Report to

THE INTERNATIONAL JOINT COMMISSION

on

THE DIVISION AND USE MADE OF THE WATERS OF

ST. MARY AND MILK RIVERS

by

I. R. STROME
representing Canada

and

C. G. PAULSEN
representing the United States

1952

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List of gauging stations with map showing their locations in the river basins.

International Joint Commission,

Washington, D.C., and Ottawa, Ontario.

Gentlemen:

In compliance with the Provisions of Clause VIII (c) of your Order of the 4th October, 1921, directing the division of the waters of St. Mary and Milk Rivers between the United States and Canada, we are transmitting herewith a report on the operations during the irrigation season ended October 31, 1952.

Respectfully submitted,

I.R. Strome
Accredited Officer of Her Majesty.

C.G. Paulsen
Accredited Officer of the United States.

April 7, 1953.

Received March, 1954

Introduction

The field work incidental to the division and administration of the waters of the St. Mary and Milk Rivers in Alberta, Saskatchewan, and Montana was conducted during the irrigation season of 1952 by the same group of engineers as in previous years.

(2) Mr. I.R. Strome, Chief, Water Resources Division, who succeeded Mr. Norman Marr as accredited officer of Her Majesty on June 6, 1952, was represented by Mr. O.H. Hoover, District Engineer, Calgary, Alberta. The Chief Hydraulic Engineer, United States Geological Survey, Mr. C.G. Paulsen, as accredited officer of the United States, was represented in the field by Mr. C.S. Heidel, Staff Engineer, Helena, Montana.

(3) The water of the two rivers was divided between the two countries in accordance with the Order of the Commission dated at Ottawa, Canada, on the 4th day of October, 1921.

(4) The hydrometric data upon which this report is based were collected and compiled jointly for 37 international and 19 non-international gauging stations by engineers of the Canadian Water Resources Division under the direction of Mr. Hoover and engineers of the United States Geological Survey under the supervision of Mr. Heidel. The United States Bureau of Reclamation has furnished data for an additional 8 canal stations in Montana.

(5) Complete data for 49 of the above stations are contained in the appendix to this report; monthly quantities for 11 canal stations in Montana are shown in tables 2 and 5 only, and data for 4 stations maintained by the U.S.G.S. in the St. Mary Basin are not used for division purposes and are not included in the report or appendix.

(6) This report was compiled jointly by Messrs. O.H. Hoover and C.S. Heidel.

Water Supply

St. Mary River

(7) The thirty-first annual international survey of snow conditions on the headwaters of Swiftcurrent Creek, a mountainous area considered typical of the headwaters of the St. Mary River, showed the average snow cover at the observation points to be 38.7 inches or 63 percent of 61.8 inches, the mean for the previous thirty years of record. The water content was found to be 19.6 inches which was 71 percent of 27.7 inches, the mean for the previous thirty years of record. The run-off during May, June and July, as measured at the Swiftcurrent Creek at Many Glacier gauging station, was 55,480 acre-feet or 83 percent of 66,806 acre-feet, the average of the previous (29) years.

(8) The natural flow of the St. Mary River at the International Boundary during the 1952 irrigation season, April 1 to October 31, was 517,090 acre-feet or 89 percent

of 581,535 acre-feet, the average for the previous 49 years of record.

Milk River

(9) The computed natural flow of Milk River, at its eastern crossing of the International Boundary, during the open water period of 1952, March 1 to October 31, was 142,600 acre-feet or 130 percent of 109,424 acre-feet, the average flow for the previous 40 years. The total measured diversion for irrigation from Milk River in Montana during 1952 was 178,480 acre-feet.

Eastern Tributaries of Milk River

(10) Heavy snow cover and a late run-off season combined to produce abnormally high water conditions in the Eastern Tributaries during April. This high water caused considerable damage to irrigation headworks and, as a result, the East End Canal in Saskatchewan and the Matheson canal in Montana could not be operated this season.

(11) The total measured quantity of water delivered to the United States by the Eastern Tributaries of Milk River during the open water period March 1 to October 31 was 727,000 acre-feet, (see Table 6) which is 607 percent of 119,700 acre-feet the average flow delivered during the previous 25 years.

(12) The computed natural flow of the Eastern Tributaries of Milk River for the same period was 761,946 acre-feet, or 569 percent of 134,000 acre-feet, the average for the past 25 years.

Division of Water

St. Mary River

(13) The division of the waters of the St. Mary River was carried out in accordance with the Order of the International Joint Commission dated October 4, 1921 which stipulates:

(14) "(a) During the irrigation season when the natural flow of the St. Mary River at the point where it crosses the International Boundary is six hundred and sixty-six (666) cubic feet per second or less Canada shall be entitled to three-fourths and the United States to one-fourth of such flow.

(15) (b) During the irrigation season when the natural flow of the St. Mary River at the point where it crosses the International Boundary is more than six hundred and sixty-six (666) cubic feet per second Canada shall be entitled to a prior appropriation of five hundred (500) cubic feet per second, and the excess over six hundred and sixty-six (666) cubic feet per second shall be divided equally between the two countries."

(16) The daily natural flow of the St. Mary River was determined in the following manner:

(1) Daily records were obtained at the following gauging and climatologic stations:

1. Swiftcurrent Creek at Many Glacier, (Inflow to Sherburne L. Res.)

2. Sherburne Lake Reservoir at Sherburne (Daily Storage Factors).
3. Swiftcurrent Creek at Sherburne (Outflow from Sherburne L. Res.)
4. St. Mary Canal at St. Mary Crossing near Babb (United States diversion from St. Mary River Basin)
5. St. Mary River near Kimball (Quantity delivered to Canada)
6. Evaporation and Precipitation station near Sherburne L. Res.

(17) (2a) When water was being stored in Sherburne Lake ~~Reservoir~~, the sum of the quantities measured at gauging stations 2, 4 and 5 above, representing the quantities stored, diverted by the United States and delivered to Canada, respectively was considered to be the natural flow of the St. Mary River at the International Boundary.

(18) (2b) When water was being released from Sherburne Lake, ~~Lake Reservoir~~ the sum of the flow at gauging stations 4 and 5, representing the quantities diverted by the United States and delivered to Canada, respectively, reduced by the amount released from storage, as shown by the records at station 2, was considered to be the natural flow of St. Mary River at International Boundary.

(19) (3) In order to synchronize Sherburne Lake ~~Reservoir~~ operations with natural flow quantities at the International Boundary, a two day time lag was applied to data from stations 1, 2 and 3.

(20) (4) The natural flow of the St. Mary River having

been determined, the division of its waters was carried out in accordance with the above Order.

(21) (5) Computed evaporation losses from Sherburne Lake Reservoir were charged against the United States share.

(22) During the irrigation season the field engineers of both countries made frequent computations of the natural flow of the river and summarized the diversions in each country. Differences between the shares and actual diversions were adjusted subsequently to allow each country its proper share. Interim division reports were prepared when deemed desirable during the irrigation season and statements forwarded to the engineer in charge of the St. Mary River storage unit, United States Bureau of Reclamation, Babb, Montana; to the Manager, Milk River Project, United States Bureau of Reclamation, Malta, Montana; to the Assistant Manager, St. Mary River Development, Lethbridge, Alberta and to the Chief of the Water Resources Division, Ottawa, Ontario, Canada.

(23) The United States St. Mary Canal was in operation from July 3 to October 15 and water was delivered to the North Branch of Milk River from July 5 to October 21.

(24) As seepage from the canal between the Intake and the Crossing of the St. Mary River is assumed to return to the river and eventually become available to Canada, the discharge of 107,200 acre-feet passing the St. Mary Crossing gauging station during the period July 3 to October 15 is

considered to be the quantity diverted from the St. Mary River by the United States. During the period of canal operation 103,800 acre-feet of this diversion from the St. Mary River was delivered to the North Branch of Milk River at Hudson Bay Divide and was made available for irrigation in Montana. The slight decrease in flow between the St. Mary Crossing gauging station and the one at Hudson Bay Divide, which is near the end of the canal, was probably due to the excess of evaporation and seepage over the local run-off entering the canal between these two points.

(25) On October 31, 1951, 6,875 acre-feet of water remained in storage in Sherburne Reservoir. By March 31, 1952, 19,630 acre-feet were in storage and this was increased to 60,403 acre-feet by July 2. After July 2 water was released in varying amounts until the end of the season and by October 31, the storage had decreased to 5,018 acre-feet.

(26) The Canadian St. Mary River Development canals diverted 191,900 acre-feet of water from the St. Mary River in 1952.

Milk River

(27) As there were only a few small unmeasured diversions from the North and South Branches of Milk River in Montana, and only a small quantity diverted in Canada, the natural flow of Milk River at Eastern Crossing is considered as having been delivered to the United States. Therefore, no actual

division was made of the waters of Milk River at Eastern Crossing.

Eastern Tributaries of Milk River

Minor Diversions

(28) There are a number of small diversions from the Eastern Tributaries of Milk River in Saskatchewan for which only estimates of the quantities diverted are available. These estimates are obtained by the Water Rights Division of the Province of Saskatchewan from the individual irrigators as the quantities diverted do not justify the expense of carrying out a regular survey of these small schemes. These estimates, being incomplete and of doubtful value, are not used in the Frenchman River division computations in Table 3. The estimated quantities reported to date for 1952 are, however, shown in Table 4 of this report.

Frenchman River

(29) The only actual division of the waters of the Eastern Tributaries made in 1952 was carried out on the Frenchman River. The details of this division are shown in Table 3 of this report.

(30) The computed natural flow of the Frenchman River at the International Boundary was 362,198 acre-feet. Each country was entitled to fifty percent of the natural flow or 181,099 acre-feet. Canada used 10,737 acre-feet including

1959 acre-feet estimated for minor diversions as shown in Table 4 and 351,461 acre-feet were delivered to the United States.

Lodge Creek

(31) Canada diverted 11,496 acre-feet in the Lodge Creek basin during 1952 while delivering a total of 119,300 acre-feet to the United States. The Canadian diversion of 11,496 acre-feet above includes 223 acre-feet for minor diversions as shown in Table 4.

Battle Creek

(32) Canada diverted ~~12,728~~ 8638 acre-feet from Battle Creek during the open water season of 1952 including 1259 acre-feet for minor diversions as shown in Table 4 and a total of 103,600 acre-feet was delivered to the United States. Corrected May 1956 Re

Description of Tables

(33) The six tables accompanying this report show the total water available in the St. Mary and Milk River basins, the manner in which this was divided, and the use made by each country of its share.

(34) Table 1 deals with the natural flow of the St. Mary River at the Boundary and its division and use by Canada and the United States. It comprises seven pages, one for each month of the irrigation season. The table shows the computed daily natural flow and each country's share thereof. It also

shows the recorded flow at the Boundary and the quantity diverted by each country.

(35) Table 2, page 1 (upper table), shows monthly contributions of Rolph and Lee Creeks in Canada to the measured flow of the St. Mary River near the International Boundary for the irrigation season.

(36) Table 2, page 1 (lower table), shows the disposition made by Canada, monthly, of its share of the natural flow of the St. Mary River. Diverted and unused quantities are also shown.

(37) Table 2, page 2 (upper table), shows the water available for diversion to the United States and the amounts diverted. The unused portion of the United States share is also listed. The measured flow at Eastern Crossing, which includes the natural flow of Milk River plus the water diverted from the St. Mary River, is also shown. This measured flow is the total available to the United States from the two rivers.

(38) Table 2, page 2 (lower table), shows the measured diversions, in acre-feet, from the Milk River to several canals in the United States. These records as well as the data for Fresno and Nelson Reservoirs were furnished by the Milk River Project of the U.S. Bureau of Reclamation.

(39) Table 3 is a compilation, in ten-day periods, of the

natural flow of the Frenchman River at the International Boundary. This table consists of three pages. Page 1 shows the quantity used by Canada in Cypress Lake Reservoir and at East End; Page 2 shows the quantity used by Canada at Val Marie; and Page 3 shows the total quantity used by Canada, the natural flow of Frenchman River at the Boundary, the United States share, and the quantity delivered to the United States.

(40) Table 4 summarizes the available information on the diversions from the Eastern Tributaries of Milk River in Canada.

(41) Table 5 gives the measured diversions from the Eastern Tributaries of Milk River in the United States. Smaller diversions have not been measured.

(42) Table 6 shows the monthly discharge in acre-feet of the Eastern Tributaries of Milk River at the International Boundary, for the season March to October.

(43)

Appendix

An appendix to this report, submitted under separate cover, gives the results of current meter measurements, daily gauge heights and discharge and monthly summaries at 49 gauging stations operated in the two drainage basins during 1952.

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 Day April	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	321	241	303	+ 62		80	18		0	18		- 62
2	327	245	307	+ 62		82	20		0	20		- 62
3	331	248	311	+ 63		83	20		0	20		- 63
4	346	260	316	+ 56		86	30		0	30		- 56
5	365	274	320	+ 46		91	45		0	45		- 46
6	366	274	316	+ 42		92	50		0	50		- 42
7	358	268	303	+ 35		90	55		0	55		- 35
8	362	272	296	+ 24		90	66		0	66		- 24
9	359	269	288	+ 19		90	71		0	71		- 19
10	378	284	307	+ 23		94	71		0	71		- 23
11	441	331	355	+ 24		110	86		0	86		- 24
12	505	379	404	+ 25		126	101		0	101		- 25
13	574	430	468	+ 38		144	106		0	106		- 38
14	717	525	596	+ 71		192	121		0	121		- 71
15	807	570	666	+ 96		237	141		0	141		- 96
16	918	626	736	+ 110		292	182		0	182		- 110
17	1023	678	806	+ 128		345	217		0	217		- 128
18	1166	750	886	+ 136		416	280		0	280		- 136
19	1281	807	970	+ 163		474	311		0	311		- 163
20	1310	822	1060	+ 238		488	250		0	250		- 238
21	1291	812	1080	+ 268		479	211		0	211		- 268
22	1289	811	1150	+ 339		478	139		0	139		- 339
23	1271	802	1190	+ 388		469	81		0	81		- 388
24	1547	940	1250	+ 310		607	297		0	297		- 310
25	1512	923	1330	+ 407		589	182		0	182		- 407
26	1556	945	1440	+ 495		611	116		0	116		- 495
27	1568	951	1540	+ 589		617	28		0	28		- 589
28	1807	1070	1790	+ 720		737	17		0	17		- 720
29	2343	1338	1960	+ 622		1005	383		0	383		- 622
30	2636	1485	2070	+ 585		1151	566		0	566		-585
31												
Total Sec.-ft.	29075	18630	24814	+6184		10445	4261		0	4261		-6184
Mean	969	621	827	206		348	142		0	142		- 206
Ac.-ft.	57,670	36,950	49,220	12,270		20,720	8450		0	8450		-12,270

Table 1
April

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 May Day	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	2282	1308	2160	+ 852		974	122		0	122		- 852
2	2360	1347	2210	+ 863		1013	150		0	150		- 863
3	2385	1359	2280	+ 921		1026	105		0	105		- 921
4	2378	1356	2300	+ 944		1022	78		0	78		- 944
5	2253	1293	2220	+ 927		960	33		0	33		- 927
6	2167	1250	2160	+ 910		917	7		0	7		- 910
7	2065	1199	2070	+ 871		866		5	0	0		- 871
8	1899	1116	1970	+ 854		783		71	0	0		- 854
9	1796	1065	1900	+ 835		731		104	0	0		- 835
10	1743	1038	1870	+ 832		705		127	0	0		- 832
11	1682	1008	1830	+ 822		674		148	0	0		- 822
12	1740	1037	1810	+ 773		703		70	0	0		- 773
13	1775	1054	1790	+ 736		721		15	0	0		- 736
14	2181	1257	1830	+ 573		924	351		0	351		- 573
15	2503	1418	2010	+ 592		1085	493		0	493		- 592
16	2606	1470	2150	+ 680		1136	456		0	456		- 680
17	2640	1487	2210	+ 723		1153	430		0	430		- 723
18	2695	1514	2230	+ 716		1181	465		0	465		- 716
19	2717	1525	2260	+ 735		1192	457		0	457		- 735
20	2643	1488	2320	+ 832		1155	323		0	323		- 832
21	2934	1634	2330	+ 696		1300	604		0	604		- 696
22	2990	1662	2320	+ 658		1328	670		0	670		- 658
23	2802	1568	2260	+ 692		1234	542		0	542		- 692
24	2741	1537	2220	+ 683		1204	521		0	521		- 683
25	2675	1504	2210	+ 706		1171	465		0	465		- 706
26	2781	1557	2230	+ 673		1224	551		0	551		- 673
27	2813	1573	2220	+ 647		1240	593		0	593		- 647
28	2679	1506	2190	+ 684		1173	489		0	489		- 684
29	2680	1507	2150	+ 643		1173	530		0	530		- 643
30	2600	1467	2060	+ 593		1133	540		0	540		- 593
31	2447	1390	1970	+ 580		1057	477		0	477		- 580
Total Sec.-ft.	74,652	42,494	65,740	+23,246		32,158	9452	540	0	9,452		-23,246
Mean	2,408	1,371	2,121	+ 750		1,037	305	17.4	0	305		- 750
Ac.-ft.	148,100	84,290	130,400	+46,110		63,780	18,750	1,070	0	18,750		-46,110

Table 1
May

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 Day June	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	2226	1280	1850	+ 570		946	376		0	376		- 570
2	2100	1217	1760	+ 543		883	340		0	340		- 543
3	2023	1178	1700	+ 522		845	323		0	323		- 522
4	2084	1209	1730	+ 521		875	354		0	354		- 521
5	2264	1299	1830	+ 531		965	434		0	434		- 531
6	2478	1406	1960	+ 554		1072	518		0	518		- 554
7	2622	1478	2030	+ 552		1144	592		0	592		- 552
8	2731	1532	2080	+ 548		1199	651		0	651		- 548
9	2801	1567	2280	+ 713		1234	521		0	521		- 713
10	2501	1417	2400	+ 983		1084	101		0	101		- 983
11	2238	1286	2430	+ 1144		952		192	0	0		-1144
12	2725	1529	2880	+ 1351		1196		155	0	0		-1351
13	2666	1500	2880	+ 1380		1166		214	0	0		-1380
14	2830	1582	2640	+ 1058		1248	190		0	190		-1058
15	2450	1392	2550	+ 1158		1058		100	0	0		-1158
16	2293	1313	2440	+ 1127		980		147	0	0		-1127
17	2185	1259	2350	+ 1091		926		165	0	0		-1091
18	2143	1238	2290	+ 1052		905		147	0	0		-1052
19	2175	1254	2250	+ 996		921		75	0	0		- 996
20	2046	1190	2120	+ 930		856		74	0	0		- 930
21	1937	1135	1980	+ 845		802		43	0	0		- 845
22	1936	1135	1880	+ 745		801	56		0=	56		- 745
23	1978	1156	1730	+ 574		822	248		0	248		- 574
24	1997	1165	1650	+ 485		832	347		0	347		- 485
25	1867	1100	1570	+ 470		767	297		0	297		- 470
26	1787	1030	1460	+ 430		697	267		0	267		- 430
27	1704	1019	1420	+ 401		685	284		0	284		- 401
28	1725	1029	1430	+ 401		696	295		0	295		- 401
29	1816	1075	1460	+ 385		741	356		0	356		- 385
30	1845	1089	1500	+ 411		756	345		0	345		- 411
31												
Total Sec.-ft.	66,113	38,059	60,530	+22,471		28,054	6,895	1,312	0	6,895		-22,471
Mean	2,204	1,269	2,018	+ 749		935	230	43.7	0	230		- 749
Ac.-ft.	131,100	75,490	120,100	+44,570		55,640	13,680	2,600	0	13,680		-44,570

Table 1
June

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 July Day	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	2020	1177	1530	+ 353		843	490		0	490		- 353
2	2114	1224	1540	+ 316		890	574		0	574		- 316
3	2320	1327	1630	+ 303		993	675		15	690		- 303
4	2064	1199	1550	+ 351		865	366		148	514		- 351
5	1174	954	1470	+ 516		620		145	249	104		- 516
6	1786	1060	1360	+ 300		726		34	460	426		- 300
7	1755	1044	1330	+ 286		711		50	475	425		- 286
8	1592	963	1250	+ 287		629		169	511	342		- 287
9	1516	925	1160	+ 235		591		172	528	356		- 235
10	1440	887	1100	+ 213		553		217	557	340		- 213
11	1473	903	1110	+ 207		570		198	561	363		- 207
12	1483	908	1090	+ 182		575		166	559	393		- 182
13	1473	903	1010	+ 107		570		103	566	463		- 107
14	1441	887	906	+ 19		554		47	582	535		- 19
15	1337	835	846	+ 11		502		89	580	491		- 11
16	1313	823	808		- 15	490		73	578	505	+ 15	
17	1278	806	802		- 4	472		104	580	476	+ 4	
18	1271	802	789		- 13	469		96	578	482	+ 13	
19	1291	812	796		- 16	479		83	578	495	+ 16	
20	1270	802	814	+ 12		468		122	578	456		- 12
21	1306	820	783		- 37	486		53	576	523	+ 37	
22	1215	774	764		- 10	441		123	574	451	+ 10	
23	1257	795	745		- 50	462		60	572	512	+ 50	
24	1186	760	721		- 39	426		107	572	465	+ 39	
25	1240	787	727		- 60	453		57	570	513	+ 60	
26	1157	745	727		- 18	412		140	570	430	+ 18	
27	1060	697	714	+ 17		363		224	570	346		- 17
28	1059	696	708	+ 12		363		219	570	351		- 12
29	1061	697	684		- 13	364		191	568	377	+ 13	
30	1015	674	672		- 2	341		225	568	343	+ 2	
31	1041	687	660		- 27	354		187	568	381	+ 27	
Total Sec.-ft.	44,408	27,373	30,796	+3,727	-304	17,035	2,105	3,454	14,961	13,612	+304	-3,727
Mean	1,433	883	993			550	67.9	111	483	439		- [illegible]
Ac.-ft.	88,080	54,290	61,080	+7,392	-603	33,790	4,180	6,850	29,670	27,000	+603	-7,392

Table 1
July

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 Day August	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	999	666	672	+ 6		333		241	568	327		- 6
2	941	637	672	+ 35		304		301	570	269		- 35
3	927	630	672	+ 42		297		315	570	255		- 42
4	965	649	672	+ 23		316		281	574	293		- 23
5	1031	682	745	+ 63		349		294	580	286		- 63
6	940	637	672	+ 35		303		306	574	268		- 35
7	952	643	678	+ 35		309		300	574	274		- 35
8	1049	691	721	+ 30		358		244	572	328		- 30
9	1056	695	714	+ 19		361		226	568	342		- 19
10	1182	758	821	+ 63		424		213	574	361		- 63
11	1124	729	783	+ 54		395		229	570	341		- 54
12	1194	764	714		- 50	430		88	568	480	+ 50	
13	1140	737	654		- 83	403		82	568	486	+ 83	
14	1082	708	601		- 107	374		93	574	481	+107	
15	965	649	590		- 59	316		199	574	375	+ 59	
16	910	622	590		- 32	288		254	574	320	+ 32	
17	855	594	578		- 16	261		297	574	277	+ 16	
18	767	550	551	+ 1		217		358	574	216		- 1
19	746	540	518		- 22	206		348	576	228	+ 22	
20	716	525	491		- 34	191		349	574	225	+ 34	
21	720	527	470		- 57	193		326	576	250	+ 57	
22	695	514	465		- 49	181		348	578	230	+ 49	
23	661	496	459		- 37	165		374	576	202	+ 37	
24	581	436	444	+ 8		145		439	576	137		- 8
25	562	422	433	+ 11		140		445	574	129		- 11
26	592	444	418		- 26	148		400	574	174	+ 26	
27	530	398	398		0	132		444	576	132	-0	
28	548	411	374		- 37	137		404	578	174	+ 37	
29	498	374	369		- 5	124		449	578	129	+ 5	
30	524	393	389		- 4	131		449	584	135	+ 4	
31	548	411	389		- 22	137		432	591	159	+ 22	
Total Sec.-ft.	26,000	17,932	17,717	+ 425	- 640	8,068		9,528	17,811	8,283	+ 640	- 425
Mean	839	578	572	-	-	260		307	575	267	-	-
Ac.-ft.	51,570	35,570	35,140	+ 843	-1269	16,000		18,900	35,330	16,430	+1269	- 843

Table 1
August

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 Day September	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St. Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	571	428	384		- 44	143		404	591	187	+ 44	
2	529	397	356		- 41	132		416	589=	173	+ 41	
3	472	354	333		- 21	118		439	578	139	+ 21	
4	465	349	315		- 34	116		422	572	150	+ 34	
5	436	327	311		- 16	109		447	572	125	+ 16	
6	452	339	298		- 41	113		416	570	154	+ 41	
7	487	365	311		- 54	122		392	568	176	+ 54	
8	453	340	311		- 29	113		432	574	142	+ 29	
9	428	321	311		- 10	107		461	578	117	+ 10	
10	454	340	315		- 25	114		439	578	139	+ 25	
11	508	381	315		- 66	127		385	578	193	+ 66	
12	457	343	311		- 32	114		432	578	146	+ 32	
13	436	327	319		- 8	109		463	580	117	+ 8	
14	445	334	306		- 28	111		441	580	139	+ 28	
15	452	339	285		- 54	113		411	578	167	+ 54	
16	418	314	273		- 41	104		431	576	145	+ 41	
17	397	298	265		- 33	99		442	574	132	+ 33	
18	392	294	249		- 45	98		427	570	143	+ 45	
19	365	274	257		- 17	91		460	568	108	+ 17	
20	379	284	253		- 31	95		440	566	126	+ 31	
21	357	268	249		- 19	89		460	568	108	+ 19	
22	349	262	245		- 17	87		464	568	104	+ 17	
23	341	256	241		- 15	85		468	568	100	+ 15	
24	372	279	234		- 45	93		430	568	138	+ 45	
25	337	253	230		- 23	84		461	568	107	+ 23	
26	322	242	226		- 16	80		472	568	96	+ 16	
27	331	248	234		- 14	83		473	570	97	+ 14	
28	301	226	238	+ 12		75		509	572	63		- 12
29	283	212	223	+ 11		71		508	568	60		- 11
30	277	208	184		- 24	69		445	538	93	+ 24	
31												
Total Sec.-ft.	12,266	9,202	8,382	+ 23	- 843	3,064		13,290	17,174	3,884	+ 843	- 23
Mean	,409	13,397	279	-	-	102		443	572	129	-	-
Ac.-ft.	24,330	18,250	16,630	+ 46	-1,672	6,080		26,360	34,060	7,700	+1672	- 46

Table 1
September

NATURAL FLOW OF ST. MARY RIVER AND ITS USE BY CANADA AND UNITED STATES (Units in Cu. ft. per sec.) Table 1.

1952 Day October	Computed Nat. Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River	Recorded Flow of St.Mary River	Canada rec'd more (+); less (-); than share +	Canada rec'd more (+); less (-); than share -	U.S. share of St. Mary River.	U.S.B.R. Sherburne Res. (2-day lag applied) Stored	U.S.B.R. Sherburne Res. (2-day lag applied) Rlsd.	Diverted by U.S. St. Mary Canal	Net Used by United States	U.S. used more (+); less (-) than share. +	U.S. used more (+); less (-) than share. -
1	301	226	159		- 67	75		333	475	142	+ 67	
2	402	302	139		- 163	100		183	446	263	+ 163	
3	328	246	165		- 81	82		247	410	163	+ 81	
4	275	206	147		- 59	69		273	401	128	+ 59	
5	286	214	125		- 89	72		218	379	161	+ 89	
6	317	238	112		- 126	79		133	338	205	+ 126	
7	351	263	128		- 135	88		77	300	223	+ 135	
8	333	250	115		- 135	83		70	288	218	+ 135	
9	276	207	108		- 99	69		107	275	168	+ 99	
10	247	185	100		- 85	62		93	240	147	+ 85	
11	283	212	144		- 68	71		62	201	139	+ 68	
12	285	214	122		- 92	71		25	188	163	+ 92	
13	316	237	123		- 114	79	45		148	193	+ 114	
14	367	275	285	+ 10		92	66		16	82		- 10
15	343	257	277	+ 20		86	64		2	66		- 20
16	347	260	257		- 3	87	90		0	90	+ 3	
17	302	226	241	+ 15		76	61		0	61		- 15
18	267	200	230	+ 30		67	37		0	37		- 30
19	239	179	215	+ 36		60	24		0	24		- 36
20	232	174	208	+ 34		58	24		0	24		- 34
21	225	169	201	+ 32		56	24		0	24		- 32
22	211	158	184	+ 26		53	27		0	27		- 26
23	188	141	165	+ 24		47	23		0	23		- 24
24	195	146	171	+ 25		49	24		0	24		- 25
25	192	144	171	+ 27		48	21		0	21		- 27
26	185	139	162	+ 23		46	23		0	23		- 23
27	180	135	156	+ 21		45	24		0	24		- 21
28	183	137	162	+ 25		46	21		0	21		- 25
29	180	135	156	+ 21		45	24		0	24		- 21
30	177	133	153	+ 20		44	24		0	24		- 20
31	174	130	153	+ 23		44	21		0	21		- 23
Total Sec.-ft.	8,187	6,138	5,234	+ 412	- 1316	2,049	667	1,821	4,107	2,953	+1316	- 412
Mean	264	198	169			66.1	21.5	58.7	132	95.3	-	-
Ac.-ft.	16,240	12,170	10,380	+ 817	- 2610	4,060	1,320	3,610	8,150	5,860	+2610	- 817

Table 1

October

DIVISION OF ST. MARY RIVER
CANADA
1952
Water Available in Acre-feet

Month 1952	St. Mary R. Boundary	Rolph Creek Kimball	Lee Creek Cardston	Combined Flow
April	49220	5010	12880	67110
May	130400	1020	7980	139400
June	120100	460	4450	125010
July	61080	487	2620	64187
August	35140	493	2110	37743
September	16630	480	1320	18430
October	10380	434	1110	11924
Total	422950	8384	32470	463804

DISPOSITION OF CANADIAN SHARE

Month 1952	Canadian St. Mary Canal Spring Coulee	M.I.D. Canal Spring Coulee	Total Diverted	Canada's Share St. Mary R.	Unused by Canada
April	Nil	Nil	Nil	36950	36950
May	14130	35	14165	84290	70125
June	35390	1010	36400	75490	39090
July	42890	943	43833	54290	10457
Aug.	45690	868	46558	35570	-10988
Sept.	30570	801	31371	18250	-13121
Oct.	19110	469	19579	12170	- 7409
Total	187780	4126	191906	317010	125104

Storage in St. Mary Reservoir on April 1, = 72000 acre-feet
October 31, = 54300 acre-feet

DIVISION OF ST. MARY RIVER
UNITED STATES
1952

Water Available in Acre-feet.

Month	St. Mary River						Milk River
	U.S. Share	Sherburne Res. Stored	Sherburne Res. Released	Total Available for Div.	Diverted	Unused	Measured Flow at Eastern Crossing
April	20720	8450	0	12270	0	12270	85110
May	63780	18750	1070	46100	0	46100	28780
June	55640	13680	2600	44560	0	44560	11920
July	33790	4180	6850	36460	29670	6790	29880
Aug.	16000	0	18900	34900	35330	0	36300
Sept.	6080	0	26360	32440	34060	0	34520
Oct.	4060	1320	3610	6350	8150	0	17290
Totals	200070	46380	59390	213080	107210	109720	243800

Storage in Sherburne Lake Reservoir on March 31, = 19630 acre-feet.
October 31, = 5018 acre-feet.
Storage in Fresno Reservoir on March 31, =145009 acre-feet.
October 31, = 82927 acre-feet.
The water stored in Sherburne Lake Reservoir includes the amount lost by evaporation.

DIVERSIONS FROM MILK RIVER
UNITED STATES
1952
Quantities in Acre-feet

Month	Fort Belknap Canal	Paradise Canal	Harlem Canal	Harlem No. 2	Agency Canal	Dodson North	Dodson South	Vandalia Canal	Total
April	--	--	--	--	--	--	--	--	--
May	5020	--	--	--	--	2590	6780	298	14690
June	11630	3350	--	--	1180	6160	12360	5820	40500
July	16090	6470	1590	1130	4920	4260	16110	4970	55540
Aug.	12730	6130	3090	188	1210	5050	13780	5650	47830
Sept.	7110	1900	1370	264	--	4080	2500	2700	19920
Oct.	--	--	--	--	--	--	--	--	--
Total	52580	17850	6050	1580	7310	22140	51530	19440	178480

Storage in Nelson Reservoir on March 31, = 37020 acre-feet.
October 31, = 36664 acre-feet.

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY 1952

Water Used by Canada at Cypress Lake and East End
Quantities in Second-foot Days

Date at Int'l. Boundary	Used at Cypress: Stored	Used at Cypress: Released	Used at East End: Stored	Used at East End: Released	Used at East End: Diverted	Used at East End: Return Flow	Total Used
March							
1 - 10	0		0		0	0	0.0
11 - 20	0			1	0	0	- 1.0
21 - 31	0		0		0	0	0.0
April							
1 - 10	0		17		0	0	17.0
11 - 20	608.0		199		0	0	807.0
21 - 30	636.9			467	0	0	169.9
May							
1 - 10		147.9	0		0	0	-147.9
11 - 20	320.8		0		0	0	320.8
21 - 31	151.6		0		0	0	151.6
June							
1 - 10	10.5		0		0	0	10.5
11 - 20	19.8		0		0	0	19.8
21 - 30		10.6	0		0	0	- 10.6
July							
1 - 10		101.1	0		0	0	-101.1
11 - 20	29.5		0		0	0	29.5
21 - 31		5.9	0		0	0	- 5.9
Aug.							
1 - 10	27.8		0		0	0	27.8
11 - 20	15.5		0		0	0	15.5
21 - 31		2.2	0		0	0	- 2.2
Sept.							
1 - 10		7.3	0		0	0	- 7.3
11 - 20		11.5	0		0	0	- 11.5
21 - 30		12.2	0		0	0	- 12.2
Oct.							
1 - 10		9.8	0		0	0	- 9.8
11 - 20		10.8	0		0	0	- 10.8
21 - 31		17.7	27		0	0	9.3
Total							
Sec-ft. days	1820.4	337.0	243	468	0	0	1258.4
Mean	7.43	1.38	0.99	1.91	0	0	5.14
Acre-ft.	3611	668	482	928	0	0	2496

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY
- 1952 -

Water Used by Canada at Val Marie
Quantities in Second-foot Days

Date at Int'l Boundary	Used at Upper Val Marie: Stored	Rls'd	Diverted	Used at Lower Val Marie: Stored	Rls'd	Diverted	Return Flow	Total Used
March								
1 - 10	28		0	0		0	0	28.0
11 - 20	46		0	0		0	0	46.0
21 - 31	41		0	48		0	0	89.0
April								
1 - 10	210		0	1237		0	0	1447.0
11 - 20	768		0	2744		0	0	3512.0
21 - 30		436	0		3935	0	0	-4371.0
May								
1 - 10		236	0		22	0	0	- 258.0
11 - 20	76		0	1764		0	0	1840.0
21 - 31	372		0	951		0	0	1323.0
June								
1 - 10		108	5.6	1038		0	1.7	933.9
11 - 20		27	107.8		344	43.7	45.4	- 264.9
21 - 30	31		339.6		390	463.1	240.8	202.9
July								
1 - 10	53		202.7	76		589.8	237.8	683.7
11 - 20		29	154.7		793	446.7	180.4	- 401.0
21 - 31	84		46.8		36	207.5	76.3	226.0
Aug.								
1 - 10	69		11.9		801	70.7	24.8	- 674.2
11 - 20		74	12.2	44		0.7	3.9	-21.0
21 - 31		278	0	135		140.5	42.2	-44.7
Sept.								
1 - 10		293	0	326		72.5	21.8	83.7
11 - 20		292	0	2		46.8	14.0	-257.2
21 - 30		51	0		578	0	0	-629.0
Oct.								
1 - 10	139		0		468	0	0	-329.0
11 - 20	200		20.9		274	0	6.3	-59.4
21 - 31	50		0	11		0	0	61.0
Total								
Sec-ft. days	2167	1824	902.2	8376	7641	2082.0	895.4	3166.8
Mean	8.84	7.44	3.68	34.2	31.2	8.50	3.65	12.9
Acre-feet	4298	3618	1789	16614	15156	4130	1776	6281

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY
- 1952 -

Quantities in Second-foot Days

Date at Int'l Bdy	Used by Canada: Cypress & East End	Used by Canada: Val Marie	Total used by Canada	Frenchman River: Measured Flow Bdy	Frenchman River: Computed Nat. Flow	United States: Share	United States: Received + or -
March							
1 - 10	0.0	28.0	28.0	187.0	215.0	107.5	+ 79.5
11 - 20	-1.0	46.0	45.0	204.0	249.0	124.5	+ 79.5
21 - 31	0.0	89.0	89.0	423.0	512.0	256.0	+ 167.0
April							
1 - 10	17.0	1447.0	1464.0	9400.0	10864.0	5432.0	+ 3968.0
11 - 20	807.0	3512.0	4319.0	98510.0	102829.0	51414.5	+47095.5
21 - 30	169.9	-4371.0	-4201.1	51470.0	47268.9	23634.4	+27835.6
May							
1 - 10	-147.9	-258.0	-405.9	4291.0	3885.1	1942.6	+ 2348.4
11 - 20	320.8	1840.0	2160.8	585.8	2746.6	1373.3	- 787.5
21 - 31	151.6	1323.0	1474.6	379.1	1853.7	926.8	- 547.7
June							
1 - 10	10.5	933.9	944.4	404.9	1349.3	674.6	- 269.7
11 - 20	19.8	-264.9	-245.1	878.0	632.9	316.4	+ 561.6
21 - 30	- 10.6	202.9	192.3	664.3	856.6	428.3	+ 236.0
July							
1 - 10	-101.1	683.7	582.6	754.0	1336.6	668.3	+ 85.7
11 - 20	29.5	-401.0	-371.5	1709.0	1337.5	668.8	+ 1040.2
21 - 31	- 5.9	226.0	220.1	3260.0	3480.1	1740.0	+ 1520.0
August							
1 - 10	27.8	-674.2	-646.4	1053.0	406.6	203.3	+ 849.7
11 - 20	15.5	- 21.0	- 5.5	248.6	243.1	121.6	+ 127.0
21 - 31	- 2.2	- 44.7	- 46.9	245.1	198.2	99.1	+ 146.0
Sept.							
1 - 10	- 7.3	83.7	76.4	250.7	327.1	163.6	+ 87.1
11 - 20	- 11.5	-257.2	-268.7	543.6	274.9	137.4	+ 406.2
21 - 30	- 12.2	-629.0	-641.2	821.0	179.8	89.9	+ 731.1
Oct.							
1 - 10	- 9.8	-329.0	-338.8	559.4	220.6	110.3	+ 449.1
11 - 20	- 10.8	- 59.4	- 70.2	264.2	194.0	97.0	+ 167.2
21 - 31	9.3	61.0	70.3	89.0	159.3	79.6	+ 9.4
Total Sec.-ft.days	1258.4	3166.8	4425.2	177194.7	181619.9	90809.8	+86384.9
Mean	5.14	12.9	18.1	723	741	371	353
Acre-ft.	2496	6281	8777	351461	360238	180119	171342
Estimated Minor Diversions from Table 4			1959 10736		1959 362197	181098	+170363

DIVERSIONS FROM THE EASTERN TRIBUTARIES OF MILK RIVER IN CANADA

1952

Quantities in Acre-feet

Lodge Creek Tributary Basin

Spangler Ditch near Govenlock		673
Middle Creek near Alberta Boundary	20,600	
Estimated Middle Creek Overflow Back to Lodge Creek	10,000[e]	10,600[e]
Total of 11 Minor Diversions, detailed in Appendix		223
Total Quantity Diverted by Canada		11,496[e]
(Lodge Creek at International Boundary - 119,300)		

Battle Creek Tributary Basin

Net diversion by Cypress Lake West Inflow Canal	4690	
Returned by Cypress Lake West Outflow Canal	2820	1870
Vidora Ditch near Consul Sask.		1140[e]
Richardson Ditch near Consul		569
McKinnon Ditch near Consul		1490
Stirling and Nash Ditch near Consul		2310
Total of 32 Minor Diversions, detailed in Appendix		(1259)
Total Quantity Diverted by Canada		8638
(Battle Creek at International Boundary - 103,600) 7 379 110,979		1259 7379

Frenchman River Tributary Basin

Diverted to Cypress Lake Reservoir	3611	
Released from Cypress Lake Reservoir	668	2943
Diverted to East End Reservoir	482	
Released from East End Reservoir	928	-446
Diverted to Val Marie Reservoirs	20912	
Released from Val Marie Reservoirs	18774	2138
East End Irrigation District Canal (Not Used)	0	
Val Marie Irrigation District West Canals	1789	
Val Marie Main Canal	4130	
	5919	
Estimated Return Flow	1776	4143
Total of 33 Minor Diversions detailed in Appendix		1959
Total Diverted by Canada		10737
(Frenchman River at International Boundary - 351,500)		

Table 4

DIVERSIONS FROM THE EASTERN TRIBUTARIES OF MILK RIVER IN CANADA

Quantities in Acre-feet

Lodge Creek Tributary Basin

Spangler Ditch near Govenlock		673
Middle Creek near Alberta Boundary	20600	
Estimated Middle Creek Overflow Back to Lodge Creek	10000e	10600e
Total of 11 Minor Diversions, detailed in Appendix		223
Total Quantity Diverted by Canada (Lodge Creek at International Boundary - 119,300)		11496e

Battle Creek Tributary Basin

Diverted by Cypress Lake West Inflow Canal	~~8780~~ 4690	~~1870~~
Returned by Cypress Lake West Outflow Canal	2820	~~5960~~
Vidora Ditch near Consul, Sask.		1140e
Richardson Ditch near Consul		569
McKinnon Ditch near Consul		1490
Stirling and Nash Ditch near Consul		2310
Total of 32 Minor Diversions, detailed in Appendix		1259
Total Quantity Diverted by Canada (Battle Creek at International Boundary - 103,600)		~~12728~~ 8638

Frenchman River Tributary Basin

Diverted to Cypress Lake Reservoir	3611	
Released from Cypress Lake Reservoir	668	2943
Diverted to East End Reservoir	482	
Released from East End Reservoir	928	-446
Diverted to Val Marie Reservoirs	20912	
Released from Val Marie Reservoirs	18774	2138
East End Irrigation District Canal (Not Used)	0	
Val Marie Irrigation District West Canals	1789	
Val Marie Main Canal	4130	
	5919	
Estimated Return Flow	1776	4143
Total of 33 Minor Diversions detailed in Appendix		1959
Total Diverted by Canada (Frenchman River at International Boundary - 351,500)		10737

Table 5

MEASURED DIVERSIONS FROM THE NORTHERN TRIBUTARIES

OF MILK RIVER IN THE UNITED STATES

1952

Quantities in Acre-feet

Irrigator	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Lodge Creek									
N.Chinook Canal	0	[a]5000	1280	[a]559	[a]256	[a]9.9	0	0	7104.9
Battle Creek									
Matheson Canal	0	0	0	0	0	0	0	0	[b]0
Frenchman River									
Frenchman Canal	0	0	335	2090	2240	487	500	0	5652
	0	5000	1615	2649	2496	496.9	500	0	12756.9

a - Partly estimated record.

b - About 200 additional acre-feet were pumped from Battle Creek below the diversion to irrigate land previously served by the Matheson Canal.

Monthly and Annual Measured Discharge in Acre-feet of Eastern Tributaries of Milk River at International Boundary for 1952.

Station	March	April	May	June	July	Aug.	Sept.	Oct.	Total
Lodge Creek	89	113000	4900	515	780	10	0	0	119300 *
Woodpile Coulee	0	9800	13	0	0	0	0	0	9810
Battle Creek	79	90750	9140	1500	911	272	454	454	103600
Lyons Coulee	0	11660	8.7	0	0	0	0	0	11670
E. Br. Battle Ck.	14	12150	49	2	0	0	0	0	12220
Whitewater Creek	0	40520	168	17.7	320	8.3	6.1	8.9	41050
Frenchman River	1610	316100	10420	3860	11350	3070	3200	1810	351400
McEachern Creek	0	32680	47	5.6	157	1.4	0	0	32890
Horse Creek	0	11080	54	6.5	379	1.4	0	0	11520
Rock Creek	16	29610	738	286	2490	137	131	145	33550
									727000
Totals	1808	667350	25537.7	6192.8	16387	3500.1	3791.1	2417.9	726984.6

* Includes McRae Coulee.

Table 6

GAUGING STATIONS OPERATED JOINTLY BY
CANADA AND UNITED STATES
IN ST. MARY AND MILK RIVER DRAINAGE BASINS

- 1952 -

Map Index	Stream and Location	Remarks
	St. Mary River Basin	
$5AE_1$	St. Mary River near International Boundary	Int.[a]
$5AE_{0.5}$	Swiftcurrent Creek at Many Glacier, Mont.	Int.[a]
$5AE_{0.9}$	Sherburne Lake Reservoir @ Sherburne, Mont.	Int.R.[a]
$5AE_{0.6}$	Swiftcurrent Creek @ Sherburne, Mont.	Int.[a]
$5AE_{0.1}$	St. Mary Canal @ Intake near Babb, Mont.	U.S.[c] ?
$5AE_{0.2}$	St. Mary Canal @ St. Mary Crossing near Babb, Montana	Int.[a]
$5AE_{0.3}$	St. Mary Canal at Hudson Bay Divide nr. Browning, Mont.	Int.[a]
	Milk River Basin	
$11AA_5$	Milk River at Milk River, Alta.	Int.[a]
$11AA_{0.2}$	Milk River At Eastern Crossing of Int'l. Boundary	Int.[a]
$11AA_{0.3}$	North Branch of Milk River above St. Mary Canal near Browning, Mont.	Int.[a]
$11AA_1$	North Branch of Milk River nr. Int'l. Boundary	Int.[a]
$11AA_{25}$	South Branch of Milk River nr. Int'l.Bdy.	Int.[a]
$11AD_{0.1}$	Whitewater Creek nr. Int'l. Boundary	Int.[a]
	Lodge Creek Tributary Basin	
$11AB_{83}$	Lodge Creek below McRae Coulee @ International Boundary (This station was relocated at a site below McRae Coulee in the fall of 1951.)	Int.[a]
	Battle Creek Tributary Basin	
$11AB_{76}$	Battle Creek above Cypress Lake W. Inflow Canal near West Plains, Sask.	Int.[a]
$11AB_{27}$	Battle Creek at International Boundary	Int.[a]
$11AB_{0.1}$	Woodpile Coulee near Int'l. Boundary	Int.[a]

Map Index	Stream and Location	Remarks
	Battle Creek Tributary Basin	
$11AB_{0.3}$	East Branch of Battle Creek nr. Int'l. Bdy.	Int.[a]
$11AB_{75}$	Lyons Coulee at International Boundary	Int.[a]
$11AB_{78}$	Cypress Lake West Inflow Canal nr. West Plains, Sask.	Int.[a]
$11AB_{77}$	Cypress Lake West Outflow Canal near West Plains, Sask.	Int.[a]
	Frenchman River Tributary Basin	
$11AC_{37}$	Cypress Lake Reservoir near Vidora, Sask.	Int.R.[a]
$11AC_{64}$	Belanger Creek Diversion to Cypress Lake	Int.[a]
$11AC_{60}$	Cypress Lake East Outflow Canal near Vidora, Saskatchewan	Int.[a]
$11AC_{18}$	Frenchman River above East End Reservoir at East End, Sask.	Int.[a]
$11AC_{55}$	East End Reservoir at East End, Sask.	Int.R.[a]
$11AC_{52}$	East End Canal at East End, Sask.	Int.[a]
$11AC_{1}$	Frenchman River below East End Reservoir at East End, Saskatchewan	Int.[a]
$11AC_{57}$	Frenchman River at Morrison's near East End, Sask.	Int.[a]
$11AC_{23}$	Frenchman River at 50 Mile near Bracken, Saskatchewan	Int.[a]
$11AC_{63}$	Val Marie West Reservoir, near Val Marie, Saskatchewan.	Int.R.[a]
$11AC_{56}$	Val Marie Reservoir near Val Marie, Sask.	Int.R.[a]
$11AC_{54}$	Val Marie Canal near Val Marie, Sask.	Int.[a]
$11AC_{51}$	Frenchman River below Val Marie, Sask.	Int.[a]
$11AC_{41}$	Frenchman River at International Bdry.	Int.[a]
	Rock Creek Tributary Basin	
$11AE_{0.2}$	Rock Creek near International Boundary	Int.[a]
$11AE_{0.3}$	Horse Creek near International Boundary	Int.[a]
$11AE_{0.4}$	McEachern Creek near International Boundary	Int.[a]

OTHER GAUGING STATIONS MAINTAINED IN ST. MARY AND MILK RIVER DRAINAGE BASINS

-1952-

Map Index	Stream and Location	Remarks
	St. Mary River Basin	
$5AE_5$	Rolph Creek near Kimball, Alta.	Canada [a]
$5AE_2$	Lee Creek at Cardston, Alta.	Canada [a]
$5AE_{26}$	Canadian St. Mary Canal near Spring Coulee, Alta.	Canada [a]
$5AE_{21}$	Magrath Irrigation District Canal near Spring Coulee, Alta.	Canada [a]
	St. Mary Lake near St. Mary Mont.	U.S.[c]
	Lower St. Mary Lake near Babb, Mont.	U.S.[c]
	St. Mary River near Babb, Mont.	U.S.[c]
	Milk River Basin	
	Lodge Creek Tributary Basin	
$11AB_{72}$	C.B. Spangler Ditch near Govenlock, Sask.	Canada [a]
$11AB_9$	Middle Creek near Alberta Boundary	Canada [a]
2	North Chinook Canal near Havre, Mont,	U.S.[b]
	Battle Creek Tributary Basin	
$11AB_{58}$	Richardson Ditch near Consul, Sask.	Canada [a]
$11AB_{44}$	McKinnon Ditch near Consul, Sask.	Canada [a]
$11AB_{18}$	Stirling and Nash Ditch near Consul, Sask.	Canada [a]
$11AB_{84}$	Vidora Ditch near Consul	Canada [a]
3	Matheson Canal near Chinook, Mont.	U.S.[b]
	Frenchman River Tributary Basin	
$11AC_{65}$	Val Marie West Gravity Canal, near Val Marie	Canada [a]
$11AC_{66}$	Val Marie West Pumping Canal near Val Marie	Canada [a]
4	Frenchman Canal near Saco, Mont.	U.S.[b]

Int. - International Gauging Station.
Int.R. - International Reservoir Station.
United States - operated by United States Geological Survey.
Canada - Operated by Water Resources Division.
a - Complete data contained in Appendix.
b - Data tabulated in Report only.
c - Data not used in Division and not listed in either Report or Appendix.

MAP OF SAINT MARY AND MILK RIVER DRAINAGE BASINS

0 10 25 50 75 Miles