
Min	162	486	210	110	95	100	195	644	1,670	613	327	313
Ac-ft	19,280	47,110	22,400	9,260	6,210	10,470	24,340	117,800	129,200	71,580	30,250	20,540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	441	348	202	154	149	188	464	1,648	2,574	1,327	589	478
Max	1,588	1,423	844	729	411	516	1,330	3,565	7,499	3,463	1,460	1,511
(WY)	(1952)	(2000)	(1996)	(1918)	(1934)	(1916)	(1934)	(1928)	(1908)	(1916)	(1909)	(1927)
Min	88.4	80.3	64.3	55.5	41.6	54.7	104	678	694	496	246	153
(WY)	(2002)	(1988)	(2001)	(1944)	(1936)	(2001)	(2008)	(1941)	(1941)	(1988)	(1988)	(1988)

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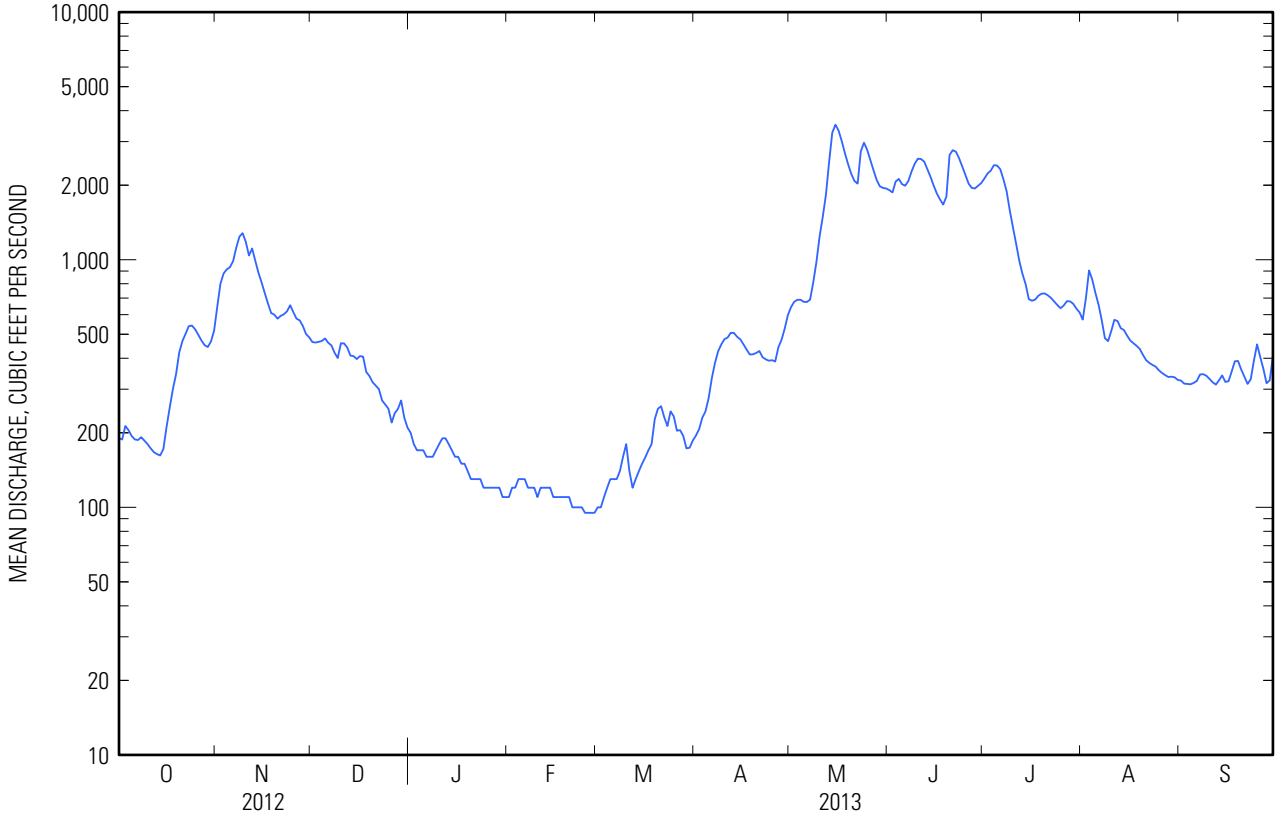
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1902 - 2013	
Annual total	280,674		256,371			
Annual mean	767		702		715	
Highest annual mean					1,353	1908
Lowest annual mean					316	1941
Highest daily mean	4,030	Jun 27	3,510	May 15	28,000	Jun 5, 1908
Lowest daily mean	80	Jan 26	95	Feb 25	16	Nov 29, 1936
Annual seven-day minimum	89	Jan 24	97	Feb 22	27	Nov 26, 1936
Maximum peak flow			3,620	May 15	[a]40,000	Jun 5, 1908
Maximum peak stage			6.82	May 15	[b]12.75	Jun 5, 1908
Annual runoff (ac-ft)	556,700		508,500		517,900	
10 percent exceeds	2,110		2,080		1,820	
50 percent exceeds	396		414		352	
90 percent exceeds	120		120		109	

	Water Years 1902 – 1916*		Water Years 1917 – 2013**	
Annual mean	1,002		673	
Highest annual mean	1,353	1908	1,285	1927
Lowest annual mean	646	1905	316	1941
Highest daily mean	28,000	Jun 5, 1908	17,000	Jun 9, 1964
Lowest daily mean	70	Feb 5, 1914	16	Nov 29, 1936
Annual seven-day minimum	75	Feb 1, 1914	27	Nov 26, 1936
Maximum peak flow	40,000	Jun 5, 1908	23,300	Jun 21, 1975
Maximum peak stage	12.75	Jun 5, 1908	[b]13.46	Jun 21, 1975
Annual runoff (ac-ft)	726,000		487,900	
10 percent exceeds	2,470		1,700	
50 percent exceeds	538		333	
90 percent exceeds	150		105	

*Before St. Mary Canal diversions.
**Post operation of St. Mary Canal.
[a]Gage height, 12.75 ft, previous site and datum.
[b]From floodmarks at site and datum then in use.

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