Report to

THE INTERNATIONAL JOINT COMMISSION

on

THE DIVISION AND USE MADE OF THE WATERS OF

ST. MARY AND MILK RIVERS

by

J. T. JOHNSTON
representing Canada

and

GEORGE OTIS SMITH
representing the United States

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The Honourable, The International Joint Commission,
Washington, D.C., and Ottawa, Ontario.

Gentlemen:-

In compliance with the provisions of Clause 10 of your order of the 4th of 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 of 1928.

Respectfully submitted

J. T. Johnston

Accredited officer of His Majesty

Geo. Ring Jr.

Accredited officer of the United States.

April 2nd 1929.

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 1928 by the same engineers as in previous years.

Dr. G. Otis Smith, Director of the United States Geological Survey, as accredited officer for the United States was represented in the field by Mr. W. A. Lamb, District Engineer, Helena, Montana. Mr. J. T. Johnston, Director, Dominion Water Power and Reclamation Service, as accredited officer of His Majesty, was represented by Mr. S. G. Dawson.

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

The hydrometric data, on which this report is based, were obtained in Montana, by engineers of the United States Geological Survey under the personal supervision of Mr. Lamb; while those from streams and ditches in Canada were collected under the supervision of the Commissioner of Irrigation, Dominion Water Power and Reclamation Service, Calgary, Alberta. The international gauging stations were visited frequently by the representatives of both countries.

As the natural flow of the St. Mary river remained above the combined capacity of the two canals diverting therefrom until the end of July, when the peak of demand had passed, the usual

weekly schedule showing the use made of the waters was not issued until after the middle of July. Heavy precipitation during June and early July, both in Montana and Alberta so lessened the demand for diverted water in the first part of the season that the respective shares of St. Mary river were sufficient to satisfy the requirements in each country and allow storage from Swiftcurrent creek for use later.

Division of Water.

As the loss between the intake of the United States St. Mary canal and the canal crossing of the St. Mary river, which this year was 13% of the water diverted at the headgates, is assumed to return directly to the river and eventually become available to Canada, the discharge of 72,300 acre-feet in the canal at the St. Mary Crossing during the period of operation between June 4 and September 18 is considered as the actual quantity diverted from St. Mary river by the United States.

69,900 acre-feet of St. Mary river water were delivered to the Milk river and made available for irrigation in Montana. The loss between St. Mary river Crossing and Hudson Bay Divide, at the end of the canal, amounted to 2,400 acre feet or 3% of the flow at St. Mary river Crossing. This loss is attributed to evaporation and seepage over the natural local inflow.

From the breakup in early May until the latter part of July a portion of the daily flow of Swiftcurrent creek, a large tributary of the St. Mary river above the headworks of the United

States St. Mary Canal, was stored in Sherburne reservoir. The impounded water was used to augment the natural flow of St. Mary river during August and September and the unexpended stored water was wasted in October.

Except for 104 acre-feet, which were diverted from Deer Creek by the Deer Creek Cattle Company, no water was diverted from Milk river in Canada. The natural flow of Milk river for 1928 is considered as having been passed to the United States. The total diversion for irrigation from Milk river in the United States was 116,854 acre-feet.

The total recorded flow crossing the International Boundary from the northern tributaries of Milk river was 247,800 acre-feet, but 46% or 112,800 acre-feet of this flow occurred during March, leaving 135,000 acre-feet available during the irrigation season.

The Canadian Pacific Railway canal at Kimball, Alberta, diverted 106,000 acre-feet from the St. Mary river during the period of operation from May 10 to October 6, to irrigate lands in the Lethbridge and Taber sections. From Rolph creek, a tributary of St. Mary river, 15 acre-feet were diverted by the Vaughn lower ditch.

The heavy rains in June and early July were evidently sufficient to mature the crops in southern Saskatchewan as very little water was diverted from the northern tributaries of Milk river.

From Lodge Creek basin, 245 acre-feet were diverted by Canada and 732 acre-feet were diverted by the United States; from

Battle Creek, 512 acre-feet were diverted in Canada and 363 acre-feet were diverted in the United States; and from Frenchman River, 596 acre-feet were diverted in Canada and 2,210 acre-feet were diverted in the United States. No water was diverted from the other northern tributaries of Milk River.

The proper share as defined by your Order of the 4th of October, 1921, due each country from the St.Mary river was determined by making current meter measurements of the discharge from the head-waters of St.Mary river, computing the inflow to and the outflow from the Sherburne reservoir, the quantity diverted by the St.Mary canal and the quantity delivered to Canada at the international boundary. From these measurements and calculations the natural flow of St.Mary river was computed and the share to which each country was entitled determined on the following basis:-

(1) When the natural flow of St.Mary river was less than 666 cubic-feet per second, Canada was entitled to three quarters of that flow and the United States to one quarter.

(2) When the natural flow was greater than 666 cubic-feet per second, Canada was entitled to 500 cubic-feet per second plus one-half of the increase over 666 cubic-feet per second, and the United States was entitled to the remainder.

Water Supply.

The precipitation on the St. Mary and Milk river drainage basins during the winter 1927-28 was slightly above normal. On the

prairie the fall of snow was less than usual while in the mountains and on the St. Mary basin it was above normal. The annual international survey of snow conditions on the headwaters of Swiftcurrent creek, an area considered typical of the headwaters of St. Mary river, indicated a run-off from the area during May, June and July, slightly less than of 1927.

The recorded run-off of 91,100 acre-feet during these months was only 2% less than that predicted by the survey.

The inflow to Milk river during 1928 from its northern tributaries in Saskatchewan was only 2/3 of the average recorded open water flow. 45% of this flow occurred during March.

The flow from the minor tributaries of Milk river, upon which records were first obtained during 1927 was about ½ the flow of 1927.

The twenty-three international gauging stations previously used in the determination of the daily flow of the streams in the St. Mary and Milk river basins were maintained and operated under the joint supervision of the field engineers.

Canada maintained the same stations as in previous years on international streams and canals diverting therefrom in Canada and from the records obtained at these stations can be determined the use made of the international waters. Three additional stations were established to determine the diversion from the northern tributaries in the United States.

An appendix to this report gives the results of current meter measurements, the daily gauge heights and discharge

at all the gauging stations operated in the two drainage basins during 1928.

Description of Tables.

The tables following have been prepared to summarize the data on the division and use made of the waters in the St. Mary and Milk river basins.

Table No. I shows the method used to determine the natural flow of the St. Mary river during the irrigation season of 1928, the water available for use and used by the United States and the water available and diverted by Canada. In this table there are four pages for each month.

Page I (water stored or released from Sherburne reservoir) shows the daily inflow to and the outflow from Sherburne reservoir. The difference gives the quantity of water stored or released from storage. On this sheet the unrecorded inflow is determined by comparison with the recorded flows in Swiftcurrent and Canyon creeks and the use of the storage curve of Sherburne reservoir to give the gain or loss in storage. This estimate is put in the column headed "unrecorded inflow".

Page 2 (Determination of the natural flow of St. Mary river) shows the actual flow of St. Mary river at Kimball near the boundary, the quantity of water diverted, stored or released from storage by the United States and the computed natural flow of St. Mary river or that flow which would have crossed the international boundary had there been no interference. It has been established that two days are required for

stored water released from Sherburne reservoir to influence the flow at the international boundary, consequently a two day lag has been applied to stored or released water.

Page 3, (Water available for use and used by the United States) shows the water available for use by the United States under the ruling of the Order of October 4th, 1921, the water diverted and stored and the excess or deficit in this quantity over the quantity available.

Page 4 (Water available for use and used by Canada) shows the natural flow of St. Mary at Kimball near the international boundary, Canada's share by the ruling of the Commission, the actual discharge of St. Mary river at Kimball, which is the quantity available for use by Canada, the quantity used by Canada and the excess or deficit of the quantity received by Canada as compared with the share.

Table No. 2 is a statement showing the quantity in acre-feet taken in each month by each country and the quantity thereof applied to the land; the quantity diverted from the St. Mary river, that stored or held back by either country, the loss or waste from the canals, and the diversions from Milk river in the United States.

Table No. 3 gives a summarization of the available data on the diversions in Canada from the northern tributaries of Milk river and the quantity which crossed the boundary into the United States.

Table 4 gives the diversions from the northern tributaries of Milk River in the United States.

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
APRIL - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1							9
2							9
3							9
4							9
5							9
6							9
7							9
8							9
9							9
10							9
11							9
12							9
13							9
14							9
15							9
16							9
17							9
18							9
19							9
20							9
21							9
22							9
23							9
24							9
25							9
26							9
27							9
28	No record available	No record available	No record available	No record available	No record available	- - - No record available	9
29						100	-
30						120	-
Total Sec.ft.						220	252
Mean						7.3	8.4
Ac.ft.						434	500

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
APRIL - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	431	No water diverted during April	No water stored during April	431	9	422
2	431			431	9	422
3	405			405	9	396
4	405			405	9	396
5	431			431	9	422
6	405			405	9	396
7	431			431	9	422
8	405			405	9	396
9	396			396	9	387
10	400			400	9	391
11	364			364	9	355
12	346			346	9	337
13	360			360	9	351
14	405			405	9	396
15	419			419	9	410
16	468			468	9	459
17	483			483	9	474
18	488			488	9	479
19	494			494	9	485
20	494			494	9	485
21	505			505	9	496
22	529			529	9	520
23	578			578	9	569
24	680			680	9	671
25	745			745	9	736
26	854			854	9	845
27	993			993	9	984
28	1100			1100	9	1091
29	1080			1080	9	1071
30	1120			1120	9	1111
Total Sec.ft.	16645			16645	270	16375
Mean	555			555	9	546
Ac.ft.	33000			33000	536	32490

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
April - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage	Total Avail-	USED BY U.S.A. Divert-ed	Stored	Total Used	Ex-cess Of Share	Deficit Used
1	422	106	9	115	No water diverted during April	No water stored during April	No water used during April	No excess used during April	115
2	422	106	9	115					115
3	396	99	9	108					108
4	396	99	9	108					108
5	422	106	9	115					115
6	396	99	9	108					108
7	422	106	9	115					115
8	396	99	9	108					108
9	387	97	9	106					106
10	391	98	9	107					107
11	355	89	9	98					98
12	337	84	9	93					93
13	351	88	9	97					97
14	396	99	9	108					108
15	410	102	9	111					111
16	459	115	9	124					124
17	474	118	9	127					127
18	479	119	9	128					128
19	485	121	9	130					130
20	485	121	9	130					130
21	496	124	9	133					133
22	520	130	9	139					139
23	569	142	9	151					151
24	671	169	9	178					178
25	736	201	9	210					210
26	845	256	9	265					265
27	984	325	9	334					334
28	1091	379	9	388					388
29	1071	369	9	378					378
30	1111	389	9	398					398
Total Sec.ft.	16375	4555	270	4825					4825
Mean	546	152	9	161					161
Ac.ft.	32490	9044	536	9580					9580

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
APRIL - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share available	St.Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered
1	422	316	431	No water used during April	115
2	422	316	431		115
3	396	297	405		108
4	396	297	405		108
5	422	316	431		115
6	396	297	405		108
7	422	316	431		115
8	396	297	405		108
9	387	290	396		106
10	391	293	400		107
11	355	266	364		98
12	337	253	346		93
13	351	263	360		97
14	396	297	405		108
15	410	308	419		111
16	459	344	468		124
17	474	356	483		127
18	479	360	488		128
19	485	364	494		130
20	485	364	494		130
21	496	372	505		133
22	520	390	529		139
23	569	427	578		151
24	671	502	680		178
25	736	535	745		210
26	845	589	854		265
27	984	659	993		334
28	1091	712	1100		388
29	1071	702	1080		378
30	1111	722	1120		398
Total Sec.ft.	16375	11820	10545		4825
Mean	546	394	555		161
Ac.ft.	32490	23446	33000		9580

No deficit during April

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
MAY - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1	100					220	
2	105					300	
3	110					300	
4	113					300	
5	125					300	
6	229		279	508	208	300	
7	483		82	565	265	300	
8	758		64	822	472	350	
9	693		717	1410	1060	350	
10	630		1320	1950	1650	300	
11	623		717	1340	1520	-	180
12	662		288	950	1130	-	180
13	768		62	830	1010	-	180
14	700		118	818	998	-	180
15	623		191	814	994	-	180
16	676		363	1039	989	50	-
17	808		240	1048	998	50	-
18	867		231	1098	998	100	-
19	786		334	1120	1000	120	-
20	765		420	1185	998	187	-
21	863		382	1245	1000	245	-
22	1020		335	1355	1010	345	-
23	1110		324	1434	1020	414	-
24	997		315	1312	1030	282	-
25	916		255	1171	1100	71	-
26	974		436	1410	1170	240	-
27	1040	145	130	1315	1230	85	-
28	848	124	207	1079	1250	-	171
29	740	109	93	942	1280	-	338
30	704	86	87	877	1160	-	283
31	504	59	61	624	855	-	231
Total Sec.ft.	20340	523	8052	28261	26395	5209	1927
Mean	656	105	310	1087 (6-31)	1020	168	62
Ac.ft.	40300	996	15968	56836	52600	10330	3812

No records available

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
MAY - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	1230	No water diverted during May	100	1330	-	1330
2	1240		120	1360	-	1360
3	1220		220	1440	-	1440
4	1230		300	1530	-	1530
5	1250		300	1550	-	1550
6	1330		300	1630	-	1630
7	1470		300	1770	-	1770
8	1860		300	2160	-	2160
9	2310		300	2610	-	2610
10	3000		350	3350	-	3350
11	3570		350	3920	-	3920
12	3760		300	4060	-	4060
13	3920		-	3920	180	3740
14	4050		-	4050	180	3870
15	4050		-	4050	180	3870
16	4070		-	4070	180	3890
17	4120		-	4120	180	3940
18	4220		50	4270	-	4270
19	4260		50	4310	-	4310
20	4330		100	4430	-	4430
21	4450		120	4570	-	4570
22	4640		187	4827	-	4827
23	4810		245	5055	-	5055
24	5090		345	5435	-	5435
25	5110		414	5524	-	5524
26	5110		282	5392	-	5392
27	5250		71	5321	-	5321
28	5250		240	5490	-	5490
29	5110		85	5195	-	5195
30	4850		-	4850	171	4679
31	4370		-	4370	338	4032
Total Sec.ft.	110530		5429	115959	1409	114550
Mean	3566		175	3741	45.5	3695
Ac.ft.	219300		10760	230000	2800	227200

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
May - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share Used	Deficit
1	1330	498	-	498	No water diverted during May	100	100	No excess of share used during May	398
2	1360	513	-	513		120	120		393
3	1440	553	-	553		220	220		333
4	1530	598	-	598		300	300		298
5	1550	608	-	608		300	300		308
6	1630	648	-	648		300	300		348
7	1770	718	-	718		300	300		418
8	2160	913	-	913		300	300		613
9	2610	1138	-	1138		300	300		838
10	3350	1508	-	1508		350	350		1158
11	3920	1793	-	1793		350	350		1443
12	4060	1863	-	1863		300	300		1563
13	3740	1703	180	1883		-	-		1883
14	3870	1768	180	1948		-	-		1948
15	3870	1768	180	1948		-	-		1948
16	3890	1778	180	1958		-	-		1958
17	3940	1803	180	1983		-	-		1983
18	4270	1968	-	1968		50	50		1918
19	4310	1988	-	1988		50	50		1938
20	4430	2048	-	2048		100	100		1948
21	4570	2118	-	2118		120	120		1998
22	4827	2247	-	2247		187	187		2060
23	5055	2361	-	2361		245	245		2116
24	5435	2551	-	2551		345	345		2206
25	5524	2595	-	2595		414	414		2181
26	5392	2529	-	2529		282	282		2247
27	5321	2494	-	2494		71	71		2423
28	5490	2578	-	2578		240	240		2338
29	5195	2431	-	2431		85	85		2246
30	4679	2173	171	2344		-	-		2344
31	4032	1849	338	2187		-	-		2187
Total Sec.ft.	114550	52101	1409	53510		5429	5429		48081
Mean	3695	1681	45.5	1726		175	175		1551
Ac.ft.	227200	103365	2797	106162		10760	10760		95400

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
May - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share Available	St. Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered
1	1330	832	1230	-	398
2	1360	847	1240	-	393
3	1440	887	1220	-	333
4	1530	932	1230	-	298
5	1550	942	1250	-	308
6	1630	982	1330	-	348
7	1770	1052	1470	-	418
8	2160	1247	1860	-	613
9	2610	1472	2310	-	838
10	3350	1842	3000	51	1158
11	3920	2127	3570	149	1443
12	4060	2197	3760	194	1563
13	3740	2037	3920	295	1883
14	3870	2102	4050	292	1948
15	3870	2102	4050	357	1948
16	3890	2112	4070	361	1958
17	3940	2137	4120	386	1983
18	4270	2302	4220	386	1918
19	4310	2322	4260	384	1938
20	4430	2382	4330	416	1948
21	4570	2452	4450	487	1998
22	4827	2580	4640	529	2060
23	5055	2694	4810	537	2116
24	5435	2884	5090	584	2206
25	5524	2929	5110	659	2181
26	5392	2863	5110	753	2247
27	5321	2827	5250	784	2423
28	5490	2912	5250	784	2338
29	5195	2764	5110	779	2346
30	4679	2506	4850	784	2344
31	4032	2183	4370	790	2187
Total Sec.ft.	114550	62449	110530	10741	48081
Mean	3695	2014	3566	(10-30) 488	1551
Ac.ft.	227200	~~103364~~ 123,836	219300	21300	95400

No deficit during May

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
JUNE - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1	365	49	186	600	736	-	136
2	319	40	160	519	674	-	155
3	306	35	153	494	663	-	169
4	356	45	180	581	582	-	1
5	417	50	207	674	454	220	-
6	453	60	179	692	407	285	-
7	459	70	132	661	410	251	-
8	391	69	92	552	412	140	-
9	344	45	58	447	415	32	-
10	322	48	37	407	415	-	8
11	309	48	36	393	415	-	22
12	340	54	39	433	415	18	-
13	417	65	48	530	415	115	-
14	504	80	58	642	417	225	-
15	532	78	61	671	351	320	-
16	449	60	76	585	301	284	-
17	365	50	83	498	303	195	-
18	511	60	142	713	307	406	-
19	490	57	164	711	305	406	-
20	420	56	143	619	305	314	-
21	391	64	136	591	307	284	-
22	528	127	232	887	309	578	-
23	644	124	249	1017	313	704	-
24	564	111	202	877	317	560	-
25	623	120	219	962	319	643	-
26	711	115	205	1031	266	765	-
27	662	111	155	928	234	694	-
28	650	107	139	896	236	660	-
29	661	116	131	908	239	669	-
30	658	109	130	897	394	503	-
Total Sec.ft.	14161	2223	4032	20416	11636	9271	491
Mean	472	74	135	681	388	309	16
Ac.ft.	28100	4400	8000	40500	23100	18387	952

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
JUNE - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec.ft.	Stored Water Released	Natural Flow St. Mary River
1	3820	-	-	3820	283	3537
2	3400	-	-	3400	231	3169
3	3040	-	-	3040	136	2904
4	2680	48	-	2728	155	2573
5	2240	276	-	2516	169	2347
6	2020	369	-	2389	1	2388
7	1920	431	220	2571	-	2571
8	1920	438	285	2643	-	2643
9	1880	437	251	2568	-	2568
10	1700	448	140	2288	-	2288
11	1540	484	32	2056	-	2056
12	1420	505	-	1925	8	1917
13	1390	520	-	1910	22	1888
14	1400	534	18	1952	-	1952
15	1420	541	115	2076	-	2076
16	1430	547	225	2202	-	2202
17	1460	552	320	2332	-	2332
18	2330	549	284	3163	-	3163
19	2080	530	195	2805	-	2805
20	2030	526	406	2962	-	2962
21	1890	518	406	2814	-	2814
22	1990	516	314	2820	-	2820
23	2400	524	284	3208	-	3208
24	2460	528	578	3566	-	3566
25	2890	535	704	4129	-	4129
26	3050	539	560	4149	-	4149
27	2980	530	643	4153	-	4153
28	3020	520	765	4305	-	4305
29	3040	516	694	4250	-	4250
30	3290	526	660	4476	-	4476
Total Sec.ft.	68130	12987	8099	89216	1005	88211
Mean	2271	(4-30) 481	270	2974	33.5	2940
Ac.ft.	135100	25800	16070	177970	1990	174980

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
June - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share Used	Deficit
1	3537	1602	283	1885	-	-	-		1885
2	3169	1418	231	1649	-	-	-		1649
3	2904	1285	136	1421	-	-	-		1421
4	2573	1120	155	1275	48	-	48		1227
5	2347	1007	169	1176	276	-	276		900
6	2388	1027	1	1028	369	-	369		659
7	2571	1119	-	1119	431	220	651		468
8	2643	1155	-	1155	438	285	723		432
9	2568	1117	-	1117	437	251	688		429
10	2288	977	-	977	448	140	588		389
11	2056	861	-	861	484	32	516		345
12	1917	792	8	800	505	-	505		295
13	1888	777	22	799	520	-	520		279
14	1952	809	-	809	534	18	552		257
15	2076	871	-	871	541	115	656		215
16	2202	934	-	934	547	225	772		162
17	2332	999	-	999	552	320	872		127
18	3163	1415	-	1415	549	284	833		582
19	2805	1236	-	1236	530	195	725		511
20	2962	1314	-	1314	526	406	932		382
21	2814	1240	-	1240	518	406	924		316
22	2820	1243	-	1243	516	314	830		413
23	3208	1437	-	1437	524	284	808		629
24	3566	1616	-	1616	528	578	1106		510
25	4129	1898	-	1898	535	704	1239		659
26	4149	1908	-	1908	539	560	1099		809
27	4153	1910	-	1910	530	643	1173		737
28	4305	1986	-	1986	520	765	1285		701
29	4250	1958	-	1958	516	694	1210		748
30	4476	2071	-	2071	526	660	1186		885
Total Sec.ft.	88211	39102	1005	40107	12987	8099	21086	-	19021
Mean	2940	1303	33.5	1337(4-30)	481	270	703		634
Ac.ft.	174980	77558	1990	79548	25800	16070	41870		37678

No excess of share used during June

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
JUNE - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share Available	St. Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered	
1	3537	1935	3820	806	1885	No deficit of share delivered during June
2	3169	1751	3400	820	1649	
3	2904	1619	3040	851	1421	
4	2573	1453	2680	894	1227	
5	2347	1340	2240	885	900	
6	2388	1361	2020	891	659	
7	2571	1452	1920	814	468	
8	2643	1488	1920	781	432	
9	2568	1451	1880	520	429	
10	2288	1311	1700	529	389	
11	2056	1195	1540	552	345	
12	1917	1125	1420	560	295	
13	1888	1111	1390	571	279	
14	1952	1143	1400	571	257	
15	2076	1205	1420	576	215	
16	2202	1268	1430	554	162	
17	2332	1333	1460	426	127	
18	3163	1748	2330	248	582	
19	2805	1569	2080	181	511	
20	2962	1648	2030	181	382	
21	2814	1574	1890	197	316	
22	2820	1577	1990	244	413	
23	3208	1771	2400	197	629	
24	3566	1950	2460	197	510	
25	4129	2231	2890	208	659	
26	4149	2241	3050	204	809	
27	4153	2243	2980	223	737	
28	4305	2319	3020	238	701	
29	4250	2292	3040	284	748	
30	4476	2405	3290	149	885	
Total Sec.ft.	88211	49109	68130	14352	19021	
Mean	2940	1637	2271	478	634	
Ac.ft.	174980	97422	135100	28400	37678	

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
JULY - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1	752	105	128	985	925	60	-
2	654	95	110	859	1240	-	381
3	544	85	95	724	946	-	222
4	503	81	86	670	732	-	62
5	462	76	75	613	732	-	119
6	429	74	70	573	706	-	133
7	419	72	59	550	666	-	116
8	412	70	60	542	579	-	37
9	406	68	55	529	579	-	50
10	383	67	50	500	576	-	76
11	351	64	42	457	496	-	39
12	342	65	40	447	367	80	-
13	358	71	42	471	333	138	-
14	364	71	43	478	379	99	-
15	370	65	43	478	431	47	-
16	354	72	42	468	451	17	-
17	326	72	39	437	451	-	14
18	303	89	38	430	451	-	21
19	303	83	37	423	451	-	28
20	275	65	30	370	448	-	78
21	266	59	32	357	445	-	88
22	272	56	32	360	445	-	85
23	288	56	34	378	389	-	11
24	300	55	35	390	351	39	-
25	306	55	36	397	353	44	-
26	297	53	35	385	353	32	-
27	288	51	34	373	355	18	-
28	297	54	35	386	355	31	-
29	288	51	34	373	353	20	-
30	275	47	32	354	389	-	35
31	244	42	29	315	410	-	95
Total Sec.ft.	11431	2089	1552	15072	16137	625	1690
Mean	369	67	50	486	521	20.2	55
Ac.ft.	22700	4120	3074	29894	32000	1242	3383

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
JULY - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	3990	522	669	5181	-	5181
2	4090	513	503	5106	-	5106
3	3900	505	60	4465	-	4465
4	3480	501	-	3981	381	3600
5	3200	469	-	3669	222	3447
6	3460	59	-	3519	62	3457
7	3310	23	-	3333	119	3214
8	2820	255	-	3075	133	2942
9	2640	271	-	2911	110	2801
10	2480	284	-	2764	37	2727
11	2360	284	-	2644	50	2594
12	2180	282	-	2462	76	2386
13	2050	281	-	2331	39	2292
14	1970	277	80	2327	-	2327
15	1920	276	138	2334	-	2334
16	2020	281	99	2400	-	2400
17	2050	281	47	2378	-	2378
18	2130	282	17	2429	-	2429
19	2070	281	-	2351	14	2337
20	1950	282	-	2232	21	2211
21	1800	299	-	2099	28	2071
22	1710	297	-	2007	74	1933
23	1630	299	-	1929	88	1841
24	1520	318	-	1838	85	1753
25	1440	323	-	1763	11	1752
26	1400	336	39	1775	-	1775
27	1360	340	44	1744	-	1744
28	1420	343	32	1795	-	1795
29	1380	338	18	1736	-	1736
30	1340	336	31	1707	-	1707
31	1320	352	20	1692	-	1692
Total Sec.ft.	70390	9790	1797	81977	1550	80427
Mean	2271	316	58.0	2644	50	2594
Ac.ft.	139600	19400	3570	162570	3070	159500

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
July - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share Used	Deficit
1	5181	2424	-	2424	522	669	1191		1233
2	5106	2386	-	2386	513	503	1016		1370
3	4465	2066	-	2066	505	60	565		1501
4	3600	1633	381	2014	501	-	501		1513
5	3447	1557	222	1779	469	-	469		1310
6	3457	1562	62	1624	59	-	59		1565
7	3214	1440	119	1559	23	-	23		1536
8	2942	1304	133	1437	255	-	255		1182
9	2801	1234	110	1344	271	-	271		1073
10	2727	1197	37	1234	284	-	284		950
11	2594	1130	50	1180	284	-	284		896
12	2386	1026	76	1102	282	-	282		820
13	2292	979	39	1018	281	-	281		737
14	2327	997	-	997	277	80	357		640
15	2334	1000	-	1000	276	138	414		586
16	2400	1033	-	1033	281	99	380		653
17	2378	1022	-	1022	281	47	328		694
18	2429	1048	-	1048	282	17	299		749
19	2337	1002	14	1016	281	-	281		735
20	2211	939	21	960	282	-	282		678
21	2071	869	28	897	299	-	299		598
22	1933	800	74	874	297	-	297		577
23	1841	754	88	842	299	-	299		543
24	1753	710	85	795	318	-	318		477
25	1752	709	11	720	323	-	323		397
26	1775	721	-	721	336	39	375		346
27	1744	705	-	705	340	44	384		321
28	1795	731	-	731	343	32	375		356
29	1736	701	-	701	338	18	356		345
30	1707	687	-	687	336	31	367		320
31	1692	679	-	679	352	20	372		307
Total Sec.ft.	80427	35045	1550	36595	9790	1797	11587		25009
Mean	2594	1130	50	1180	316	58	374		806
Ac.ft.	159500	69480	3070	72550	19400	3564	22964		49586

No excess of share used during July

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
JULY - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share Available	St. Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered
1	5181	2757	3990	-	1233
2	5106	2720	4090	-	1370
3	4465	2399	3900	-	1501
4	3600	1967	3480	-	1513
5	3447	1890	3200	-	1310
6	3457	1895	3460	-	1565
7	3214	1774	3310	-	1536
8	2942	1638	2820	-	1182
9	2801	1567	2640	42	1073
10	2727	1530	2480	104	950
11	2594	1464	2360	106	896
12	2386	1360	2180	93	820
13	2292	1313	2050	125	737
14	2327	1330	1970	123	640
15	2334	1334	1920	123	586
16	2400	1367	2020	112	653
17	2378	1356	2050	129	694
18	2429	1381	2130	236	749
19	2337	1335	2070	222	735
20	2211	1272	1950	154	678
21	2071	1202	1800	129	598
22	1933	1133	1710	137	577
23	1841	1087	1630	194	543
24	1753	1043	1520	276	477
25	1752	1043	1440	298	397
26	1775	1054	1400	298	346
27	1744	1039	1360	312	321
28	1795	1064	1420	304	356
29	1736	1035	1380	268	345
30	1707	1020	1340	302	320
31	1692	1013	1320	302	307
Total c.ft.	80427	45382	70390	4389	25008
Mean	2594	1464	2271	142	806
Ac.ft.	159500	90020	139600	8730	49580

No deficit of share delivered during July

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
AUGUST - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1	214	39	35	288	399	No water stored during August	111
2	188	34	31	253	399		146
3	183	33	30	246	399		153
4	177	32	29	238	399		161
5	172	31	28	231	327		96
6	167	30	30	227	315		88
7	161	30	29	220	338		118
8	156	29	28	213	348		135
9	156	29	28	213	358		145
10	153	28	27	208	394		186
11	156	28	28	212	394		182
12	146	26	27	199	394		195
13	136	23	24	183	394		211
14	119	20	21	160	394		234
15	101	18	18	137	376		239
16	87	16	15	118	364		246
17	80	15	14	109	362		253
18	81	15	14	110	382		272
19	83	15	14	112	389		277
20	83	14	14	111	389		278
21	83	13	14	110	386		276
22	83	13	14	110	389		279
23	81	13	13	107	394		287
24	83	14	14	111	391		280
25	90	17	16	123	389		266
26	92	19	17	128	389		261
27	90	23	17	130	389		259
28	80	22	16	118	386		268
29	74	23	14	111	384		273
30	95	24	18	137	284		147
31	105	23	19	147	189		42
Total Sec.ft.	3755	709	656	5120	11484		6364
Mean	121	23	21	165	370		205
Ac.ft.	7440	1414	1291	10145	22750		12605

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
AUGUST - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	1250	365	-	1615	35	1580
2	1210	365		1575	95	1480
3	1150	378		1528	111	1417
4	1080	385		1465	146	1319
5	1010	397		1407	153	1254
6	927	401		1328	161	1167
7	847	405		1252	96	1156
8	788	410		1198	88	1110
9	752	412		1164	118	1046
10	745	410		1155	135	1020
11	759	410	No water stored during August	1169	145	1024
12	730	410		1140	186	954
13	694	410		1104	182	922
14	687	410		1097	195	902
15	666	408		1074	211	863
16	624	408		1032	234	798
17	578	408		986	239	747
18	534	408		942	246	696
19	511	408		919	253	666
20	488	408		896	272	624
21	473	408		881	277	604
22	463	406		869	278	591
23	463	403		866	276	590
24	483	403		886	279	607
25	617	410		1027	287	740
26	666	414		1080	280	800
27	716	416		1132	266	866
28	666	414		1080	261	819
29	578	414		992	259	733
30	597	365		962	268	694
31	716	321		1037	273	764
Total Sec.ft.	22468	12390		34858	6305	28553
Mean	725	400		1124	203	921
Ac.ft.	44600	24600		69100	12500	56600

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
August - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share	Deficit Used
1	1580	623	35	658	365	-	365		293
2	1480	573	95	668	365	-	365		303
3	1417	542	111	653	378		378		275
4	1319	493	146	639	385		385		254
5	1254	460	153	613	397		397		216
6	1167	417	161	578	401		401		177
7	1156	411	96	507	405		405		102
8	1110	388	88	476	410		410		66
9	1046	356	118	474	412		412		62
10	1020	343	135	478	410		410		68
11	1024	345	145	490	410		410		80
12	954	310	186	496	410		410		86
13	922	294	182	476	410		410		66
14	902	284	195	479	410		410		69
15	863	265	211	476	408		408		68
16	798	232	234	466	408		408		58
17	747	207	239	446	408		408		38
18	696	181	246	427	408		408		19
19	666	166	253	419	408		408		11
20	624	156	272	428	408		408		20
21	604	151	277	428	408		408		20
22	591	148	278	426	406		406		20
23	590	147	276	423	403		403		20
24	607	152	279	431	403		403		28
25	740	203	287	490	410		410		80
26	800	233	280	513	414		414		99
27	866	266	266	532	416		416		116
28	819	243	261	504	414		414		90
29	733	200	259	459	414		414		45
30	694	180	268	448	365		365		83
31	764	215	273	488	321	-	321		167
Total Sec.ft.	28553	9184	6305	15489	12390		12390		3099
Mean	921	296	203	500	400		400		100
Ac.ft.	56600	18262	12500	30762	24600		24600		6162

No water stored during August

No excess of share used during August

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
AUGUST - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share Available	St. Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered
1	1580	957	1250	302	293
2	1480	907	1210	314	303
3	1417	875	1150	307	275
4	1319	826	1080	304	254
5	1254	794	1010	282	216
6	1167	750	927	74	177
7	1156	745	847	58	102
8	1110	722	788	164	66
9	1046	690	752	285	62
10	1020	677	745	339	68
11	1024	679	759	390	80
12	954	644	730	370	86
13	922	628	694	367	66
14	902	618	687	372	69
15	863	598	666	380	68
16	798	566	624	424	58
17	747	540	578	418	38
18	696	515	534	428	19
19	666	500	511	422	11
20	624	468	488	428	20
21	604	453	473	420	20
22	591	443	463	414	20
23	590	443	463	424	20
24	607	455	483	429	28
25	740	537	617	268	80
26	800	567	666	109	99
27	866	600	716	210	116
28	819	576	666	178	90
29	733	533	578	279	45
30	694	514	597	365	83
31	764	549	716	372	167
Total Sec.ft.	28553	19369	22468	9896	3099
Mean	921	624 5	725	319	100
Ac.ft.	56600	38338	44600	19600	6162

No deficit of share delivered during August

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
SEPTEMBER - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1	110	23	18	151	141	10	-
2	110	23	17	150	147	3	-
3	110	23	15	148	147	1	-
4	110	22	14	146	147	-	1
5	110	21	13	144	124	20	-
6	101	19	10	130	96	34	-
7	94	18	9	121	61	60	-
8	85	16	8	109	18	91	-
9	74	14	7	95	6	89	-
10	64	13	6	83	6	77	-
11	60	12	4	76	5	71	-
12	58	11	4	73	55	18	-
13	58	11	4	73	112	-	39
14	55	13	4	72	108	-	36
15	69	24	5	98	107	-	9
16	71	25	5	101	106	-	5
17	69	21	5	95	106	-	11
18	64	18	4	86	106	-	20
19	61	17	4	82	107	-	25
20	60	15	4	79	107	-	28
21	53	13	3	69	107	-	38
22	52	13	3	68	107	-	39
23	52	12	3	67	107	-	40
24	50	11	3	64	107	-	43
25	50	11	3	64	107	-	43
26	47	10	3	60	107	-	47
27	46	9	2	57	106	-	49
28	43	9	3	55	106	-	51
29	44	8	4	56	106	-	50
30	36	8	3	47	107	-	60
Total Sec.ft.	2066	463	190	2719	2879	474	634
Mean	69	15.4	6.3	91	96	15.8	21.1
Ac.ft.	4105	916	375	5396	5712	940	1256

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
SEPTEMBER - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	631	226	-	857	147	710
2	565	226	-	791	42	749
3	523	200	10	733	-	733
4	478	197	3	678	-	678
5	468	192	1	661	-	661
6	511	136	-	647	1	646
7	610	18	20	648	-	648
8	591	7	34	632	-	632
9	546	6	60	612	-	612
10	511	6	91	608	-	608
11	478	6	89	573	-	573
12	448	5	77	530	-	530
13	458	6	71	535	-	535
14	463	4	18	485	-	485
15	488	3	-	491	39	452
16	505	3	-	508	36	472
17	494	2	-	496	9	487
18	488	2	-	490	5	485
19	478	-	-	478	11	467
20	463	-	-	463	20	443
21	458	-	-	458	25	433
22	453	-	-	453	28	425
23	443	-	-	443	38	405
24	429	-	-	429	39	390
25	419	-	-	419	40	379
26	410	-	-	410	43	367
27	405	-	-	405	43	362
28	405	-	-	405	47	358
29	386	-	-	386	49	337
30	382	-	-	382	51	331
Total Sec.ft.	14387	1245	474	16106	713	15393
Mean	480	(1-18) 75	15.8	537	23.8	513
Ac.ft.	28600	2470	940	32010	1420	30590

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
September - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share	Deficit Used
1	710	188	147	335	226	-	226	-	109
2	749	208	42	250	226	-	226	-	24
3	733	200	-	200	200	10	210	10	-
4	678	172	-	172	197	3	200	28	-
5	661	165	-	165	192	1	193	28	-
6	646	161	1	162	136	-	136	-	26
7	648	162	-	162	18	20	38	-	124
8	632	158	-	158	7	34	41	-	117
9	612	153	-	153	6	60	66	-	87
10	608	152	-	152	6	91	97	-	55
11	573	143	-	143	6	89	95	-	48
12	530	132	-	132	5	77	82	-	50
13	535	134	-	134	6	71	77	-	57
14	485	121	-	121	4	18	22	-	99
15	452	113	39	152	3	-	3	-	149
16	472	118	36	154	3	-	3	-	151
17	487	122	9	131	2	-	2	-	129
18	485	121	5	126	2	-	2	-	124
19	467	117	11	128	-	-	-	-	128
20	443	111	20	131	-	-	-	-	131
21	433	108	25	133	-	-	-	-	133
22	425	106	28	134	-	-	-	-	134
23	405	101	38	139	-	-	-	-	139
24	390	98	39	137	-	-	-	-	137
25	379	95	40	135	-	-	-	-	135
26	367	92	43	135	-	-	-	-	135
27	362	91	43	134	-	-	-	-	134
28	358	90	47	137	-	-	-	-	137
29	337	84	49	133	-	-	-	-	133
30	331	83	51	134	-	-	-	-	134
Total Sec.ft.	15393	3899	713	4612	1245	474	1719	66	2959
Mean	513	130	23.8	154	75	15.8	57	2.2	99
Ac.ft.	30590	7736	1420	9156	2470	940	3410	131	5877

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
SEPTEMBER - 1928

Day	Natural flow St. Mary R. at Kimball	Canada' Share Available	St.Mary R. at Kimball delivered	Diverted by Canada Used	Excess - Deficit of share delivered	
1	710	522	631	408	109	-
2	749	541	565	418	24	-
3	733	533	523	462	-	10
4	678	506	478	428	-	28
5	661	496	468	416	-	28
6	646	485	511	448	26	-
7	648	486	610	529	124	-
8	632	474	591	512	117	-
9	612	459	546	479	87	-
10	608	456	511	448	55	-
11	573	430	478	428	48	-
12	530	398	448	403	50	-
13	535	401	458	408	57	-
14	485	364	463	414	99	-
15	452	339	488	439	149	-
16	472	354	505	460	151	-
17	487	365	494	452	129	-
18	485	364	488	446	124	-
19	467	350	478	439	128	-
20	443	332	463	428	131	-
21	433	325	458	424	133	-
22	425	319	453	418	134	-
23	405	304	443	408	139	-
24	390	292	429	401	137	-
25	379	284	419	390	135	-
26	367	275	410	380	135	-
27	362	271	405	374	134	-
28	358	268	405	372	137	-
29	337	253	386	363	133	-
30	331	248	382	352	134	-
Total Sec.ft.	15393	11494	14387	12747	2959	66
Mean	513	383	480	425	99	2.2
Ac.ft.	30590	22754	28600	25300	5877	131

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
OCTOBER - 1928

Day	INFLOW TO SHERBURNE RESERVOIR: Recorded Inflow: Swift-current Creek	Canyon Creek	Un-recorded Inflow Estimated	Total Inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec.ft.	Released from Reservoir Sec.ft.
1		9		62	107	-	45
2		15		90	107	-	17
3	105	14	7	110	107	3	-
4		12		131	131	10	-
5		13		233	187	46	-
6		16		376	182	194	-
7		50		550	166	384	-
8	579	127	46	777	170	607	-
9		155		965	187	778	-
10		155		960	260	700	-
11		85		690	463	227	-
12		53		463	640	-	177
13	286	41	29	271	721	-	450
14		34		214	1010	-	796
15		30		180	1230	-	1050
16		29		173	1020	-	847
17		51		273	896	-	623
18	181	49	10	276	635	-	359
19		41		249	632	-	383
20		34		190	624	-	434
21		27		106	407	-	301
22		28		97	277	-	180
23	64	23	5	99	217	-	118 129
24		21		83	147	-	64
25		20	our original work shows 88 ft.	79	128	-	49
26		19		76	128	-	52
27		18		82	130	-	48
28	48	16	4	67	128	-	61
29		15		65	128	-	63
30		15		62	128	-	66
31		14		60	128	-	68
Total Sec.ft.	6363	1229	507	8109 ?	11421	2949	6251 ?
Mean	205	39.7	16.4	261 ?	368	95	202 ?
Ac.ft.	12600	2441	1008	16049 ?	22600	5841	12420 ?

DETERMINATION OF NATURAL FLOW ST. MARY RIVER
OCTOBER - 1928

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec.ft.	Stored Water Released	Natural Flow St.Mary River
1	378	No water diverted during October	-	378	50	328
2	391		-	391	60	331
3	382		-	382	45	337
4	378		-	378	17	361
5	400		3	403	-	403
6	405		10	415	-	415
7	443		46	489	-	489
8	438		194	632	-	632
9	540		384	924	-	924
10	759		607	1366	-	1366
11	1020		778	1798	-	1798
12	1230		700	1930	-	1930
13	1390		227	1617	-	1617
14	1490		-	1490	177	1313
15	1770		-	1770	450	1320
16	1860		-	1860	796	1064
17	1830		-	1830	1050	780
18	1700		-	1700	847	853
19	1530		-	1530	623	907
20	1440		-	1440	359	1081
21	1380		-	1380	383	997
22	1270		-	1270	434	836
23	1150		-	1150	301	849
24	1040		-	1040	180	860
25	942		-	942	99 129	843 813
26	862		-	862	64 Pl. 157	798
27	796		-	796	49 see last page	747
28	759		-	759	52	707
29	723		-	723	48	675
30	687		-	687	61	626
31	645		-	645	63	582
Total Sec.ft.	30028		2949	32977	6208	26769 39
Mean	969		95	1064	200	864 3
Ac.ft.	59600		5841	65441	12297	53144

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY UNITED STATES
October - 1928

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released from Storage	Total Available	USED BY U.S.A. Diverted	Stored	Total Used	Excess Of Share	Deficit Used
1	328	82	50	132	-	-	-	-	132
2	331	83	60	143		-	-	-	143
3	337	84	45	129		-	-	-	129
4	361	90	17	107		-	-	-	107
5	403	101	-	101		3	3	-	98
6	415	104	-	104		10	10	-	94
7	489	122	-	122		46	46	-	76
8	632	158	-	158		194	194	36	-
9	924	295	-	295		384	384	89	-
10	1366	516	-	516		607	607	91	-
11	1798	732	-	732		778	778	46	-
12	1930	798	-	798		700	700	-	98
13	1617	642	-	642		227	227	-	415
14	1313	490	177	667		-	-		667
15	1320	493	450	943					943
16	1064	365	796	1161					1161
17	780	223	1050	1273					1273
18	853	260	847	1107					1107
19	907	287	623	910					910
20	1081	374	359	733					733
21	997	332	383	715					715
22	836	251	434	685					685
23	849	258	301	559					559
24	860	263	180	443					443
25	813 ~~843~~	~~255~~ 240	99	354					354
26	798	232	64	296					296
27	747	207	49	256					256
28	707	187	52	239					239
29	675	171	48	219					219
30	626	156	61	217					217
31	582	145	63	208					208
Total Sec.ft.	26769	8741 8756	6208	14964		2949	2949	262	12277
Mean	864	282	200	482		95	95	8.4	396
Ac.ft.	53144	17340	12297	29637		5841	5841	553	24349

No water diverted during October

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
OCTOBER - 1928

Day	Natural flow St. Mary R. at Kimball	Canada's Share Available	St. Mary R. at Kimball delivered	Diverted by Canada Used	Excess of share delivered	Deficit
1	328	246	378	345	132	-
2	331	248	391	348	143	-
3	337	253	382	347	129	-
4	361	271	378	255	107	-
5	403	302	400	95	98	-
6	415	311	405	44	94	-
7	489	367	443	-	76	-
8	632	474	438		-	36
9	924	629	540		-	89
10	1366	850	759		-	91
11	1798	1066	1020		-	46
12	1930	1132	1230		98	-
13	1617	975	1390		415	-
14	1313	823	1490		667	-
15	1320	827	1770		943	-
16	1064	699	1860		1161	-
17	780	557	1830		1273	-
18	853	593	1700		1107	-
19	907	620	1530		910	-
20	1081	707	1440		733	-
21	997	665	1380		715	-
22	836	585	1270		685	-
23	849	591	1150		559	-
24	860	597	1040		443	-
25	813 ~~843~~	~~588~~ 573	942		354	-
26	798	566	862		296	-
27	747	540	796		256	-
28	707	520	759		239	-
29	675	504	723		219	-
30	626	470	687		217	-
31	582	437	645	-	208	-
Total Sec.ft.	26769	17998 ~~18013~~	30028	1434	12277	262
Mean	864	582	969	(1-6) 239	396	8.4
Ac.ft.	53144	35804	59600	2840	24349	553

Division of St. Mary River

Canada

Table 2

Water Available in Acre-feet

1928

Month	St. Mary R. at Kimball	Rolph Cr.	Pothole Cr.	Combined Flow
April	33,000		3,270	36,270
May	220,000	129	824	220,953
June	135,000	1,040	3,090	139,130
July	140,000	1,480	6,400	147,880
August	44,600	787	1,030	46,417
September	28,600	422	547	29,569
October	59,600	277	824	60,701
Total	660,800	4,135 a	15,985 b	680,920 c

Disposition

Month	Diverted A.R.& I.Co.	Gain or Loss	Wasted A.R.& I.Co.	Applied to Land	St. Mary R Lethbridge
April					47,700
May	21,300	- 1,130	2,345	17,470	213,000
June	28,400	+ 267	12,033	21,145	142,000
July	8,730	+ 3,094	15,350	7,178	181,000
August	19,600	- 262	3,480	16,092	36,500
September	25,300	- 213	2,203	23,095	10,100
October	2,840	+ 509	2,798	2,096	
Total	106,000 d	+ 2,265 e	38.209 f	87,066 g	

a - Included seepage losses from U.S. St.Mary Canal.
b - Natural flow only.
c - Computed.
d - Diverted by A.R. & I. Co. at Kimball.
e - Gain over loss between Kimball & Spring Coulee.
f - Wasted in Pinepound & Pothole creeks.
g - Flow in Canal at Magrath plus laterals.
x - Below all points of diversion.

Note - Inflow from Pothole Creek between Spring Coulee and Magrath is 16,000 acre-feet.

Division of St.Mary River

United States

Water Available in Acre-feet

1928

Month	St.Mary River				Diverted.	Unused	Total flow Milk River Eastern Crossing.
	U. S. Share.	Sherburne Res. Stored.	Sherburne Res. Released.	Total available for diversion.			
April	9,044		536	9,580		9,580	61,300
May	103,365	7,963		95,402		95,402	143,000
June	77,558	14,080		63,478	25,800	37,678	95,200
July	69,480	494		68,986	19,400	49,586	42,700
Aug.	18,262		12,500	30,762	24,600	6,162	54,500
Sept.	7,736		480	8,216	2,470	5,746	15,700
Oct.	17,340	5,841	12,297	23,796		23,796	8,480
Total	302,285	28,378	25,813	300,220	72,270	227,950	420,880

Diversions from Milk River in the

United States

(Quantities in acre-feet)

1928

Month	Ft.Belknap Canal	Paradise Canal	Harlem Canal	Agency Canal	Dodson N.Canal	Dodson S.Canal	Vandalia Canal	Total
April						2,400		2,400
May	3,640	2,220	1,890	2,500	1,960	6,700	3,500	22,410
June	6,840	2,106	1,464	1,500	1,520	4,430	3,120	20,980
July	4,630	1,775	1,255	1,500	486	3,590	1,430	14,666
Aug.	7,010	3,390	1,860	1,800	1,530	13,400	3,860	32,850
Sept.	1,200	720	460	250	478	13,100	1,530	17,738
Oct.					500	2,960	2,350	5,810
Total	23,320	10,211	6,929	7,550	6,474	46,580	15,790	116,854

Note: Records furnished by the Bureau of Reclamation.

Table 3

Disposition of the Waters of the Northern Tributaries

of MILK RIVER in Canada

1928

Quantities in Acre-feet.

Irrigator	April	May	June	July	Aug.	Sept.	Oct.	Total
			Lodge Creek					
Mitchell, W.								45
Mitchell Bros.								40
Clark								20
English								140
Total recorded as diverted in Canada								245
Flow at the Boundary	14,200	1,380	369	590	123	1	-	16,663
			Battle Creek					
Spangler								24
Lindner, Bros.								15
Wilkes, Bros.		3	2	-	-	-	-	5
Stirling & Nash	7	221	232	8	-	-	-	468
Total recorded as diverted in Canada	7	224	234	8	-	-	-	512
Flow at the Boundary	22,600	3,870	3,690	2,790	1.050	791	1,610	36,401
			Frenchman River.					
Wylie, D.J.	-	253	83	-	-	-	-	336
Cross, F.	-	17	77	18	-	-	-	112
Bolingbroke	-	10	9	10	-	-	-	29
Pearse	-	41	72	-	-	-	-	113
Bate	-	-	-	-	-	-	-	6
Total recorded as diverted in Canada	-	321	241	28	-	-	-	596
Flow at the Boundary	29,200	8,670	7,380	7,750	2,640	1,670	1,550	58,860

No diversions in Canada from other northern tributaries.

Table 4

Diversions from the Northern Tributaries

of MILK RIVER in the United States

1928

(Quantities in acre-feet.)

Irrigator	April	May	June	July	August	Sept.	Oct.	Total
			Lodge Creek					
N. Chinook Canal		414	121	194	2			731
			Battle Creek					
Matheson Canal		262	93	7				362
			Frenchman River					
Frenchman Canal		108	708	501	830	60		2,210

Note:- No diversions in the United States from other northern tributaries.

The following table shows the amount of water in storage in the Nelson Reservoir at the end of each calendar month during the irrigation season, 1928.

(Quantities in acre-feet).

March	April	May	June	July	August	September	October
40,276	39,912	38,455	32,838	35,254	39,181	45,545	44,778

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1928

Report to the International Joint Commission on the division and use of the waters of the St. Mary and Milk Rivers...