

CANADA - ALBERTA

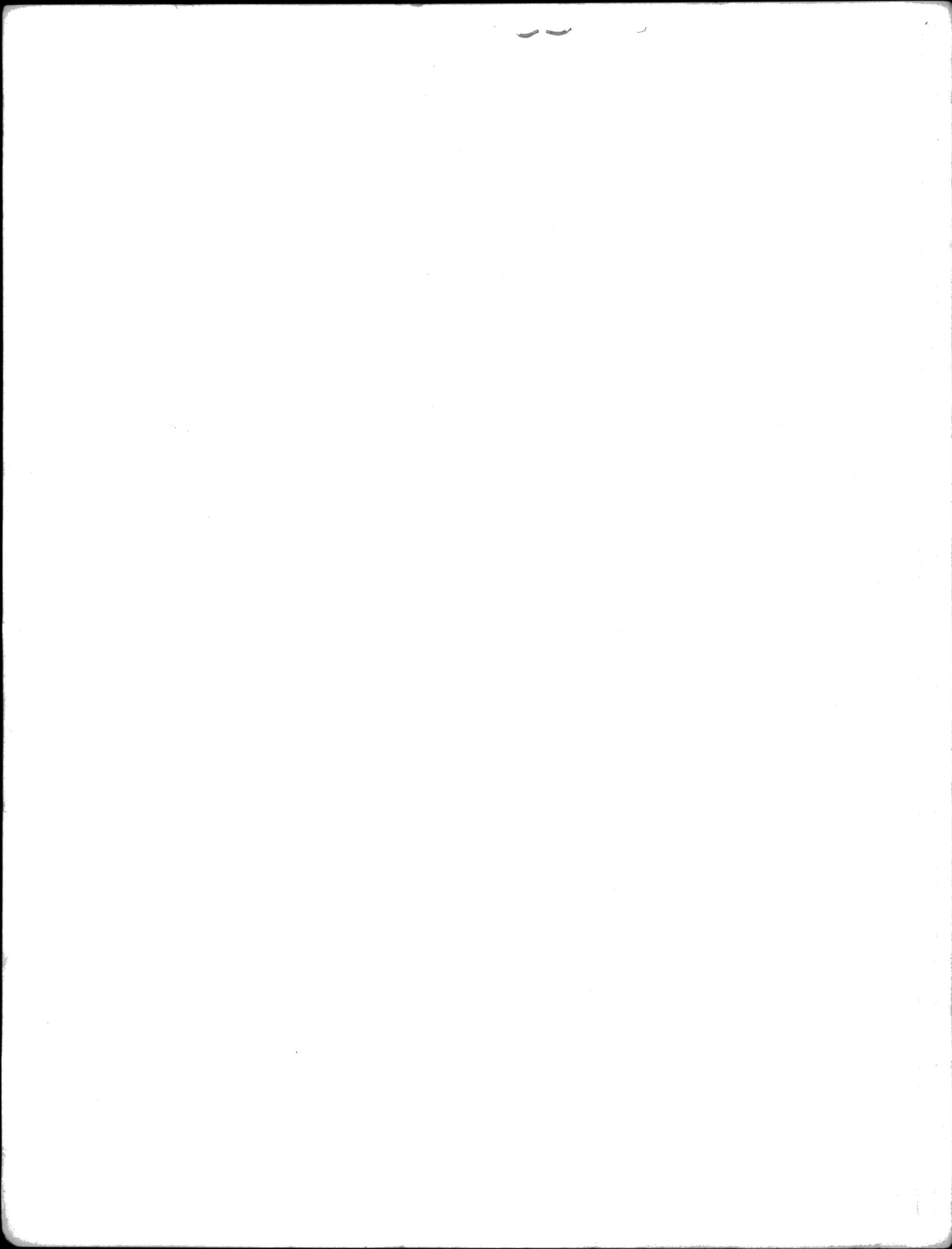
MEMORANDUM OF AGREEMENT

FOR

WATER QUANTITY SURVEYS

ANNUAL REPORT 1976 - 1977

August, 1977



CANADA - ALBERTA

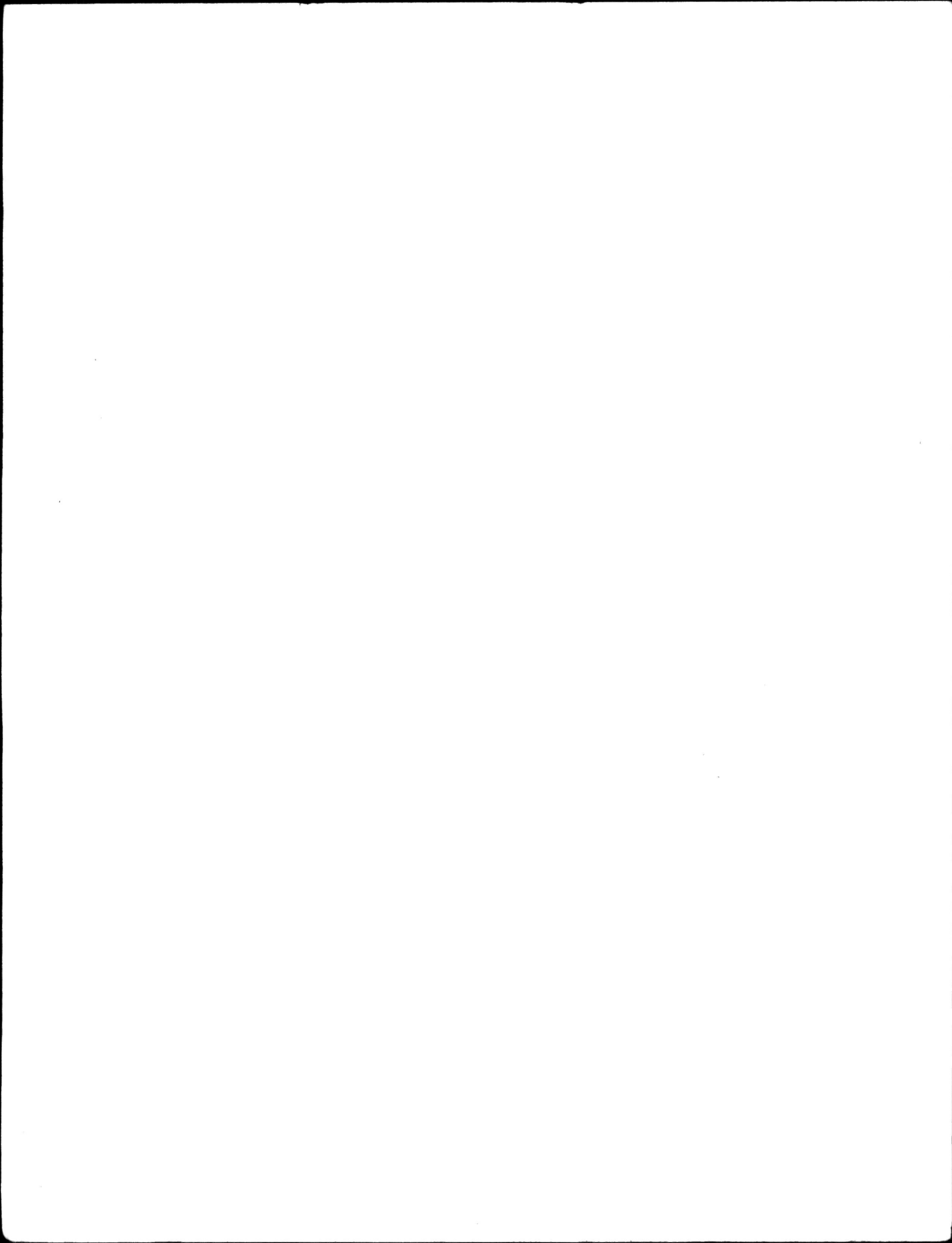
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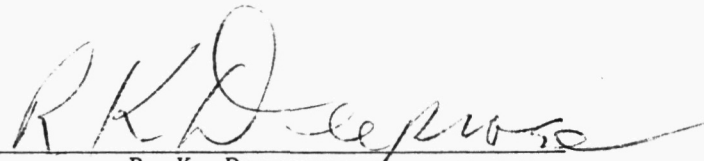
TO: Mr. E. F. Durrant  
Administrator for Canada

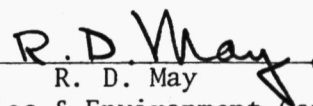
Mr. P. G. Melnychuk  
Administrator for Alberta

We hereby submit an annual report for fiscal year 1976-77 covering activities under the Memorandum of Agreement for Water Quantity Surveys for the Province of Alberta.

Province of Alberta

Government of Canada

  
R. K. Deepröse  
Alberta Department of the Environment

  
R. D. May  
Fisheries & Environment Canada

Members  
Co-ordinating Committee

August 19, 1977

Edmonton and Calgary, Alberta.

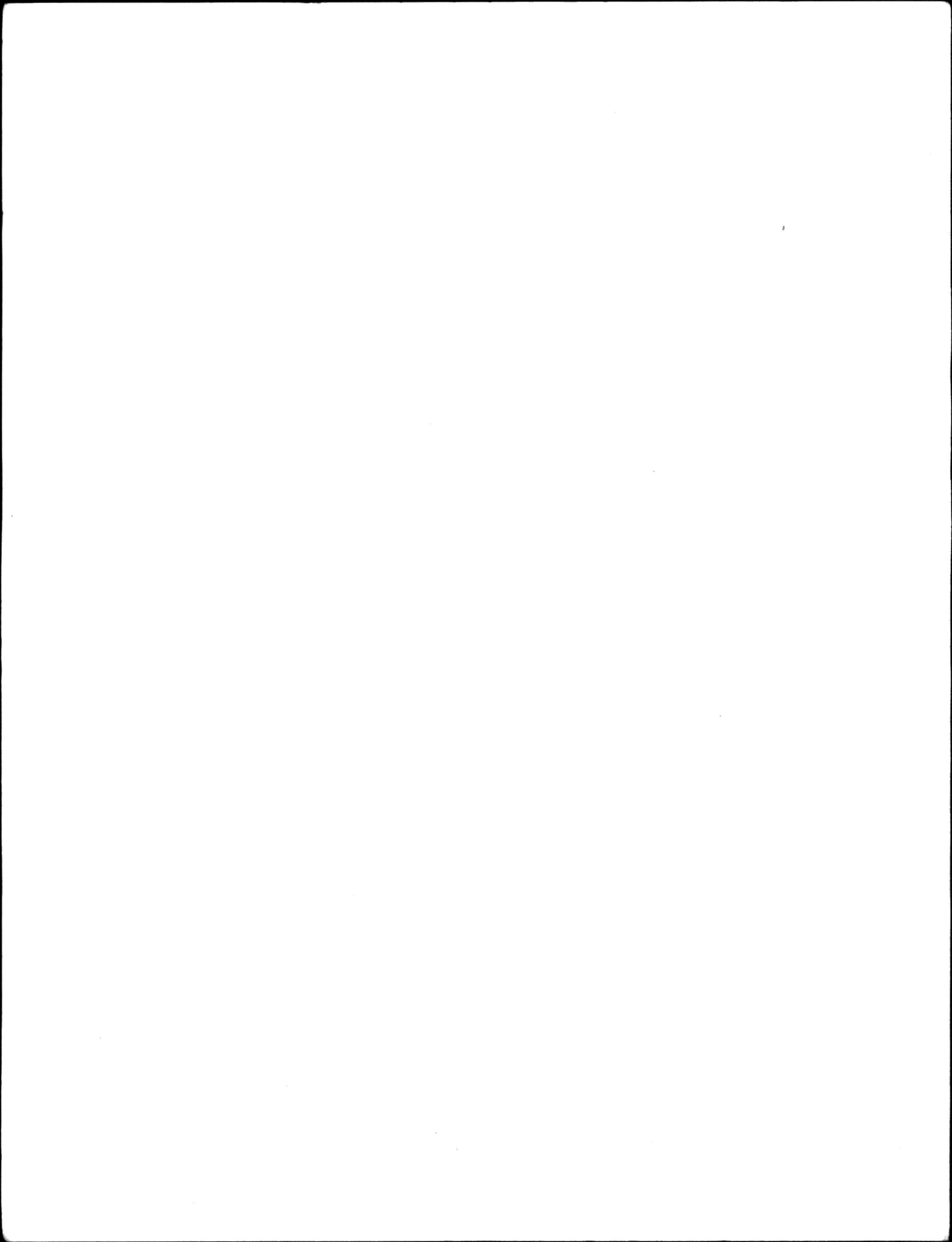


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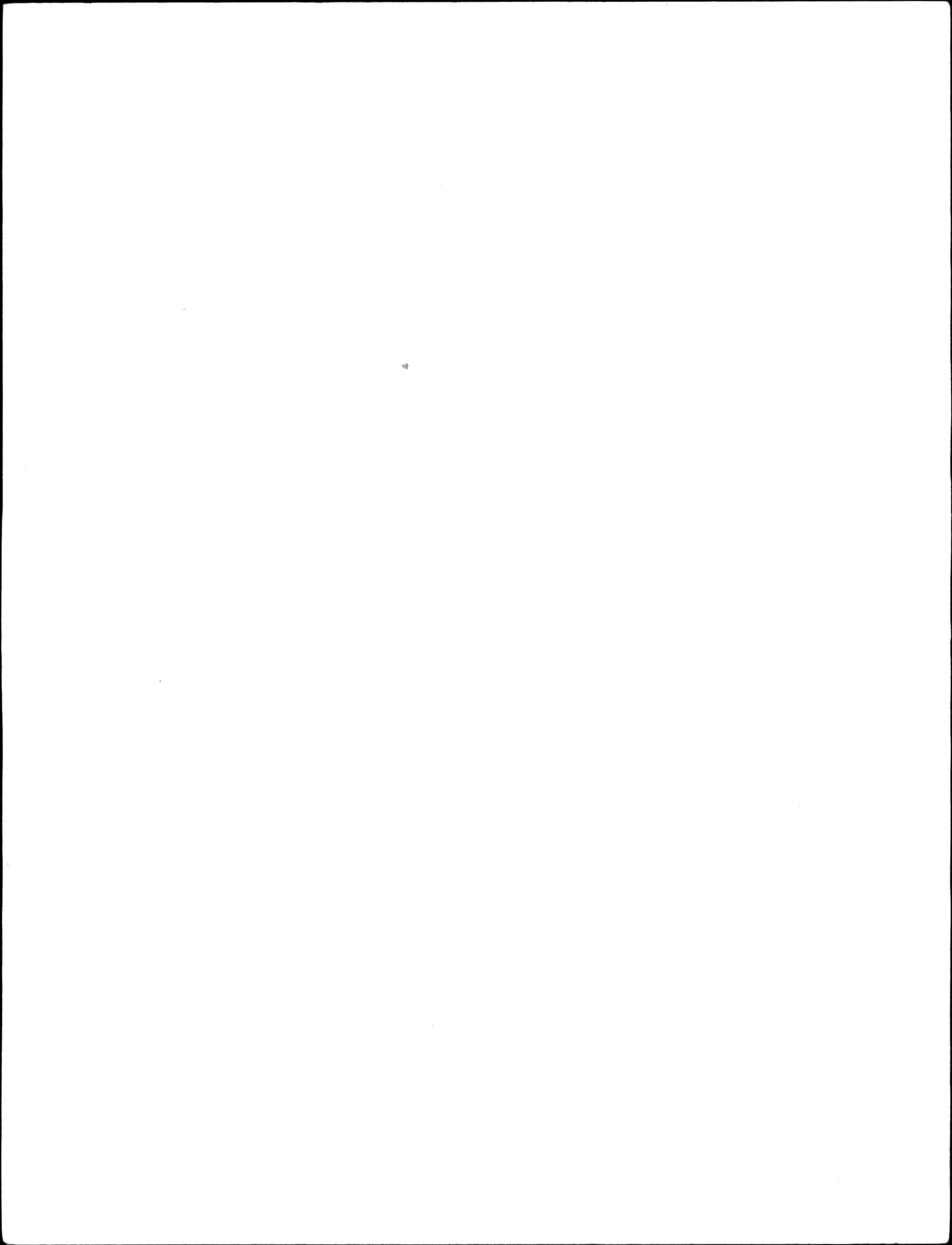
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## 1. SUMMARY OF ACTIVITIES, 1976/77

Two formal meetings of the Coordinating Committee were held during the fiscal year, on November 3, 1976 and March 22, 1977. At the November 3rd meeting it was decided that both agencies would put their thoughts on Network Planning for Alberta on paper and exchange the information prior to December 1, 1976. A committee of four made up of two representatives from each agency was to get together after that date to put into motion a joint network planning (evaluation) effort. An initial meeting of the group was held March 22nd and an outline was prepared for a pilot project network plan for a selected basin. Some progress has been made on the project.

The March 22, 1977 meeting was to wrap up the 76/77 cost-sharing computations and to discuss the 77/78 program.

### Peace-Athabasca Delta Project (Federal-Provincial Study) 76/77 Spring Creek Research Watershed

Alberta Environment continued to operate the thirty-four stations in the PAD area and the six in the Spring Creek Basin. Eight additional stations were operated by Alberta in the PAD area during 1976/77.

#### Normal Hydrometric Program

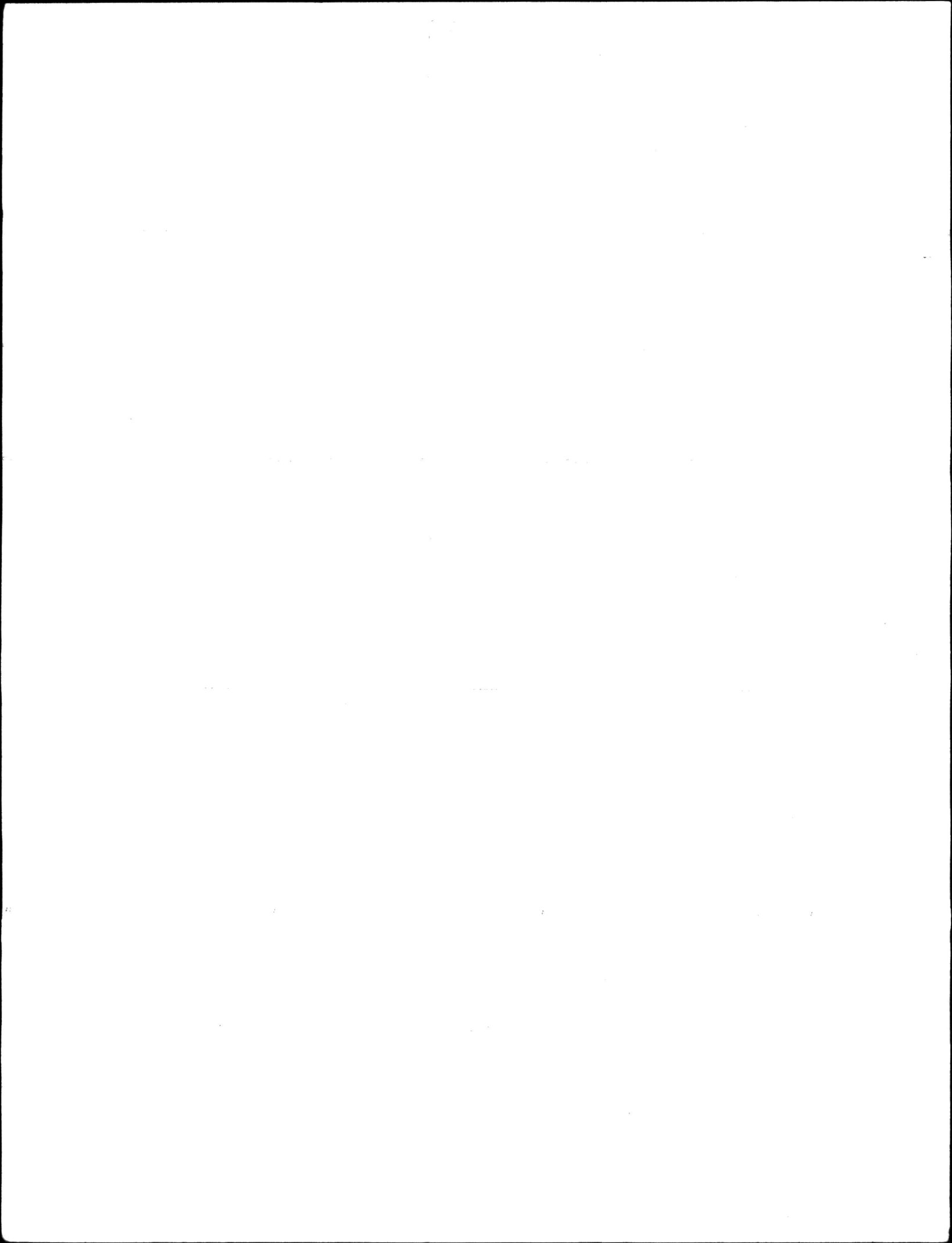
Alberta requested that twenty-one new stations be considered for the 1976/77 season. Thirteen stations were built from the original list plus one station substituted during the season. Four stations were discontinued during 1976/77. Ten irrigation return flow stations were reclassified from Federal to Provincial.

#### Construction and Maintenance

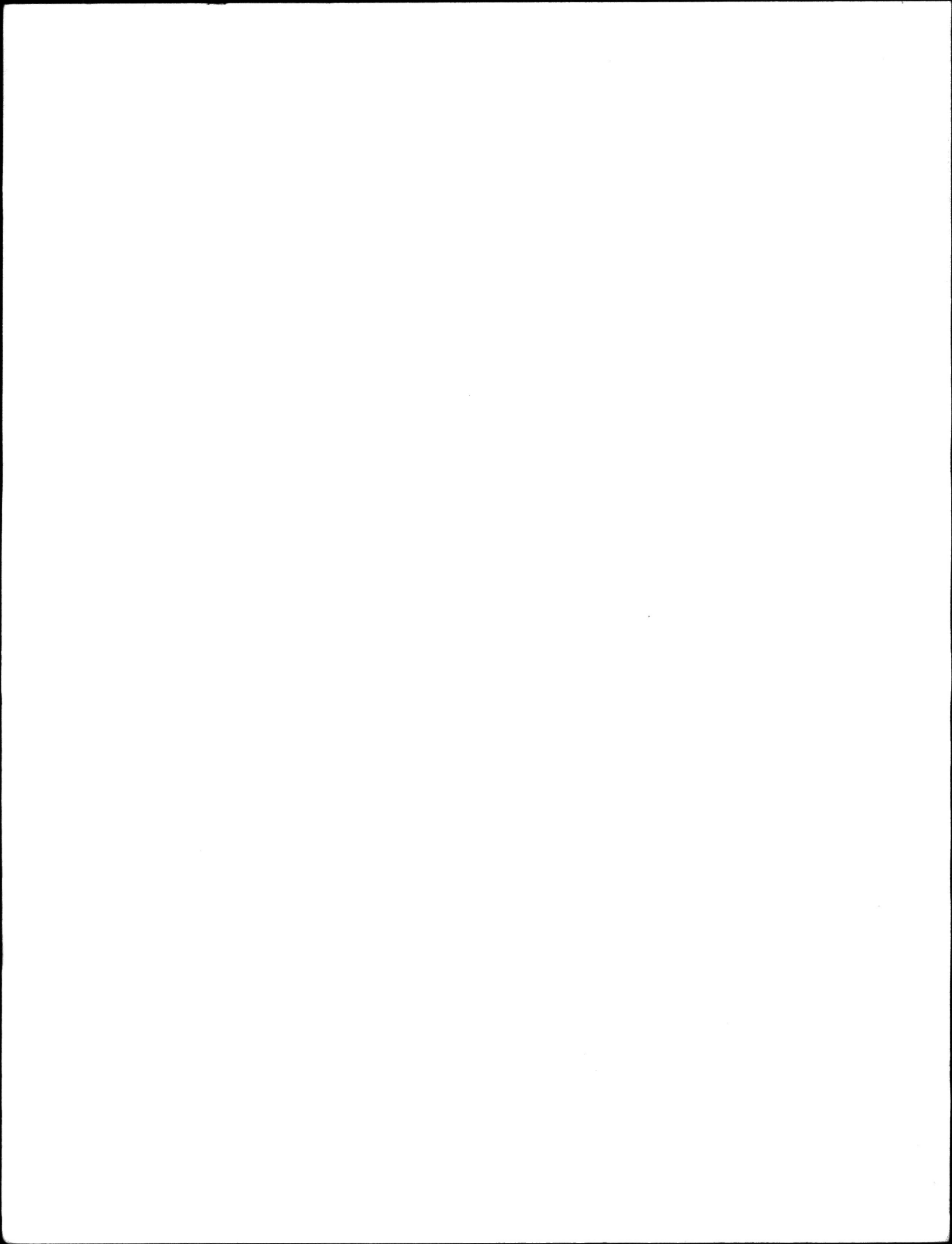
In addition to the 14 new stations, maintenance was required at 65 stations: 29 Federal, 30 Federal-Provincial, and 6 Provincial. The maintenance in southern Alberta was attributed to an unusual high water event.

#### Sediment Program

A full sampling program was maintained at twenty-two stations, with a miscellaneous sampling program at another thirty-eight stations. The miscellaneous sampling consists of the technician taking a sample when servicing a station. The regular sediment stations are designated as such in the Schedule A listing.



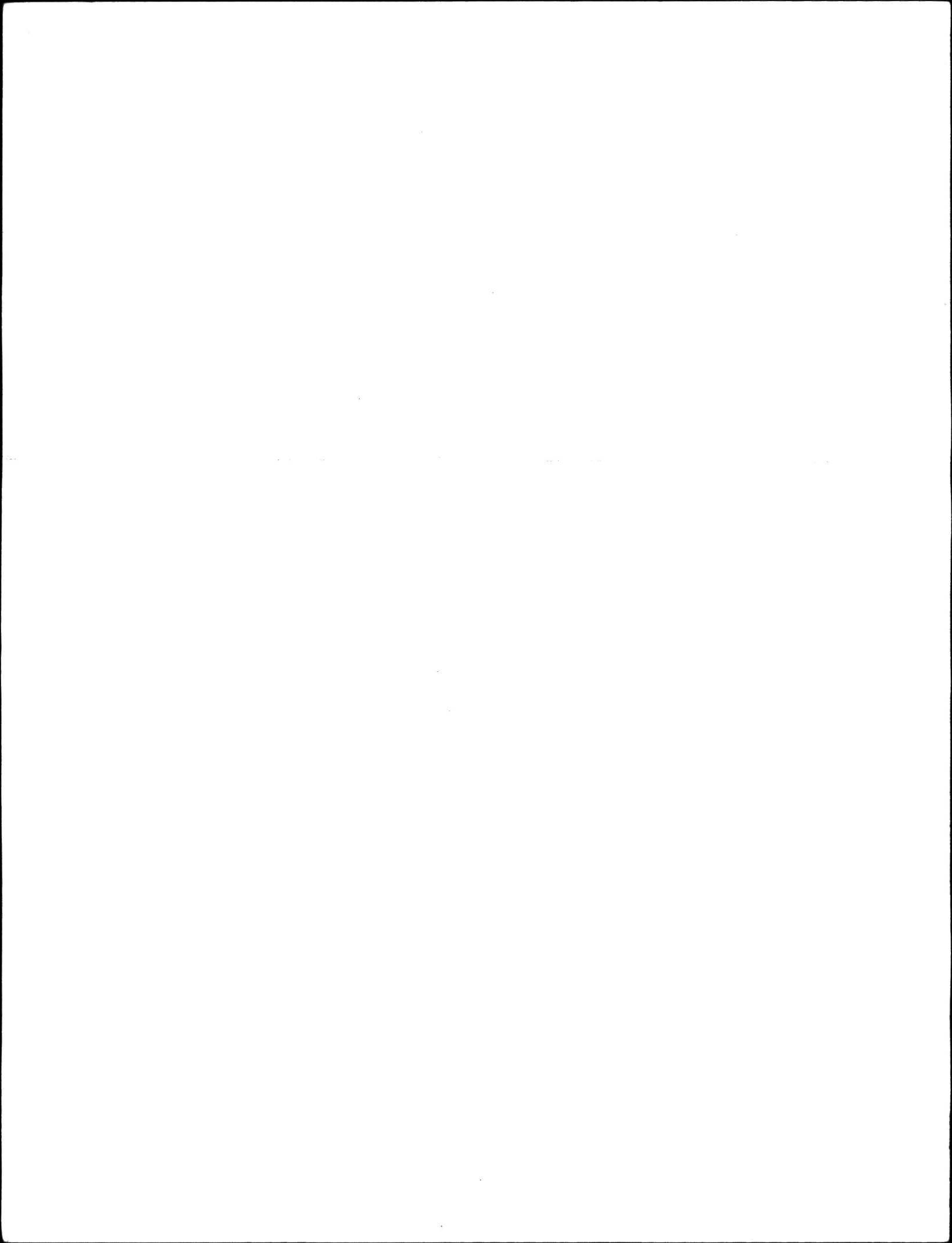
A note of interest during the fiscal year was the meeting of the country-wide Coordinating Committees in Ottawa on October 20, 1976 to discuss the guidelines for designating stations as to responsibility. It resulted in another Draft of the guidelines dated November 12, 1976 as attached to the 1975/76 Report, and a second draft attached to this report dated February 1, 1977.



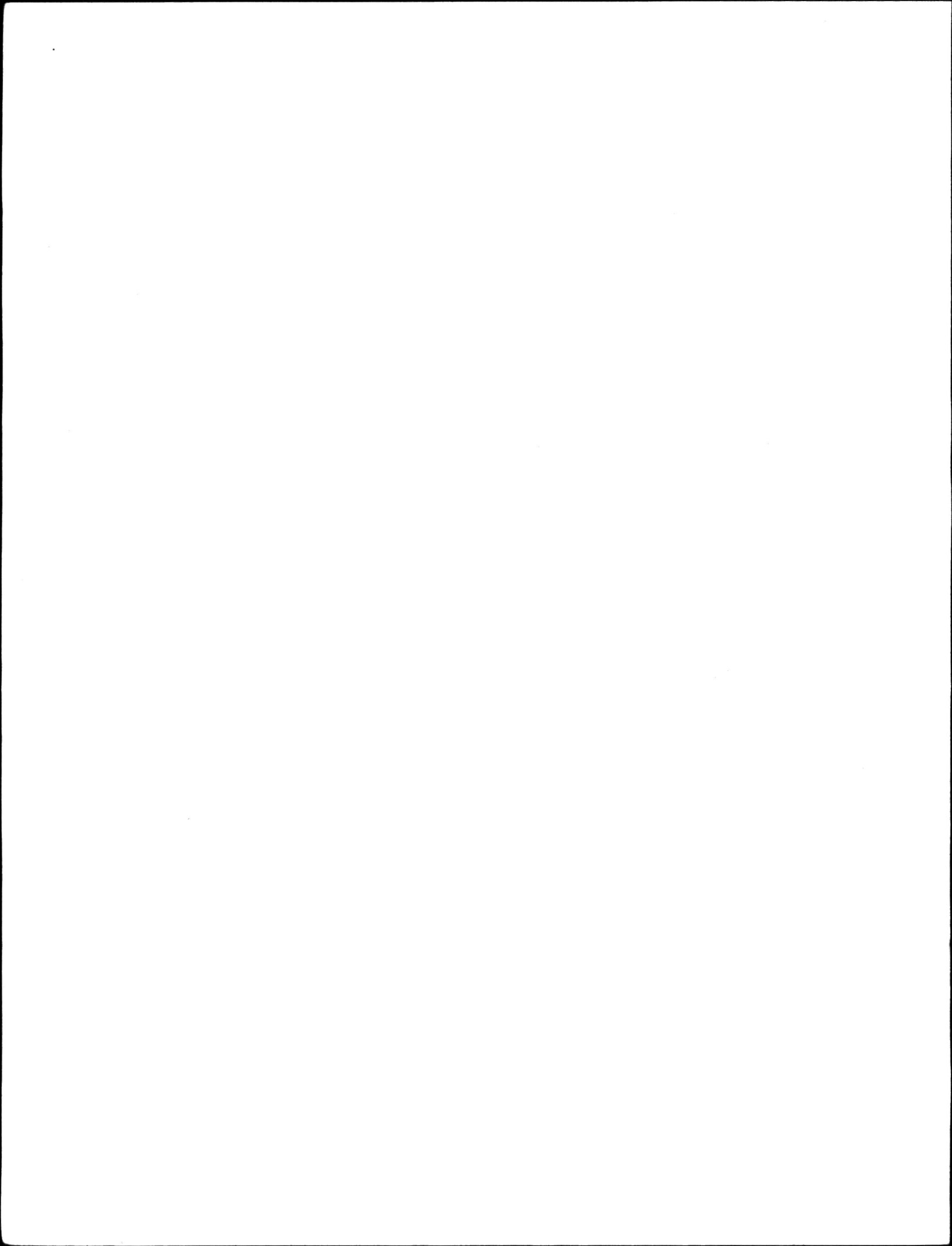
2. STATIONS REQUESTED BY ALBERTA FOR 1976/77

Status Report of November 3, 1976 to Coordinating Committee

Requested Sites	Installed & Date	Category	Remarks
1. Columbine Creek nr Columbine	Not Inst'd	--	Unable to find suitable site.
2. Osborne Creek nr. Garth	Not Inst'd	--	Unable to find suitable site (combined reconnaissance - helicopter transportation provided by Alberta)
3. Whitemud Creek Basin Tributary (Whitemud Creek nr. Ireton)	August	F-P	
4. Medicine River Tributary	August	F-P	
5. Dogpound Creek Basin (Beaverdam Creek nr. Cochrane)	April	F-P	
6. Jumpingpound Creek Tributary (Jumpingpound Creek nr. Cox Hill)	July	F-P	
7. Vermilion River below Morecambe	Not Inst'd	--	Cancelled as per discussions with Coles on March 15.
8. Ray Creek nr. Innisfail	June	P	Should look at discontinuing Threehills Creek below Ray Creek
9. Renwick Creek nr. Threehills	June	P	
10. Rosebud River Basin Tributary (Sheep Coulee nr. Carstairs)	May	P	
11. McAlpine Creek nr. Elkwater	June	P	
12. Mackay Creek nr. Grayburn Gap	June	P	
13. East Berry Creek	Not Inst'd	--	No suitable locations. Contains many small dug-outs and small dams.
14. McGregor Lake Inflow	May	P	Rebuilt old PFRA station.
15. McGregor-Travers Canal	May	P	Rebuilt old PFRA station.
16. Stirling Lake Outflow	May	P	
17. M.I.D. Canal nr. Magrath (Pothole Turnout nr. Magrath)	May	P	
18. Swan River Tributary	Not Inst'd	--	Major maintenance in Peace River area & Spring Creek basin precluded installation.



Requested Sites	Installed & Date	Category	Remarks
19. Wabasca River below Trout River	Not Inst'd	--	
20. Berland River below Wildhay River	Not Inst'd	--	No suitable site found.
21. York Creek	Not Inst'd	--	Province had low priority on this station.
22. Beaverdam Creek near Cochrane	April	F-P	Substitute station.





3. STATION & OPERATIONAL CHANGES DURING 1976/77

New Gauging Stations Added to Network (Total 14)

		<u>Category</u>
1.	05CB005 <i>Alameda R. in Summit</i> Beaverdam Creek near Cochrane	F-P(190)*
2.	05BH013 Jumpingpound Creek near Cox Hill	F-P(191)
3.	05BH010 Ray Creek near Innisfail	F-P(192)
4.	05BH011 Renwick Creek near Threehills	F-P(193)
5.	05CE019 Sheep Coulee near Carstairs	F-P(194)
6.	06CC010 Welch Creek Tributary near Leedale	F-P(195)
7.	05DF007 Whitemud Creek near Ireton	F-P(196)
8.	05AH042 Mackay Creek near Grayburn Gap	P (52)
9.	05AH043 McAlpine Creek near Elkwater	P (53)
10.	05AC024 McGregor Lake Inflow near Milo	P (54)
11.	05AC025 McGregor-Travers Canal	P (55)
12.	05AF030 Milk River Ridge Reservoir	P (56)
13.	05AF029 Pothole Turnout near Magrath	P (57)
14.	05AE038 Stirling Lake Outflow near Stirling	P (58)

\* F=Federal, P=Provincial; (190) Figures in parentheses = 190 in Federal-Provincial Category Listing, Schedule A.

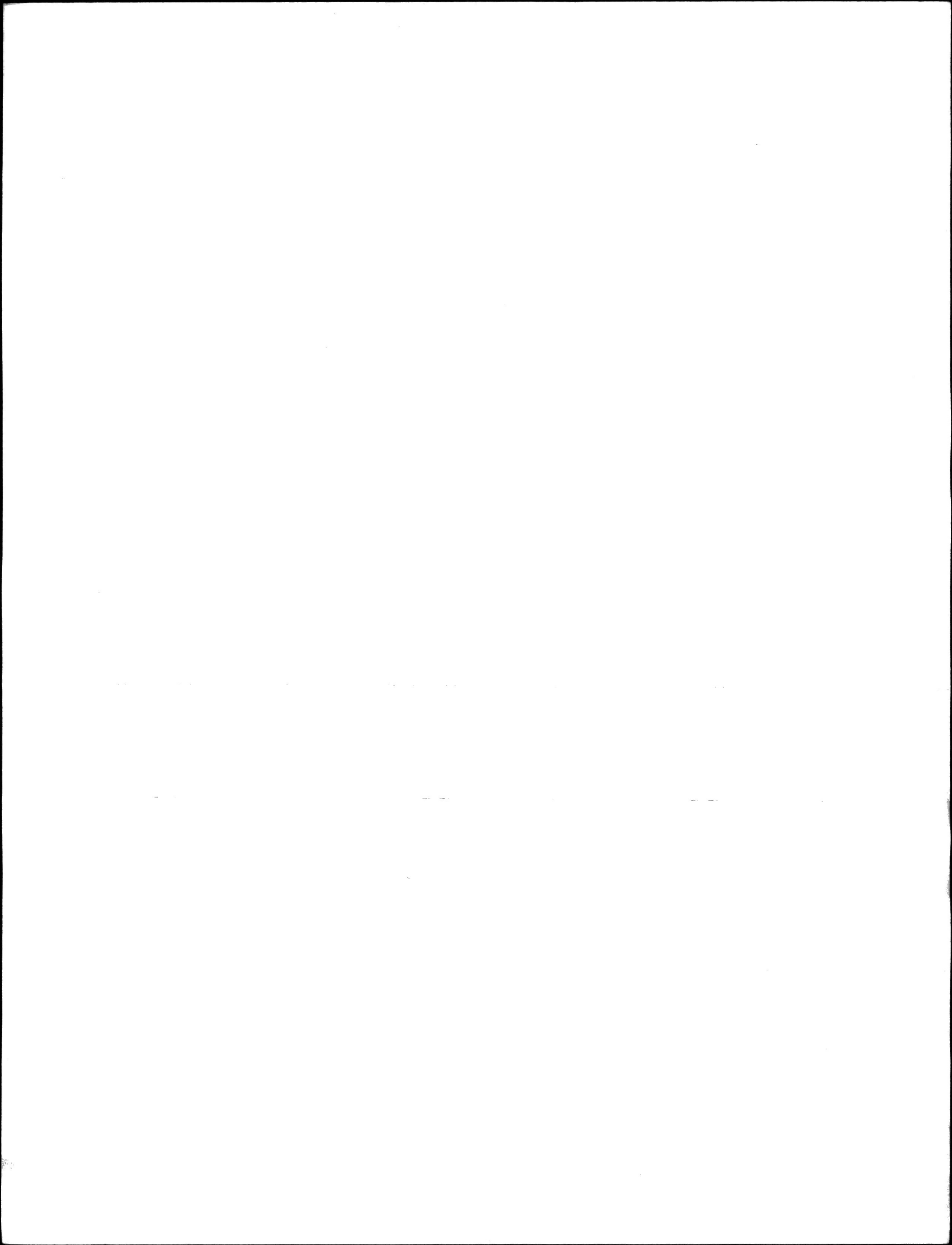
Stations Discontinued, 1976/77 (Total 5)

1.	07DA005 Beaver River near Fort MacKay	F-P
2.	05DB001 Clearwater River near Rocky Mountain House	F-P
3.	05AD039 Lonesome Lake at Waterton Park <i>- Deleted job deleted.</i>	F
4.	05DC008 Ram River at Ram Glacier	F
5.	07CD002 Clearwater River below Waterways	F

Changes in Station Classification, 1976/77

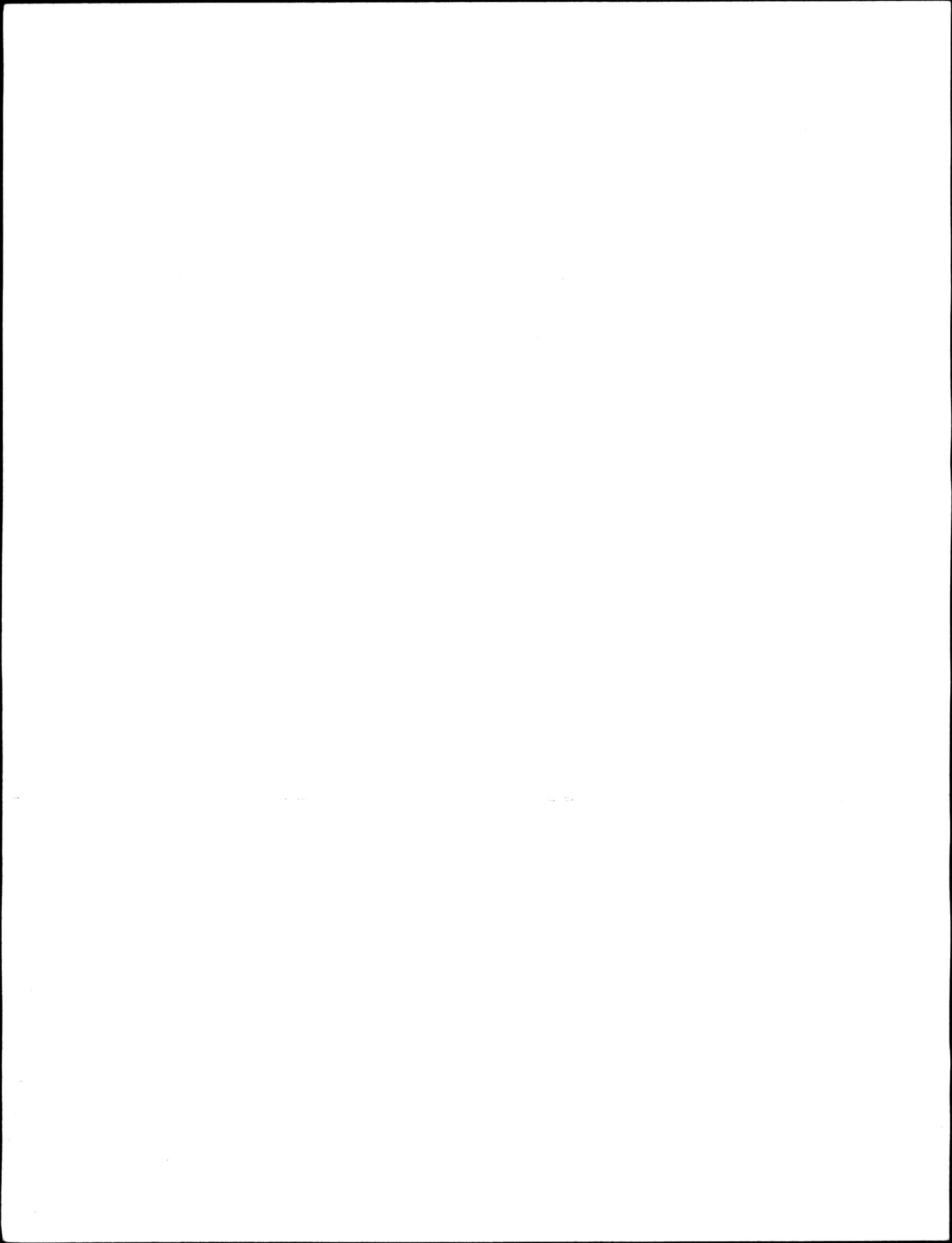
1.	05AG004 Bow River Development Drain A near Hays	F to P (6)**
2.	05BN008 Bow River Development Drain D near Vauxhall	F to P (7)
3.	05BN023 Bow River Development Drain E near Vauxhall	F to P (8)
4.	05AG005 Bow River Development Drain T near Hays	F to P (10)
5.	05BN014 Coal Creek at Bow City	F to P (15)
6.	06BM005 Hammer Hill Spillway near Gleichen	F to P (27)
7.	05AG007 Lateral 10 Spillway near Chin	F to P (28)
8.	05BN015 Rolling Hills Canal No. 1 Spill	F to P (43)
9.	05BN019 Rolling Hills Canal No. 2 Spill	F to P (44)
10.	05AD020 Six Mile Coulee Spillway near Lethbridge	F to P (48)

\*\* F=Federal, P=Provincial; (6) Figures in parentheses = 6 in Schedule A 1976/77 listing.



Sediment -- Miscellaneous Sampling, 1976/77

1.	07AE001	Athabasca River near Windfall	F-P
2.	06AD006	Beaver River at Cold Lake Reserve	F
3.	05AD002	Belly River at Stand Off	F-P
4.	05BM004	Bow River below Bassano Dam	F-P
5.	07JF002	Boyer River near Fort Vermilion	F-P
6.	07BF001	East Prairie River near Enilda	F-P
7.	05BJ004	Elbow River at Bragg Creek	F-P
8.	07AH001	Freeman River near Fort Assiniboine	F-P
9.	07HF002	Keg River at Highway #35	F-P
10.	07BB005	Little Paddle River at Mayerthorpe	F-P
11.	07BA003	Lovett River near the Mouth	F-P
12.	07AF002	McLeod River above Embarras River	F-P
13.	07AG004	McLeod River near Whitecourt	F-P
14.	05DF001	North Saskatchewan River at Edmonton	F
15.	05DC002	North Saskatchewan River at Saunders	F-P
16.	07HC001	Notikewin River at Manning	F
17.	07BB004	Paddle River at Rochfort Bridge	F-P
18.	07FD003	Peace River at Dunvegan Bridge	F-P
19.	05AH041	Peigan Creek near Pakowki Road	F-P
20.	07BB002	Pembina River near Entwistle	F-P
21.	07BC002	Pembina River near Jarvie	F-P
22.	07CA005	Pine Creek near Grassland	F-P
23.	07JF003	Ponton River above Boyer River	F-P
24.	05DC006	Ram River near the Mouth	F-P
25.	05CA009	Red Deer River below Burnt Timber Creek	F-P
26.	05EC003	Redwater River near Redwater	F-P
27.	05BL014	Sheep River at Turner Valley	F-P
28.	05DA002	Siffleur River near the Mouth	F-P
29.	07GF001	Simonette River near Goodwin	F-P
30.	05AJ001	South Saskatchewan River at Medicine Hat	F-P
31.	05BC001	Spray River at Banff	F
32.	07BJ001	Swan River near Kinuso	F-P
33.	05EE001	Vermilion River at Hazeldine	F-P
34.	05EE003	Vermilion River at Vegreville	F-P
35.	05EC002	Waskatenau Creek near Waskatenau	F-P
36.	05AD028	Waterton River at Glenwood	F-P
37.	07BF002	West Prairie River at High Prairie	F-P
38.	05AB021	Willow Creek near Claresholm	F-P



AOSERP 1976/77

This section is added as information only and to explain the shift of two stations to the Project listing.

New Stations

1. Eaglenest Lake near Outlet
2. Gardiner Lake (Upper) Birch Mountains
3. Lost Creek near the Mouth
4. Namur Lake at Birch Mountain Lodge
5. Tar River (Upper) near Fort MacKay
6. Thickwood Creek near Fort MacKay

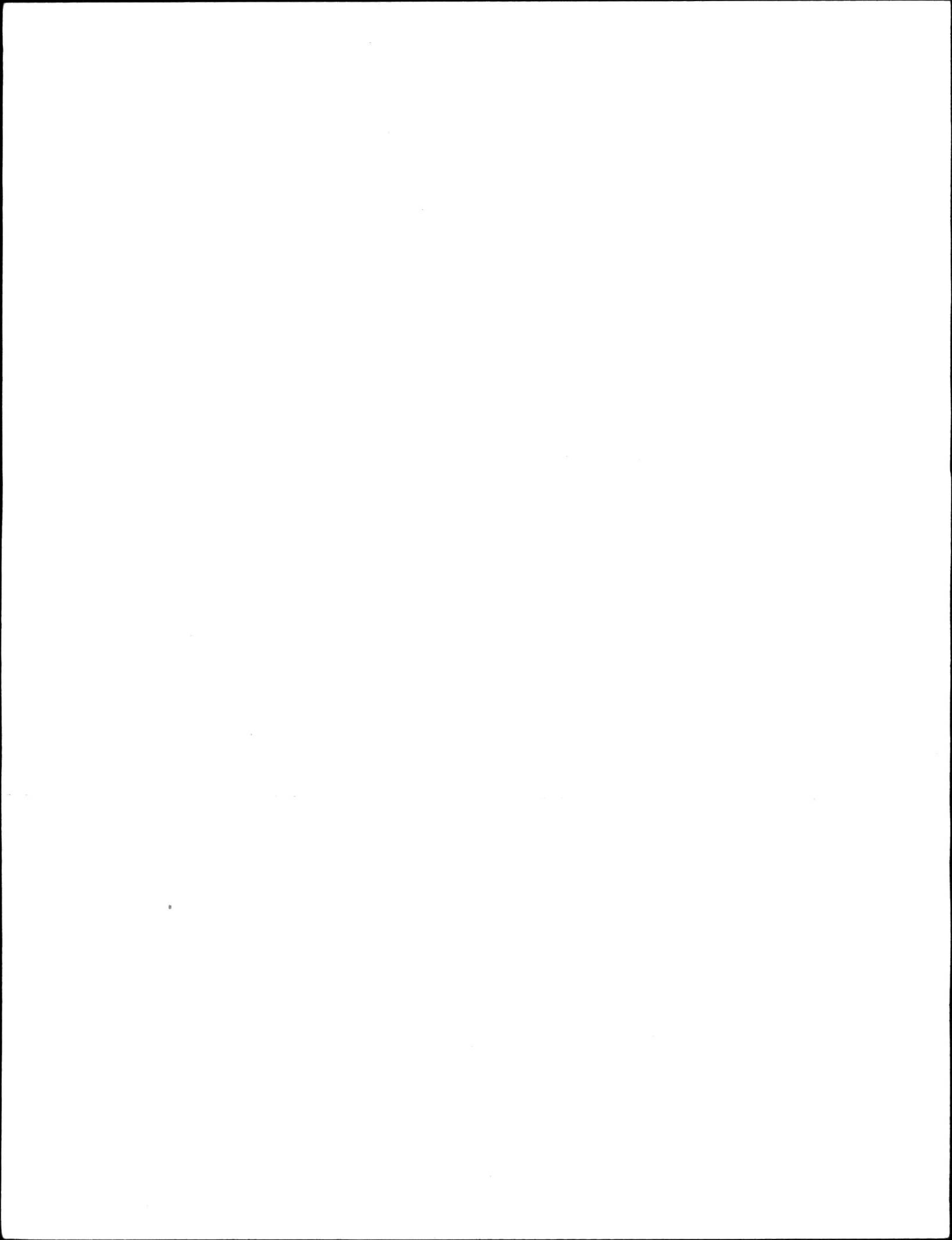
Since the following two stations are within the study area, they have been added to the AOSERP list:

Richardson River near the Mouth	F-P(139)
Gregoire Lake near Fort McMurray	P (24)

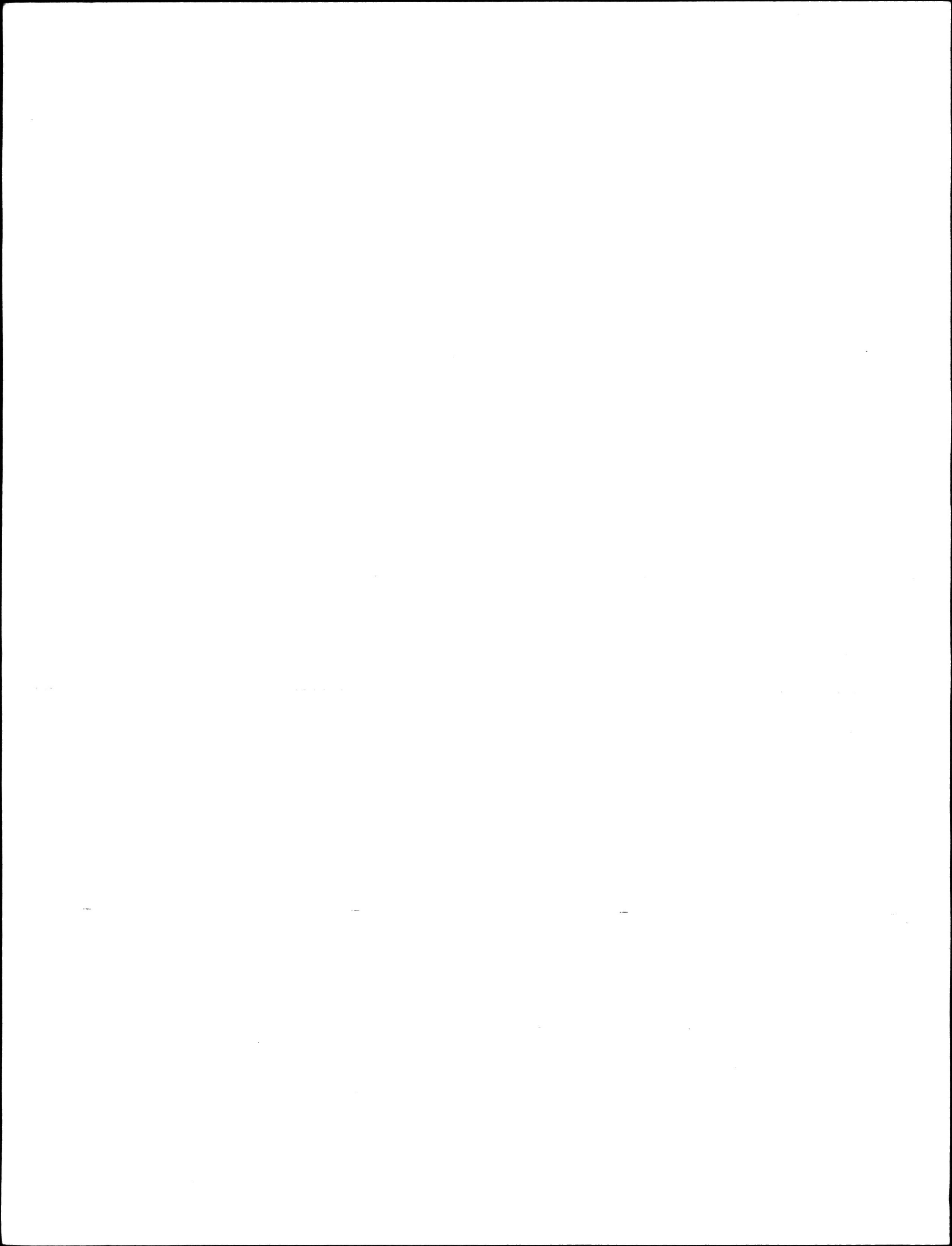
PROPOSED DISCONTINUANCE OF STATIONS IN BANFF & JASPER NATIONAL PARKS BEGINNING 1977/78

- |    |         |                                  |   |
|----|---------|----------------------------------|---|
| 1. | 07AA002 | Athabasca River near Jasper      | F |
| 2. | 05BA007 | Baker Creek near the Mouth       | F |
| 3. | 05BA008 | Bow River below Hector Lake      | F |
| 4. | 05BB003 | Forty Mile Creek near Banff      | F |
| 5. | 05BA002 | Pipestone River near Lake Louise | F |
| 6. | 05BC001 | Spray River at Banff             | F |

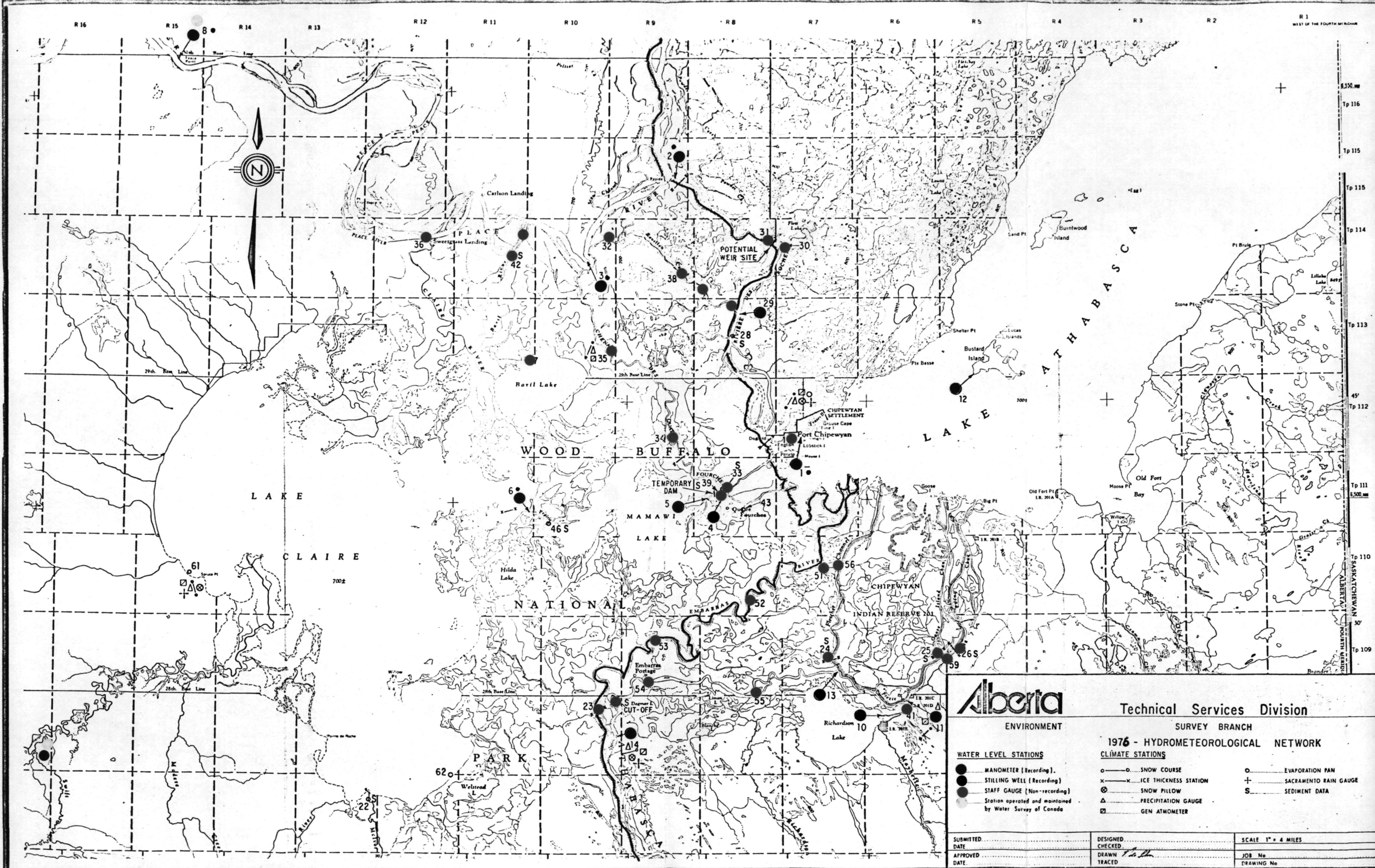
Stations to be discontinued as Parks Canada declined to assist in the funding of operations. On discussing the problem with Alberta, WSC will carry on operations at Numbers 1, 2, 4, and 6 for 1977/78. A decision will be required before the beginning of the 78/79 fiscal year.



ALTA. NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
<u>FEDERAL (from Schedule A, Sheet 4)</u>									
7	07KF005	Baril Lake at Chiper's Creek		x		x			x
33	07KF006	Chenal des Quatre Fourches below Four Forks	Misc x				x		x
35	07KF008	Chenal des Quatre Fourches at High Rock Tower		x		x			x
34	07KF007	Chenal des Quatre Fourches at Ranger's Cabin		x		x			x
4	07KF001	Chenal des Quatre Fourches at Quatre Fourches		x		x			x
6	07KF002	Lake Claire near Outlet to Prairie River		x			x		x
5	07KF003	Mamawi Lake at Old Dog Camp		x			x		x
39	07KF010	Mamawi Lake Channel at Dog Camp	Misc x		x		x		x
3	07KC005	Peace River below Chenal des Quatre Fourches		x			x		x
36	07KC004	Peace River at Sweetgrass Landing		x		x			x
46	07KF014	Prairie River near Lake Claire	Misc x		x	x			x
32	07NA006	Revillon Coupe above Peace River		x		x			x
38	07NA005	Revillon Coupe at Ranger's Cabin		x		x			x
<u>FEDERAL-PROVINCIAL (from Schedule A, Sheet 8)</u>									
14		Athabasca River near Old Fort		x			x		x
13		Athabasca River above Fletcher Channel		x		x			x
11	07DD007	Athabasca River above Jackfish Creek		x			x		x
55		Athabasca River above Richardson River		x		x			x
54		Athabasca River at Bob Armit's Cabin		x		x			x
26	07DD006	Big Point Channel below Divergence	Misc x		x		x		x
51		Embarras River		x		x			x
53		Embarras River		x		x			x
53		Embarras River		x		x			x
23	07DD003	Embarras River below Divergence	Misc x		x		x		x
24	07DD004	Fletcher Channel below Divergence	Misc x		x		x		x
25	07DD005	Goose Island Channel below Divergence	Misc x		x		x		x
41	07DD009	Jackfish Creek above Athabasca River		x		x			x
12		Lake Athabasca at Bustard Island		x			x		x
1	07MD001	Lake Athabasca at Fort Chipewyan		x			x		x
10	07DD008	Richardson Lake at the Outlet		x		x			x
29	07NA003	Riviere des Rochers above Confluence Revillon Coupe		x			x		x
2	07NA001	Riviere des Rochers above Slave River		x			x		x
28	07NA002	Riviere des Rochers at Ben Houle's Cabin	Misc x		x		x		x
30	07NA007	Riviere des Rochers East of Little Rapids		x			x		x
31	07NA008	Riviere des Rochers West of Little Rapids		x		x			x
<u>FEDERAL-PROVINCIAL</u>									
	07GF002	Spring Creek near Valleyview	x		x	x			x
<u>PROVINCIAL</u>									
	07GF005	Bridlebit Creek near Valleyview	x		x	x			x
	07GF007	Horse Creek near Valleyview	x		x	x			x
	07GF006	Rocky Creek near Valleyview	x		x	x			x
	07GF004	Spring Creek (Upper) near Valleyview	x		x	x			x
	07GF003	Wolverine Creek near Valleyview	x		x	x			x
<u>ADDITIONAL STATIONS OPERATED BY ALBERTA (PAD)</u> (Classed Provisional Provincial -- Valentine letter and attachments dated March 9, 1977)									
27	I	Revillon Coupe below Riviere des Rochers	x		x		x		x
37	I	Peace River below Baril River		x		x			x
42	I	Baril River above Peace Point	x			x			x
47	O	Lake Athabasca at DPW Dock - Fort Chipewyan		x			x		x
48	I	Revillon Coupe Weir		x		x			x
49	O	Athabasca River Cut-Off	x		x	x			x
56	O	Fletcher Channel above Goose Channel		x		x			x
59	O	Athabasca River above Goose Island Channel		x		x			x
I=Inside Park; O=Outside Park									







**Alberta** Technical Services Division  
 ENVIRONMENT SURVEY BRANCH

1976 - HYDROMETEOROLOGICAL NETWORK

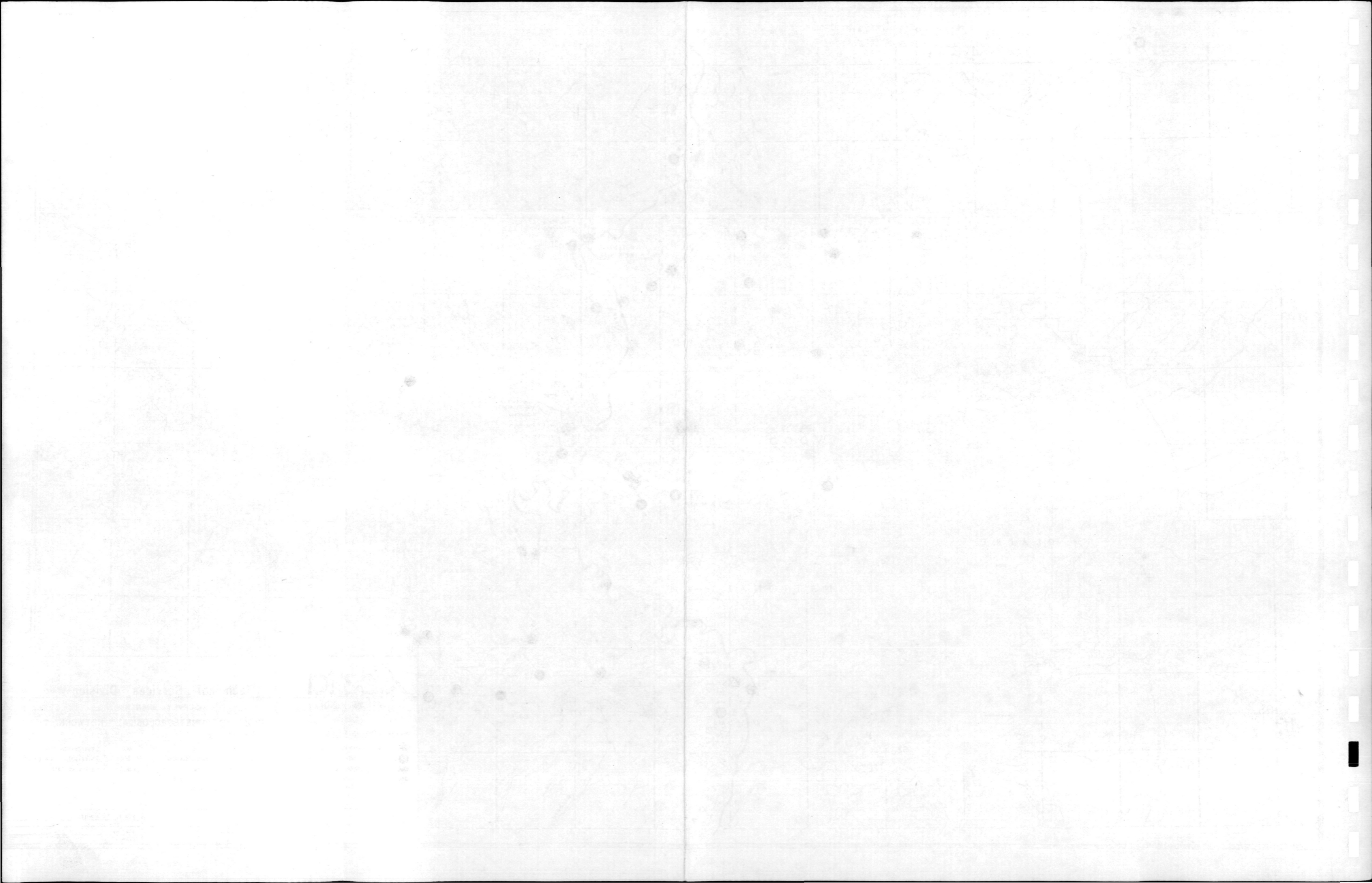
**WATER LEVEL STATIONS**

- MANOMETER (Recording)
- STILLING WELL (Recording)
- STAFF GAUGE (Non-recording)
- Station operated and maintained by Water Survey of Canada

**CLIMATE STATIONS**

- SNOW COURSE
- x ICE THICKNESS STATION
- ⊗ SNOW PILLOW
- △ PRECIPITATION GAUGE
- ⊠ GEN ATMOMETER
- EVAPORATION PAN
- + SACRAMENTO RAIN GAUGE
- S SEDIMENT DATA

SUBMITTED DATE	DESIGNED CHECKED	SCALE 1" = 4 MILES
APPROVED DATE	DRAWN <i>[Signature]</i>	JOB No
	TRACED	DRAWING No



GAUGING STATIONS  
Operated in  
ALBERTA  
1902-1977

10  
Number of Stations from Published Records

500

400

300

200

100

1910

20

30

40

50

60

70

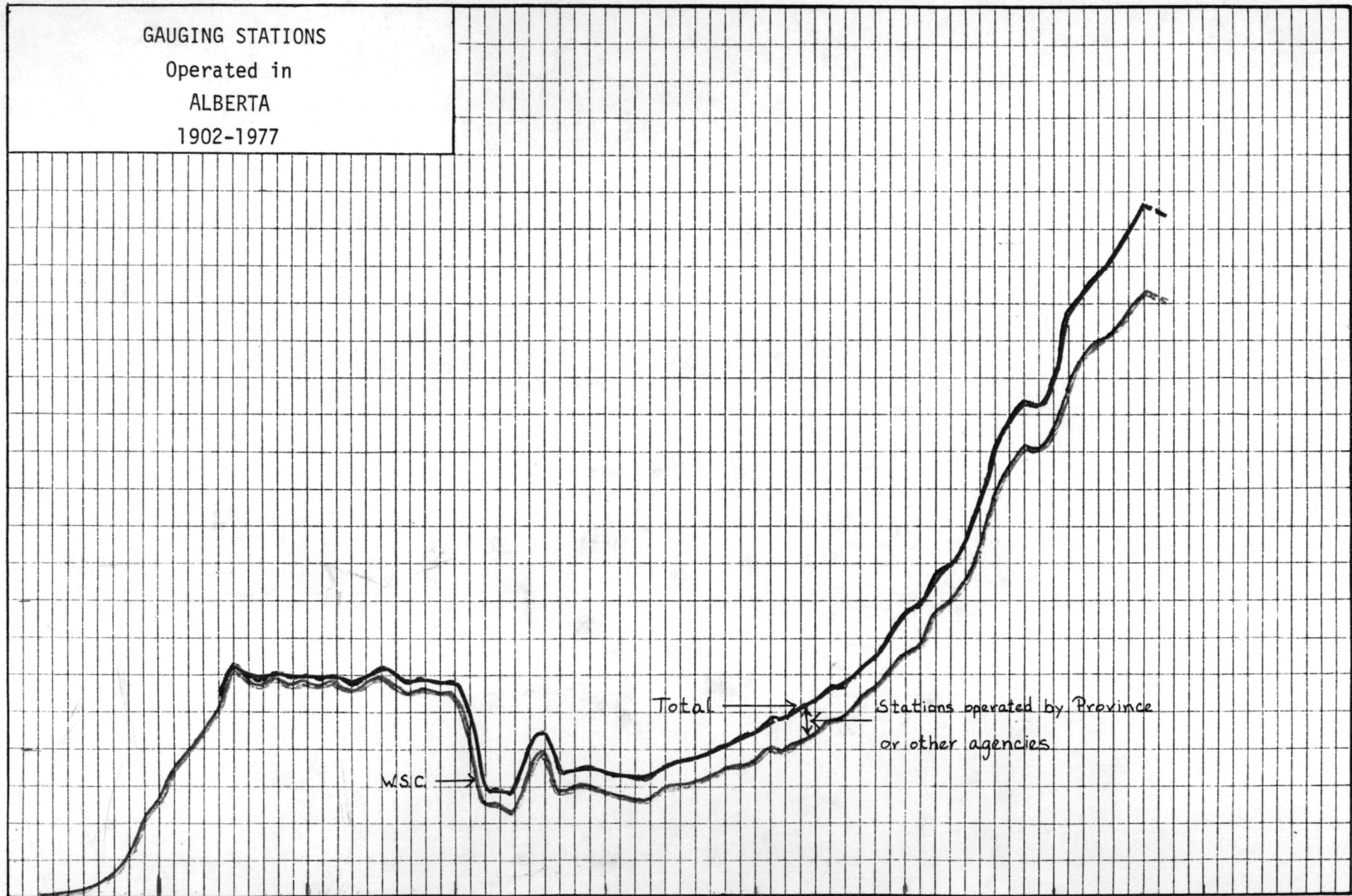
80

1990

W.S.C.

Total

Stations operated by Province  
or other agencies





## 5. SCHEDULE B -- ANNUAL PAYMENTS

- I. Water Quantity Stations
- II. Sediment Stations
- III. New Construction, Maintenance, and Reconstruction

- I. Basically the costs shared include only the salaries and & expenses of the staff directly involved in the field and
- II. office in the collection and compilation of water quantity data. Depreciation, operation, and maintenance of field transportation and equipment are included costs. In the case of sediment stations, the cost of sample analysis is added. Refer to Schedule B attached to the Memorandum of Agreement for details.
- III. Construction costs include both new construction and major maintenance and are shared on the basis of station classification as being Federal, Federal-Provincial, or Provincial. If a station is classed as Federal-Provincial the cost would be shared fifty-fifty; otherwise, one hundred percent. Water level instrumentation is at the expense of the agency operating the station irrespective of classification; special instrumentation (telemark, data platform) is a cost to the party requiring the service.

Chargeable costs are kept separate for the three sections of Schedule B. In the cases of Sections I and II, separate costs are maintained for Accessible and Remote stations.

### Accessible Stations

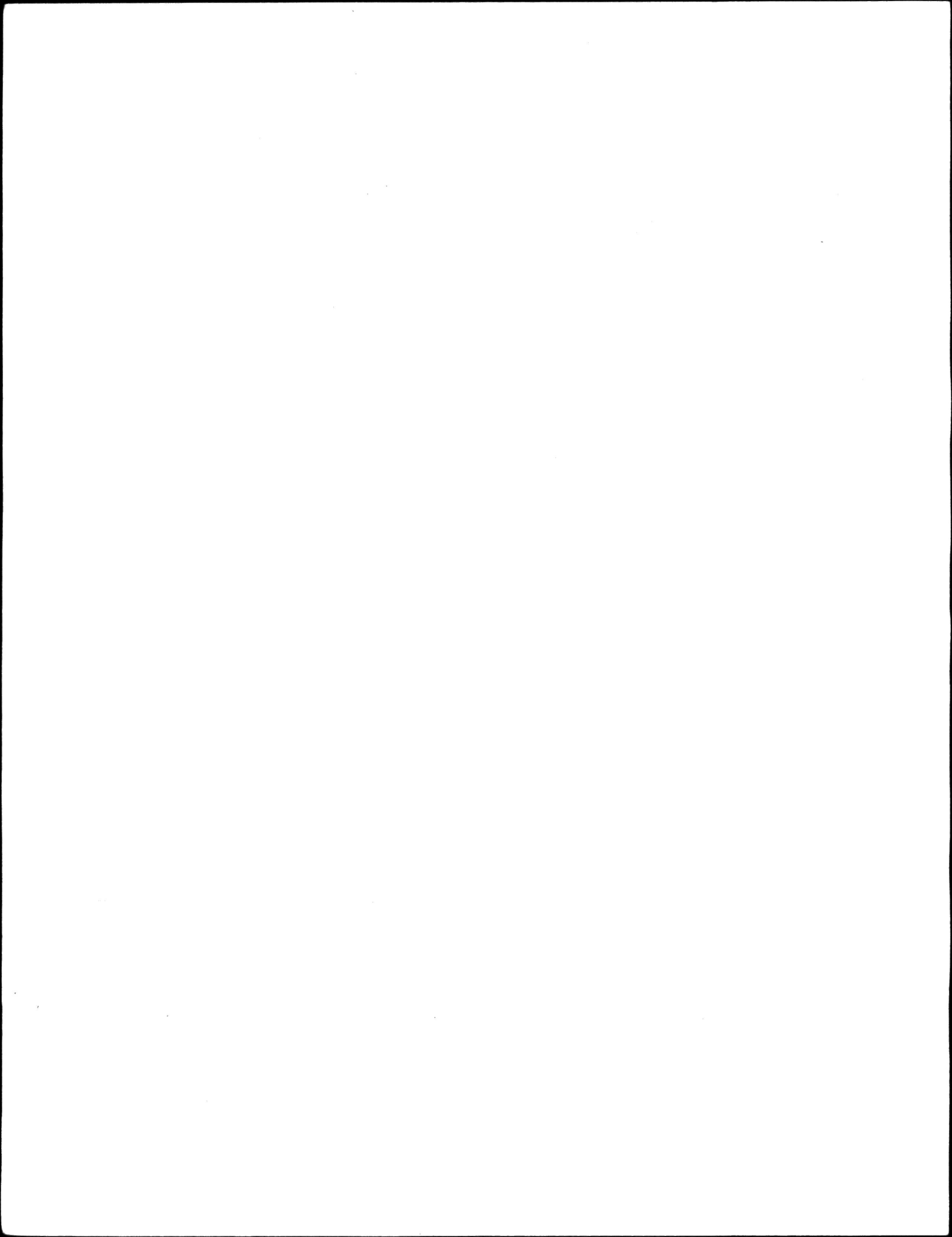
Stations normally serviced using conventional road access. Occasional use of all-terrain vehicle, over-snow vehicle, or aircraft may be required under unusual circumstances.

### Remote

The station is located in an area that requires other than road transportation facilities at all times. Normally a two-man field crew is used to provide a safety factor and to perform the additional workload required at remote stations.

### COSTING PROCEDURE

The cost of operations varies as to the type and duration of record, so standard units have been developed and assigned. The figures used are based on experience over the years and have been adopted as standards in the Western & Northern Region (Alberta, Saskatchewan, Manitoba, and N.W.T.), Inland Waters Directorate.



### 12-Month Discharge Station

Operates for the calendar year and defines the hydrologic regime under both ice cover and open water. A twelve-month discharge station has a factor unit of 1.00.

### 8-Month Discharge Station

Period of operation is March 1 to October 31 and is intended to define the period beginning with snowmelt runoff to freeze-up in the fall.

<u>Unit</u>	<u>Type of Station</u>
1.00	12-month discharge record
.75	8-month discharge record
.40	12-month water level record
.25	8-month water level record

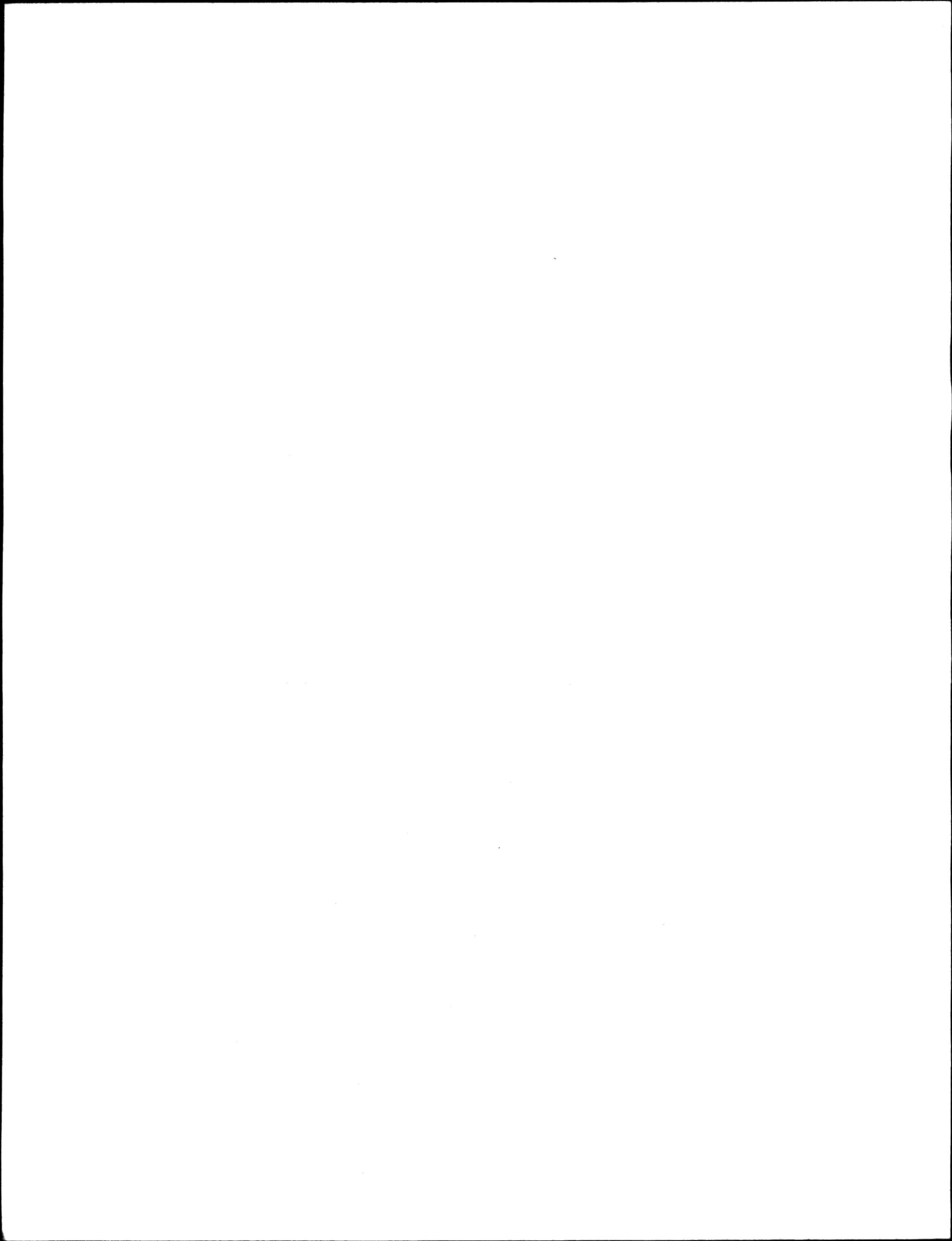
### Application of Procedure

EXAMPLE: Use one each of the above types of stations as a hydrometric program. Assume costs to be \$3,600 for Salaries and \$2,400 for Operations. Total \$6,000.

Tabulate as below and apply unit factor to arrive at a total for the network. Divide the units total of 2.40 into the Salaries and Operations totals to get the average cost for a 12-month discharge record station. Salary (1,500); Operations (1,000). Using the unit figures for the other types of stations, proceed to multiply through to get distribution costs.

Category	Months	No. of Stations	Factor	Units	Salaries	Operations	Total
Discharge	12	1	1.00	1.00	1,500	1,000	2,500
Discharge	8	1	.75	.75	1,125	750	1,875
Water Level	12	1	.40	.40	600	400	1,000
Water Level	8	1	.25	.25	375	250	625
				2.40	3,600	2,400	6,000

In computing the actual cost-sharing for the annual hydrometric and sediment program, Schedule A is used which includes all the information required to apply the above procedure. The annual cost-sharing computation sheets follow.



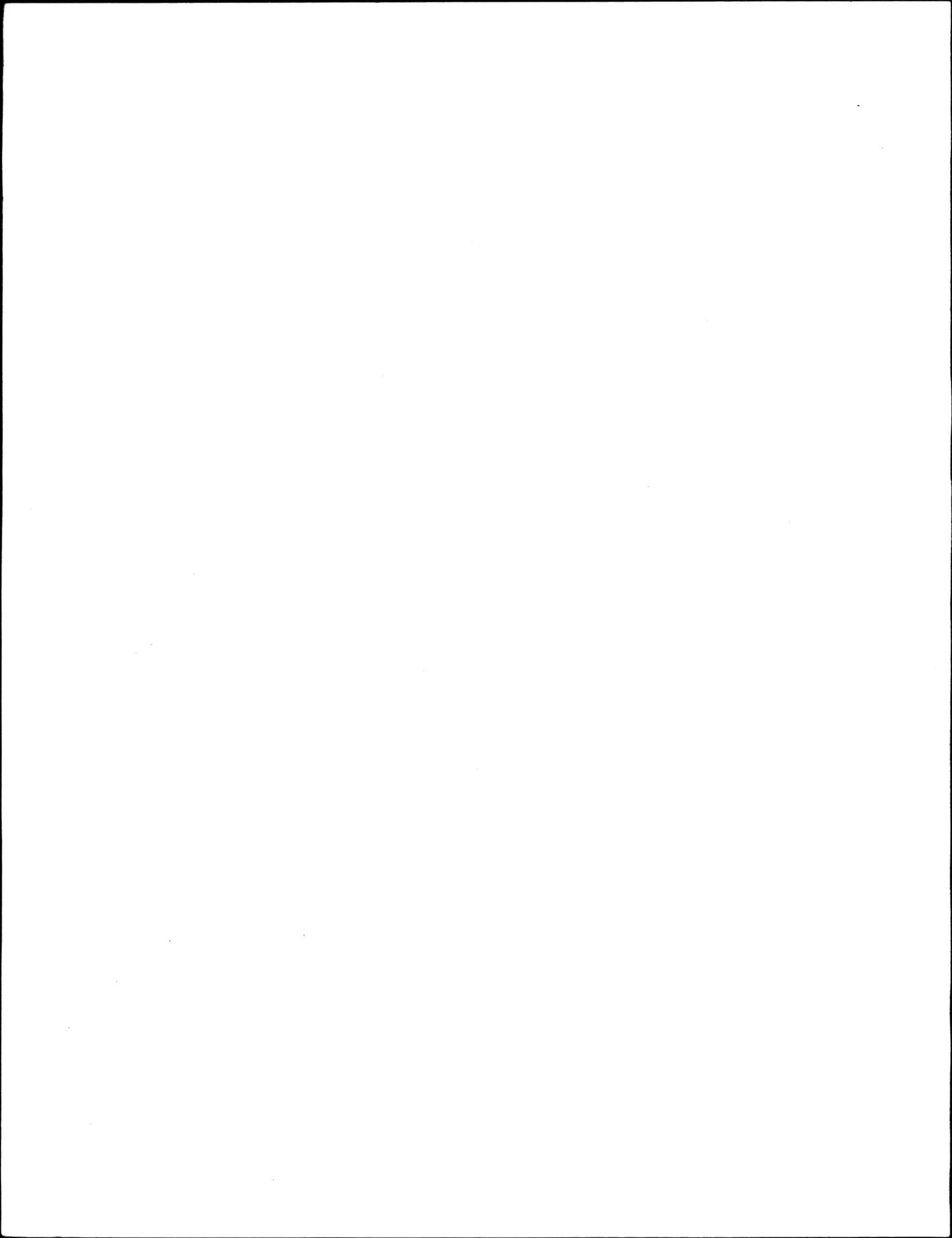


REMOTE STATIONS 1976/77 (classified as Remote for costing purposes)

		<u>Category</u>
1.	07NB006 Bench Mark Creek near Fort Smith	F1
2.	07NB007 Salt River below Peace Point Highway	F1
3.	07JE001 Peace River at Peace Point	F2 - Misc. Sed.
4.	07NB001 Slave River at Fitzgerald	F6 + Sediment
5.	07NB008 Dog River near Fitzgerald	F-P
6.	07CD005 Clearwater River above Christina River	F2
7.	07KE001 Birch River below Alice Creek	F6

All other remote stations operated in the northeastern portion of Alberta fall in the AOSERP area.

The first four stations are serviced by road from the N.W.T. sub-office at Fort Smith, with #5 (Dog River) requiring aircraft for most trips. Number 6 (Clearwater River) is not too far by boat from Fort McMurray. The Birch River is serviced by aircraft but some trips are charged to Water Quality sampling for AOSERP. Since there are so few stations, and for the reasons stated above, we have just included them with the Accessible Station listing for 76/77. An allowance for the N.W.T. Fort Smith sub-office costs in operating the first five stations has been made in the amount of Salaries \$10,000, and O & M \$6,000, and applied to the Alberta cost figures.

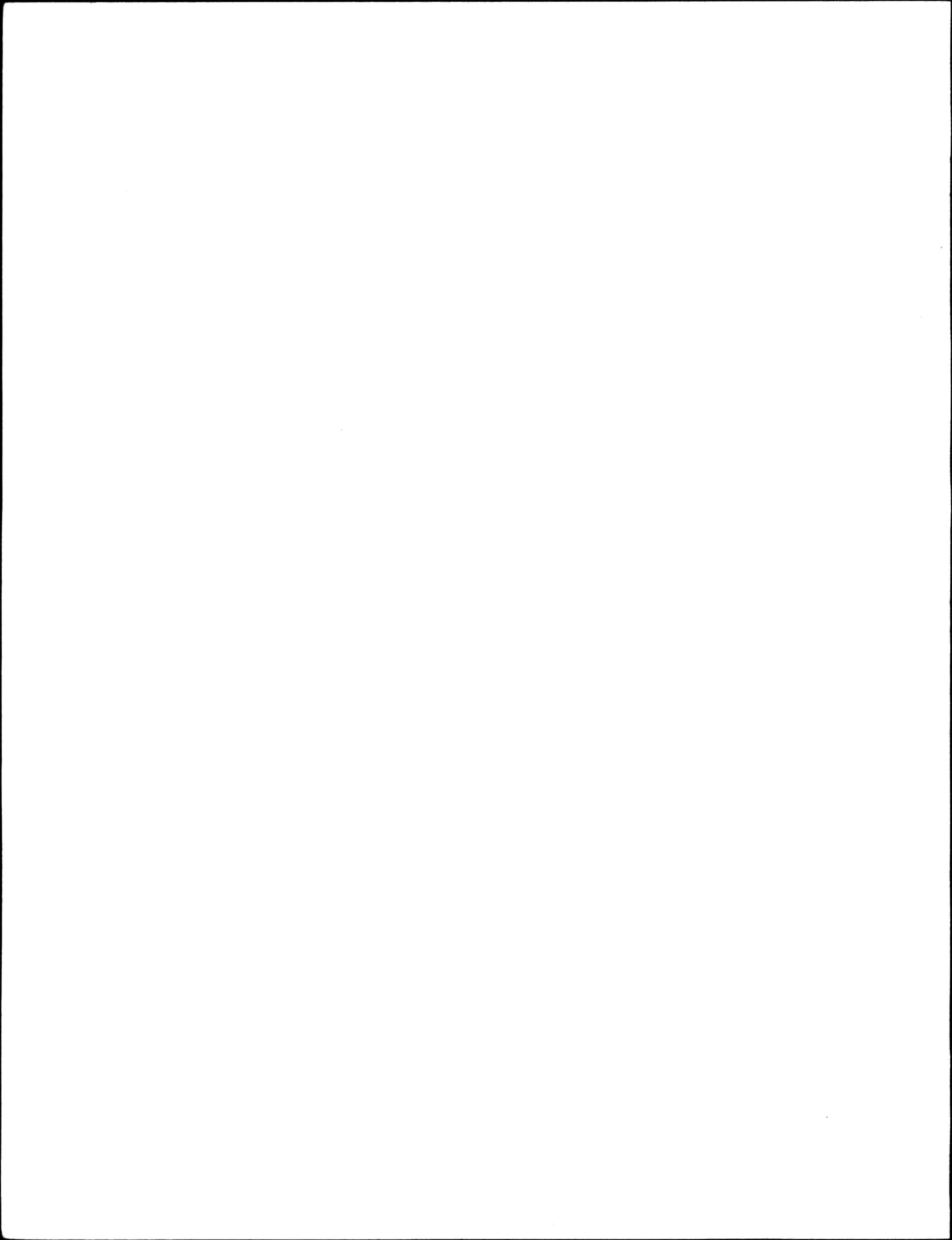


ALBERTA

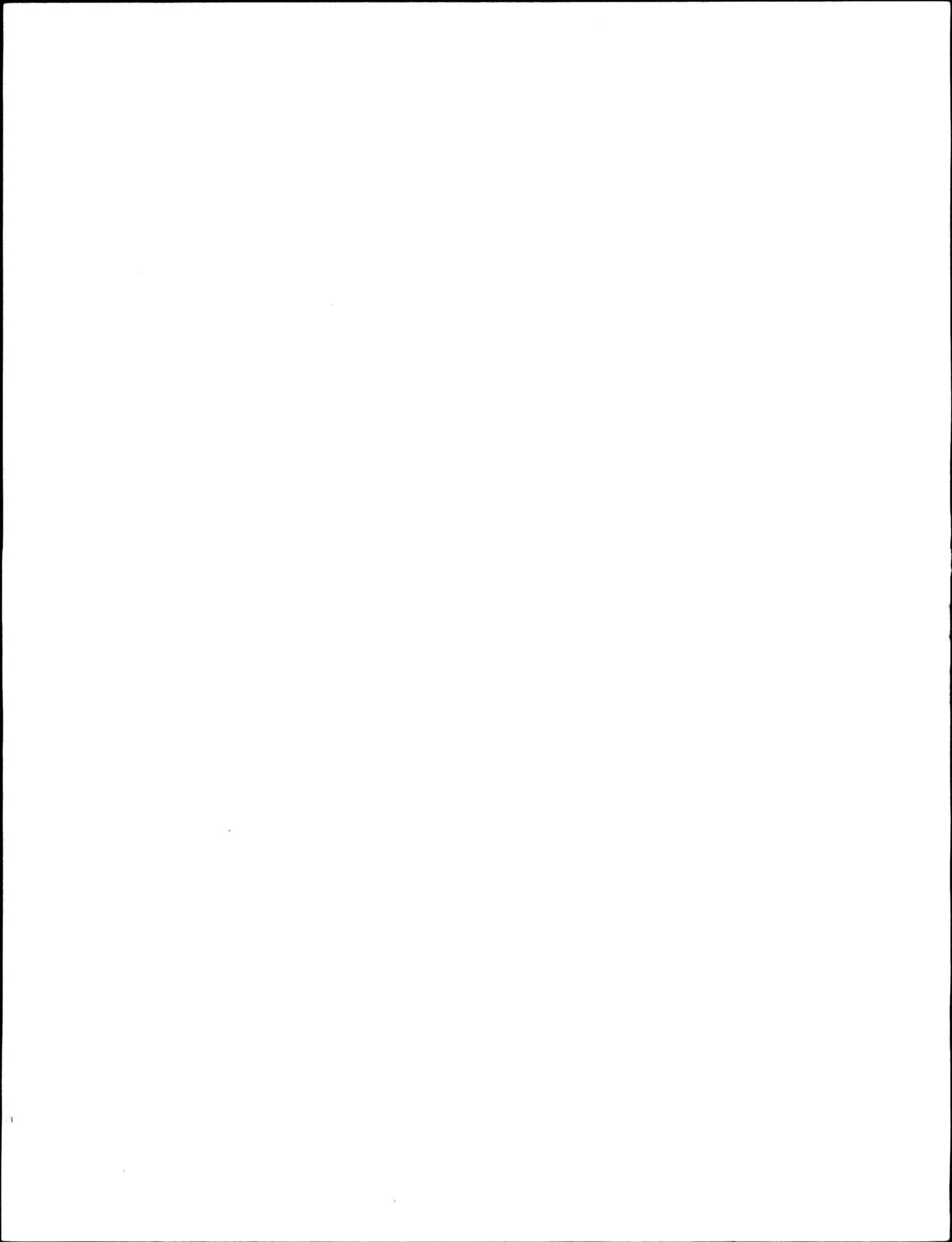
HYDROMETRIC COSTS 1976/77

CATEGORY	MONTHS	NO. OF STATIONS	WEIGHT FACTOR	WEIGHTED UNITS	SALARIES	OPERATIONS	TOTAL	SHARE		
								FEDERAL	PROVINCIAL	
					(1,423.90)	(713.04)	(2,136.94)			
ALBERTA HYDROMETRIC - <u>FEDERAL</u>	SALARIES	392,000;	O & M	196,300						
Flow	12 8	37 71	1.00 .75	37.00 56.25	52,684 80,094	26,382 40,108	79,066 120,202	79,066 120,202		
Water Level	12 8	6 -	.40 -	2.40 -	3,418	1,712	5,130	5,130		
Sub-Total		114		95.65	136,196	68,202	204,398	204,398		
<u>FEDERAL-PROVINCIAL</u>										
Flow	12 8	49 133	1.00 .75	49.00 99.75	69,771 142,034	34,940 71,126	104,711 213,160	52,356 106,580	52,356 106,580	
New 76/77	8	7(3)	.75	2.25	3,204	1,604	4,808	2,404	2,404	
Water Level	12 8	1 2	.40 .25	0.40 0.50	570 712	286 356	856 1,068	428 534	428 534	
Sub-Total		192		151.90	216,291	108,312	324,603	162,302	162,302	
<u>PROVINCIAL</u>										
Flow	12 8	2 21	1.00 .75	2.00 15.75	2,848 22,426	1,426 11,230	4,274 33,656		4,274 33,656	
New 76/77	8	6(4)	.75	3.00	4,272	2,139	6,411		6,411	
Spring Creek (Alta.)		5	--	--						
Water Level	12 8 8	- 27 1(1)	.25 .25	6.75 .25	9,611 356	4,813 178	14,424 534		14,424 534	
Sub-Total		62		27.75	39,513	19,786	59,299		59,299	
FED-PROV - FLOW	8	1 369	Spring Creek--Alberta operated--Credit Alberta 50% of				(2136.94)		1,068 220,532	
<u>SEDIMENT COSTS 1976/77</u>										
SEDIMENT - SALARIES	\$54,000;	O & M	\$12,600		(4,500.00)	(1,050.00)				
<u>FEDERAL</u>	12 8	9 -	1.00 --	9.00	40,500	9,450	49,950	49,950		
<u>FEDERAL-PROVINCIAL</u>	12 8	3 -	1.00 --	3.00	13,500	3,150	16,650	8,325	8,325	
Total		12		12.00	54,000	12,500	66,600	58,275	8,325	
Alberta - Hydrometric Share - Sediment Share - Capital Share - Gross Share Federal Share of PAD Net Alberta Share Use					\$220,532 8,325 73,095 \$301,952 70,850 \$231,102 \$231,100					

228,857  
70,850  
-----  
158,007



CATEGORY	MONTHS	NO. OF STATIONS	WEIGHT FACTOR	WEIGHTED UNITS	SALARIES	OPERATIONS	TOTAL	SHARE	
								FEDERAL	PROVINCIAL
					(4,268.44)	(2,337.56)	(6606)		
PAD Salaries	\$67,228	O & M	\$36,817	(104,045)					
<u>FEDERAL</u>									
Flow	12	2	1.00	2.00	8,537	4,675	13,212	13,212	
	8	1	.75	.75	3,201	1,753	4,954	4,954	
Water Level	12	3	.40	1.20	5,122	2,805	7,927	7,927	
	8	7	.25	1.75	7,470	4,091	11,561	11,561	
Sub-Total		13		5.70	24,330	13,324	37,654	37,654	
<u>FEDERAL-PROVINCIAL</u>									
Flow	12	5	1.00	5.00	21,342	11,688	33,030	16,515	16,515
	8	-	.75	--					
Water Level	12	7	.40	2.80	11,952	6,545	18,497	9,249	9,248
	8	9	.25	2.25	9,604	5,260	14,864	7,432	7,432
Sub-Total		21		10.05	42,898	23,493	66,391	33,196	33,195
TOTAL		42		15.75	67,228	36,817	104,045	70,850	33,195
<p>The total cost to Alberta Department of Environment for work carried out in the PAD area was \$162,711. Representatives of both governments inspected these costs and determined that approximately two-thirds of this cost were attributable to cost shareable operations (Actually \$104,045)</p> <p>The unit cost for PAD operations = <math>\frac{\\$104,045}{15.75} = \\$6,606.</math></p>									

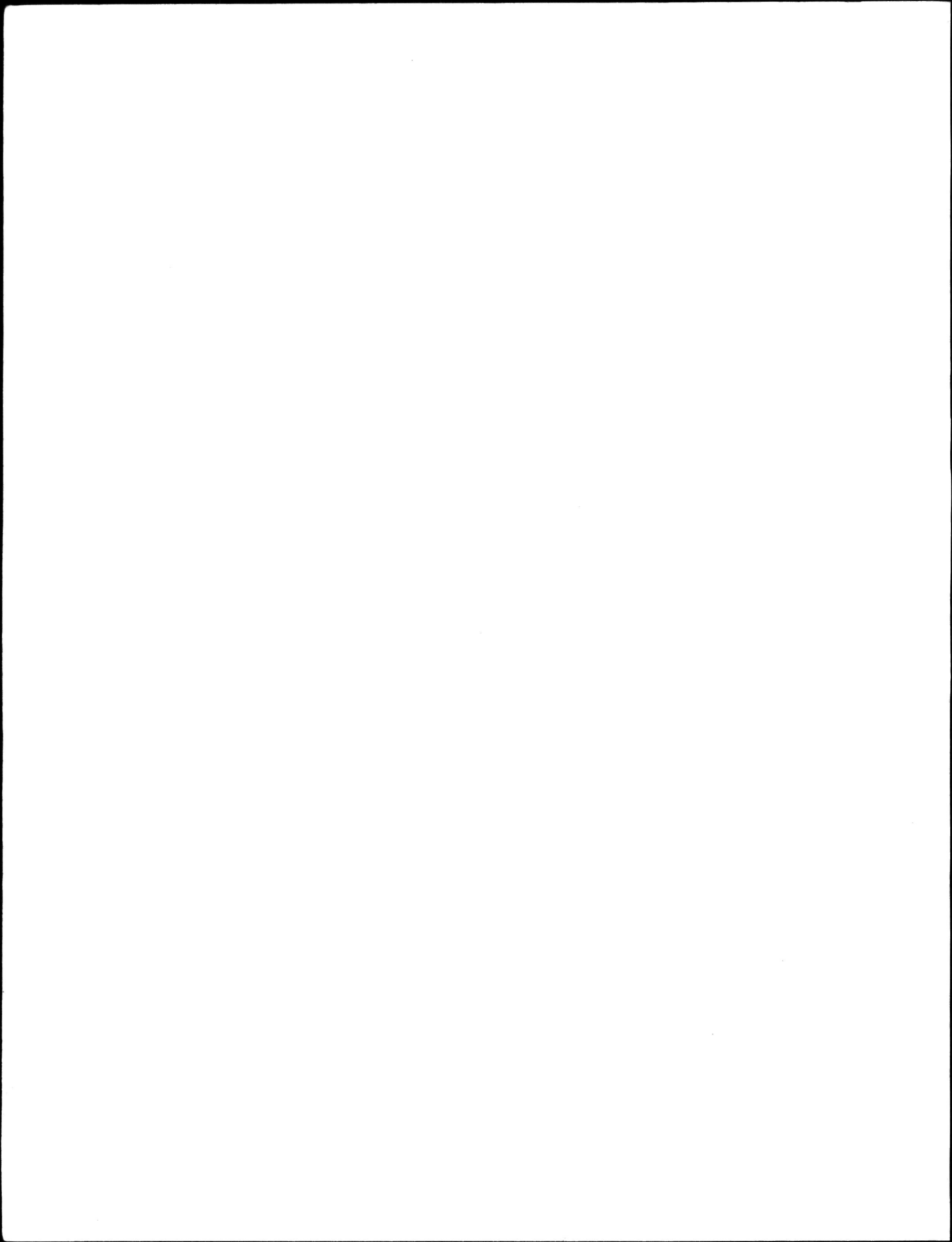


C = New Construction; M = Maintenance  
 C-1 & M-1 = Map location designation

1976-77

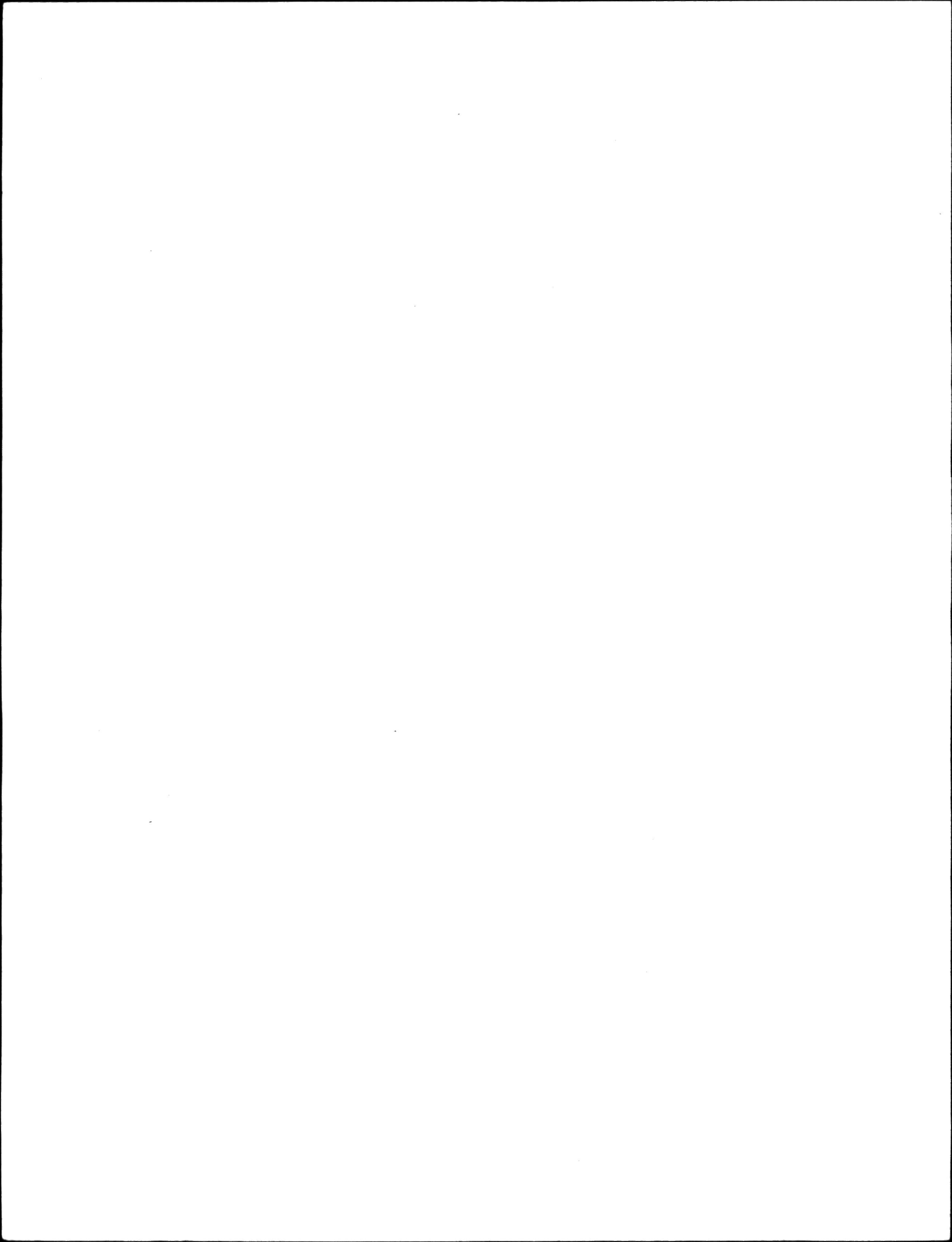
SHARE

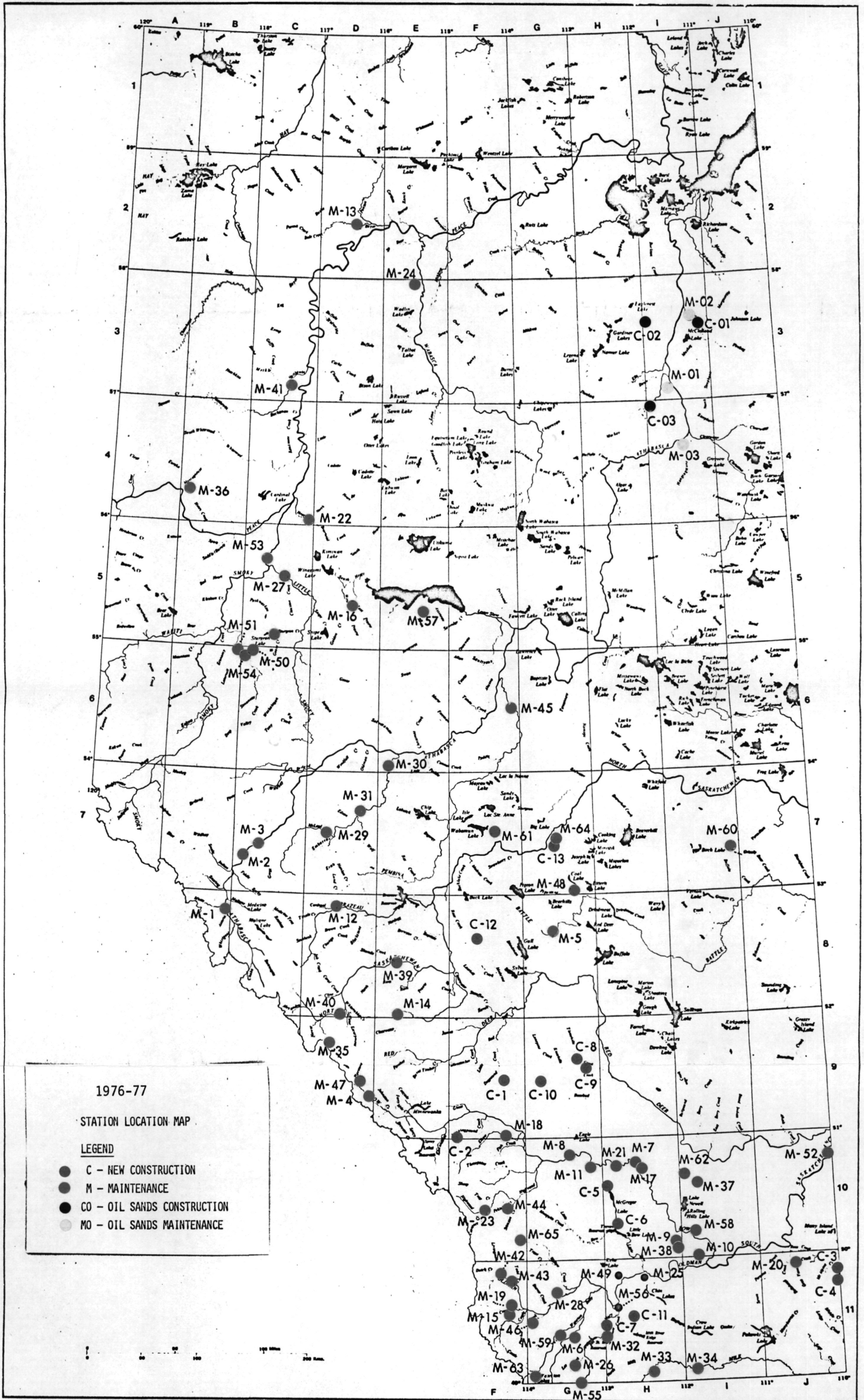
	Instru- mentation Federal	Construc- tion Cost	Federal	Provincial
<u>FEDERAL-PROVINCIAL</u>				
1. C-1 Beaverdam Creek near Cochrane (05CB005)	790	1,979		
2. C-2 Jumpingpound Creek (05BH013)	790	3,519		
3. C-8 Ray Creek near Innisfail (05CE010)	790	1,084		
4. C-9 Renwick Creek near Threehills (05CE011)	790	4,130		
5. C-10 Sheep Coulee near Carstairs (05CE019)	790	1,504		
6. C-12 Welsh Creek near Leedale (05CC010)	790	3,631		
7. C-13 Whitemud Creek near Ireton (05DF007)	790	4,085		
	5,530	19,932	9,966	9,966
1. M-5 Battle River near Ponoka (05FA001)		3,479		
2. M-7 Bow River below Bassano Dam (05BM004)		1,083		
3. M-8 Bow River below Carseland Dam (05BM002)		454		
4. M-12 Brazeau River below Cardinal River (05DD007)		5,216		
5. M-13 Boyer River near Ft. Vermilion (07JF002)		1,465		
6. M-14 Clearwater River above Limestone Cr. (05DB003)		351		
7. M-15 Crowsnest River at Frank (05AD008)		316		
8. M-16 East Prairie River near Enilda (07BF001)		1,332		
9. M-18 Elbow River at Bragg Creek (05BJ004)		1,507		
10. M-20 Gros Ventre Creek near Dunmore (05AH037)	790	3,561		
11. M-22 Heart River near Nampa (07HA003)	790	4,139		
12. M-23 Highwood River at Diebel's Ranch (05BL019)		42		
13. M-24 Jackpine Creek at Wadlin Lake Rd. (07JD003)		1,714		
14. M-27 Little Smoky River near Guy (07GH002)		654		
15. M-29 McLeod River above Embarras River (07AF002)		4,960		
16. M-30 McLeod River near Whitecourt (07AG004)		190		
17. M-36 Montagneuse River near Hines Creek (07FD012)		479		
18. M-39 North Saskatchewan River at Saunders (05DC002)		2,993		
19. M-43 Oldman River at Waldron's Corner (05AA023)		304		
20. M-44 Pekisko Creek near Longview (05BL023)		325		
21. M-46 Pincher Creek at Pincher Creek (05AA004)		76		
22. M-48 Pipestone Creek near Wetaskiwin (05FA012)		609		
23. M-51 Simonette River near Goodwin (07GF001)		1,431		
24. M-54 Spring Creek (Main) near Valleyview (07GF002)		3,792		
25. M-56 St. Mary River near Lethbridge (05AE006)		141		
26. M-57 Swan River near Kinuso (07BJ001)		2,225		
27. M-60 Vermilion River near Mannville (05EE001)		813		
28. M-61 Wabamun Creek near Duffield (05DE003)		537		
29. M-64 Whitemud Creek near Ellerslie (05DF006)		356		
30. M-65 Willow Creek above Chain Lakes (05AB028)		381		
	1,580	44,925	22,462	22,463
<u>PROVINCIAL</u>				
1. C-3 McAlpine Creek (East Fork) near Elkwater (05AH043)	790	3,273		
2. C-4 Mackay Creek near Grayburn Gap (05AH042)	790	3,037		
3. C-5 McGregor Lake Inflow near Milo (05AC024)	790	414		
4. C-6 McGregor-Travers Canal near Champion (05AC025)	790	91		
5. C-7 Pothole Turnout near Magrath	790	3,868		
6. C-11 Stirling Lake Outflow near Stirling Milk River Ridge Reservoir	790	1,283		
	--	--		
	4,740	11,966		11,966
1. M-6 Belly-St. Mary Diversion Canal (05AD021)		548		
2. M-10 Bow River Development Drain "A" near Hays (05AG004)		211		
3. M-19 Gold Creek near Frank (05AA030)		127		
4. M-21 Hammerhill Spillway near Gleichen (05BM005)		237		
5. M-25 Lateral 10 Spillway near Chin (05AG007)		942		
6. M-50 Rocky Creek near Valleyview (05GF006)		5,075		
		7,140		7,140









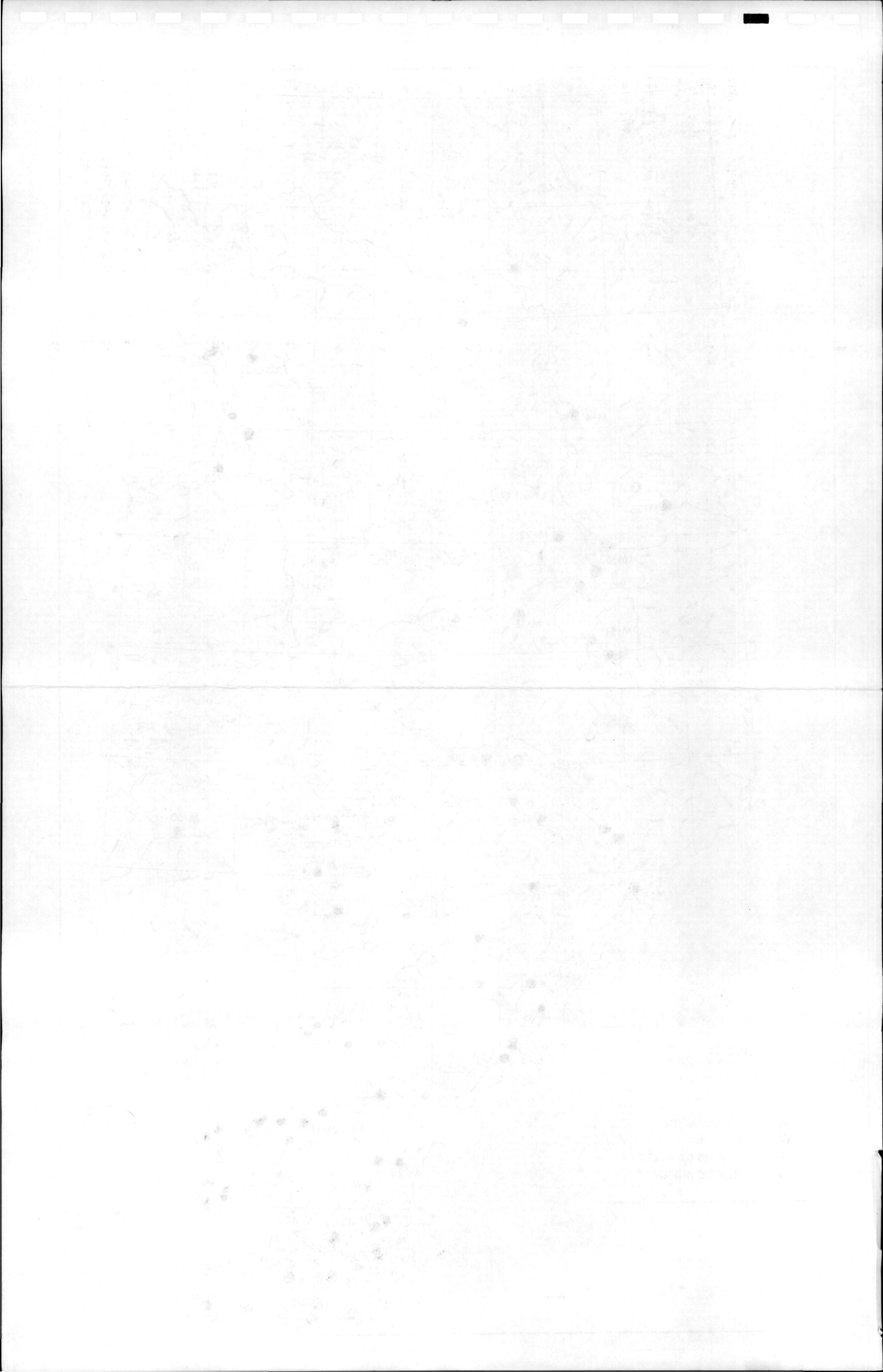


1976-77

STATION LOCATION MAP

LEGEND

- C - NEW CONSTRUCTION
- M - MAINTENANCE
- CO - OIL SANDS CONSTRUCTION
- MO - OIL SANDS MAINTENANCE



SCHEDULE D

This schedule provides a summary of the annual payment. The details of the calculations for operation and construction are available and have been jointly reviewed by officers of each party.

ANNUAL PAYMENT FOR 1976-77 TO BE PAID TO CANADA BY ALBERTA

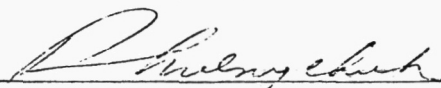
	<u>Operation</u>	<u>Construction</u>	<u>Total</u>
a) Streamflow and water level installations	\$140,000	\$85,000	\$225,000
b) Sediment installations	10,000		<u>10,000</u>
		ANNUAL PAYMENT	<u>\$235,000</u>

NOTE:

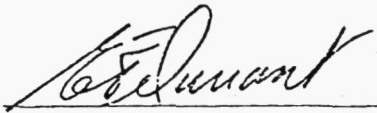
Where either party has more than one agency involved in financing the water quantity survey program, the annual payment table may be expanded to reflect each agency's portion of the ANNUAL PAYMENT.

Administrator for Province

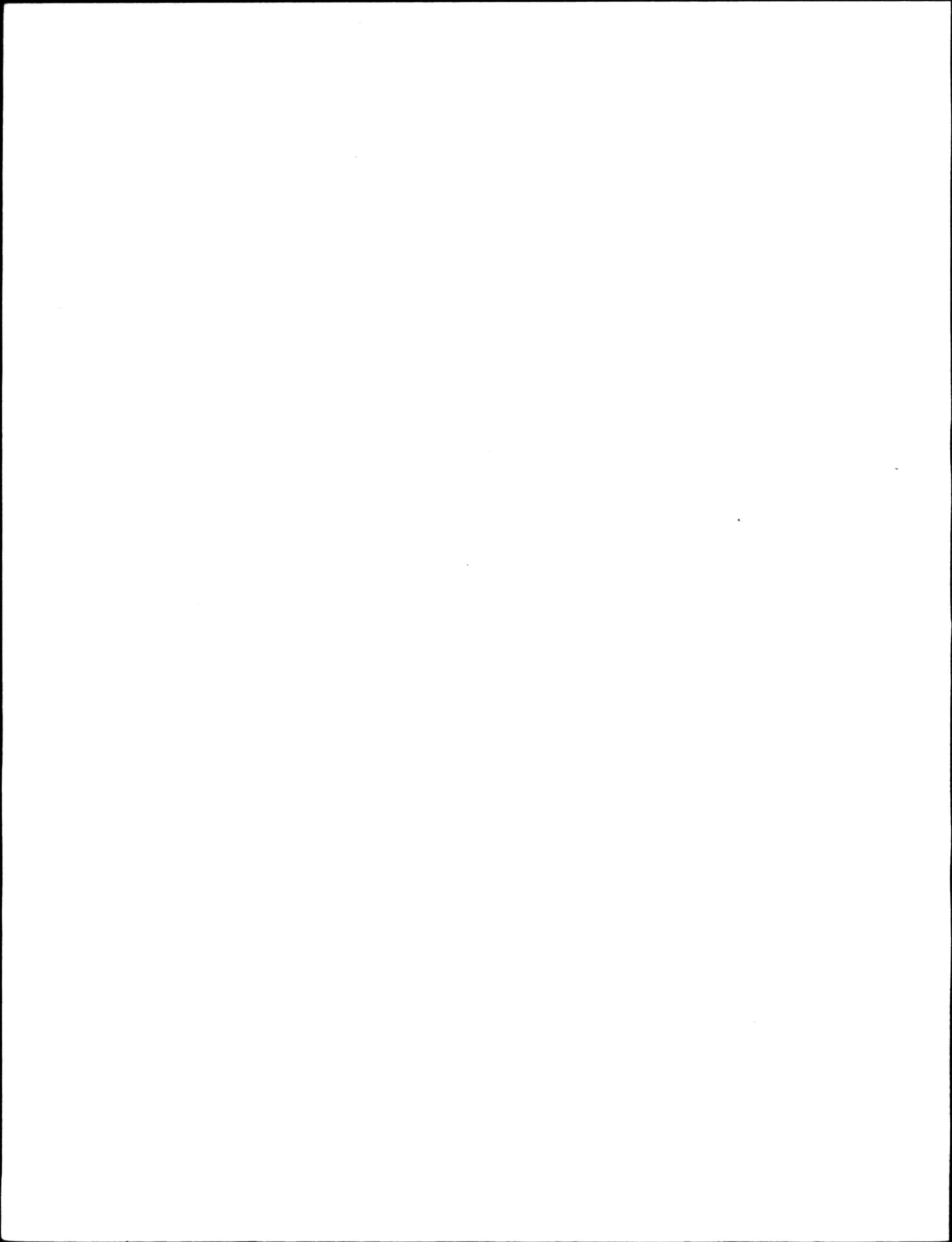
Administrator for Canada

  
\_\_\_\_\_  
(signature)

Assistant Deputy Minister  
Environmental Engineering Support Services  
ALBERTA DEPARTMENT OF THE ENVIRONMENT

  
\_\_\_\_\_  
(signature)

Regional Director of the  
Inland Waters Directorate  
ENVIRONMENT CANADA



ALBERTA

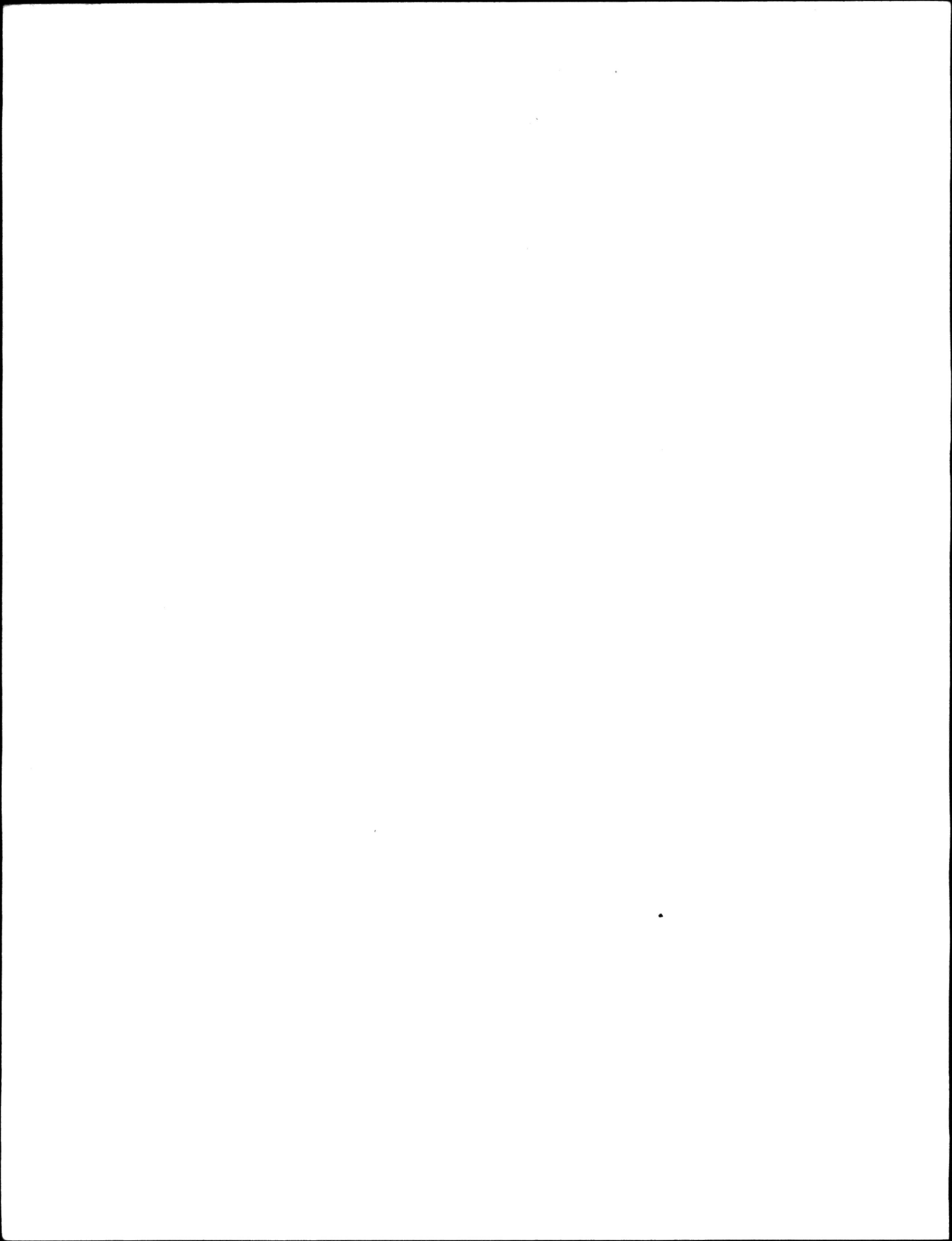
SUMMARY SHEET

COST OF OPERATING ALBERTA HYDROMETRIC NETWORK 1976/77

Schedule "B"

	No. of Stations	Total Cost	Share	
			Federal	Alberta
I. <u>HYDROMETRIC NETWORK</u>	363	588,300	366,700	220,532
Federal-Provincial - Spring Creek (operated by Alberta)   Credit \$1,068	1			
Provincial Stations (operated by Alberta)	5			
International Stations (operated by WSC, Regina)	10			
II. <u>SEDIMENT STATIONS</u>	12	66,500	58,275	8,325
Depreciation - Capital Costs				
Hydrometric Equipment		61,600	40,040	21,560
Sediment Equipment				
Construction Equipment				
II. <u>CONSTRUCTION -- CAPITAL COSTS</u>		138,370	86,835	51,535
	391	854,770	551,850	301,952
PAD PROJECT -- OPERATED BY ALBERTA	34 (+8)		70,850	

ALBERTA NET SHARE: 301,952 - 70,850 = 231,102      USE 231,100





SCHEDULE "D"

1976/77

SUMMARY OF ANNUAL PAYMENT

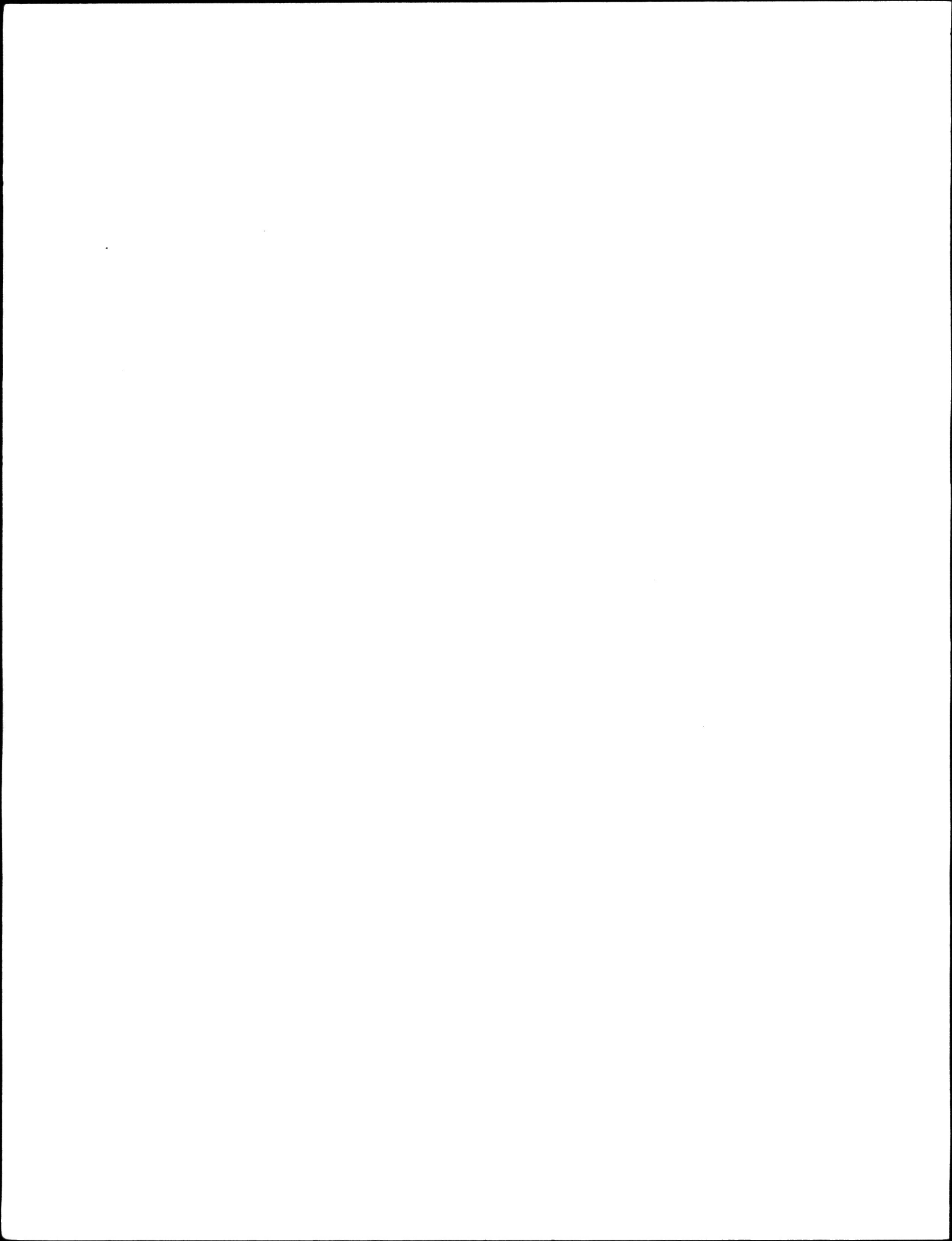
Figures in cost agreement signed for 1976/77:

	<u>Operation</u>	<u>Construction</u>	<u>Total</u>
a) Stream flow and water level installations	140,000	85,000	225,000
b) Sediment installations	10,000	--	<u>10,000</u>
			235,000

Costs as computed for 76/77:

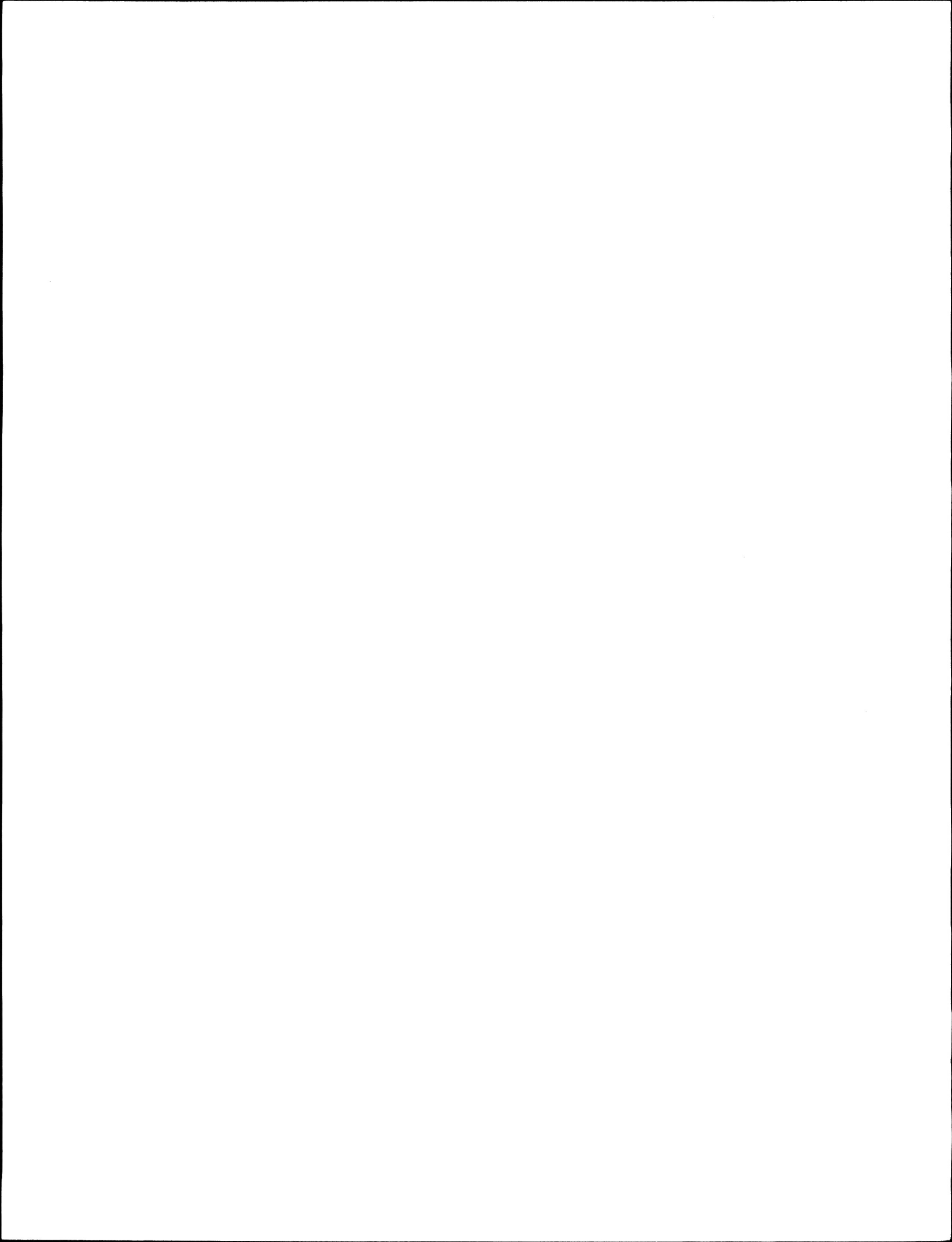
	<u>Operation</u>	<u>Construction</u>	<u>Total</u>
a) Stream flow and water level installations	149,682	73,095	222,777
b) Sediment installations	<u>8,325</u>	_____	<u>8,325</u>
	158,007	73,095	(231,102)
			231,100

The Construction figure includes all new construction, plus the maintenance and depreciation factors found in the Hydrometric and Sediment portions of Schedule B.



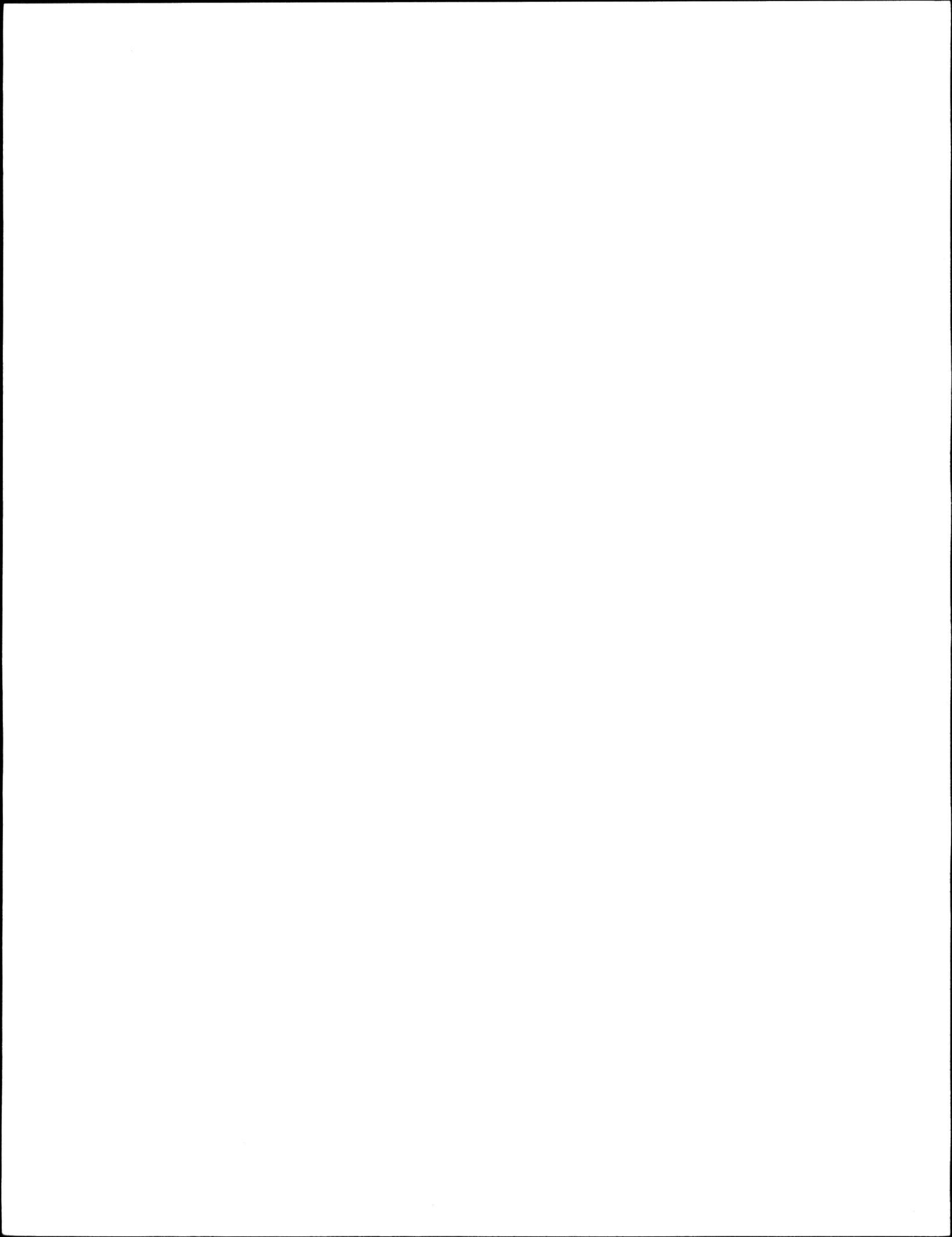
APPENDIX 1

SCHEDULE A -- 1976/77



SCHEDULE A  
OF  
MEMORANDUM OF AGREEMENT  
BETWEEN  
GOVERNMENT OF CANADA  
AND  
GOVERNMENT OF ALBERTA

1976-77

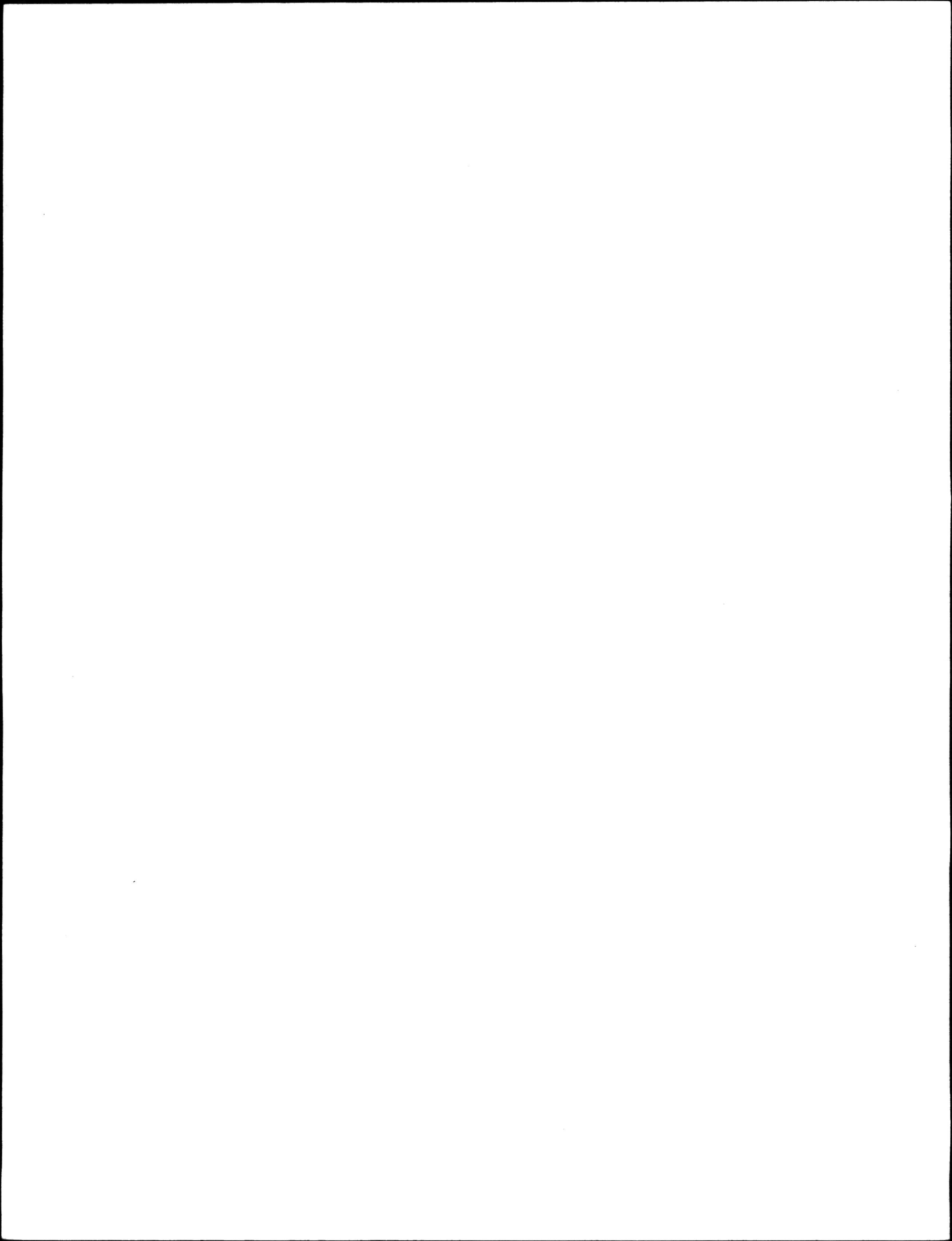


SCHEDULE A 1976/77

Modified for Cost Computations

Includes addition of new stations and changes in station classification during the year.

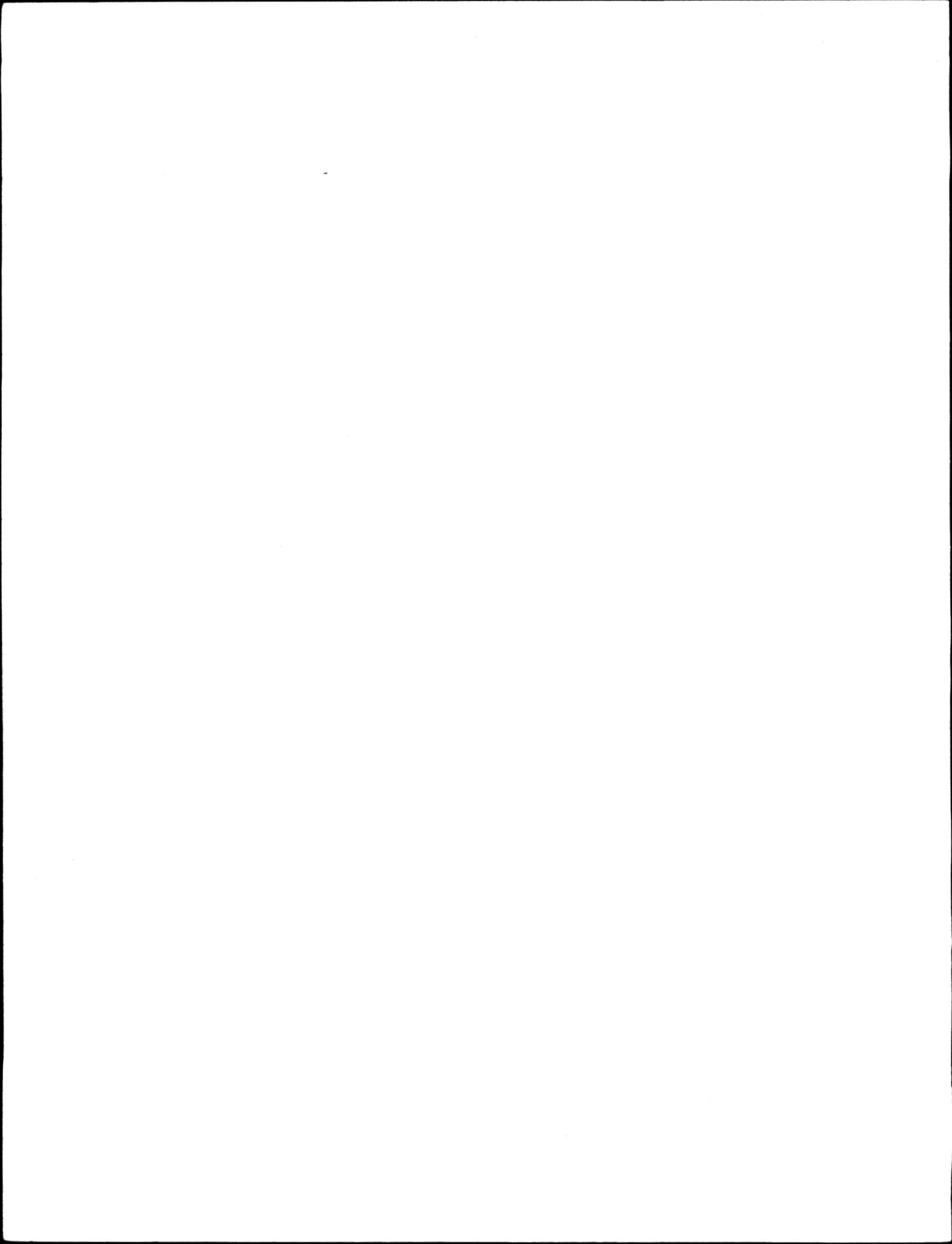
PAD stations assembled on one sheet for ease in computations and included with the cost computation sheet.



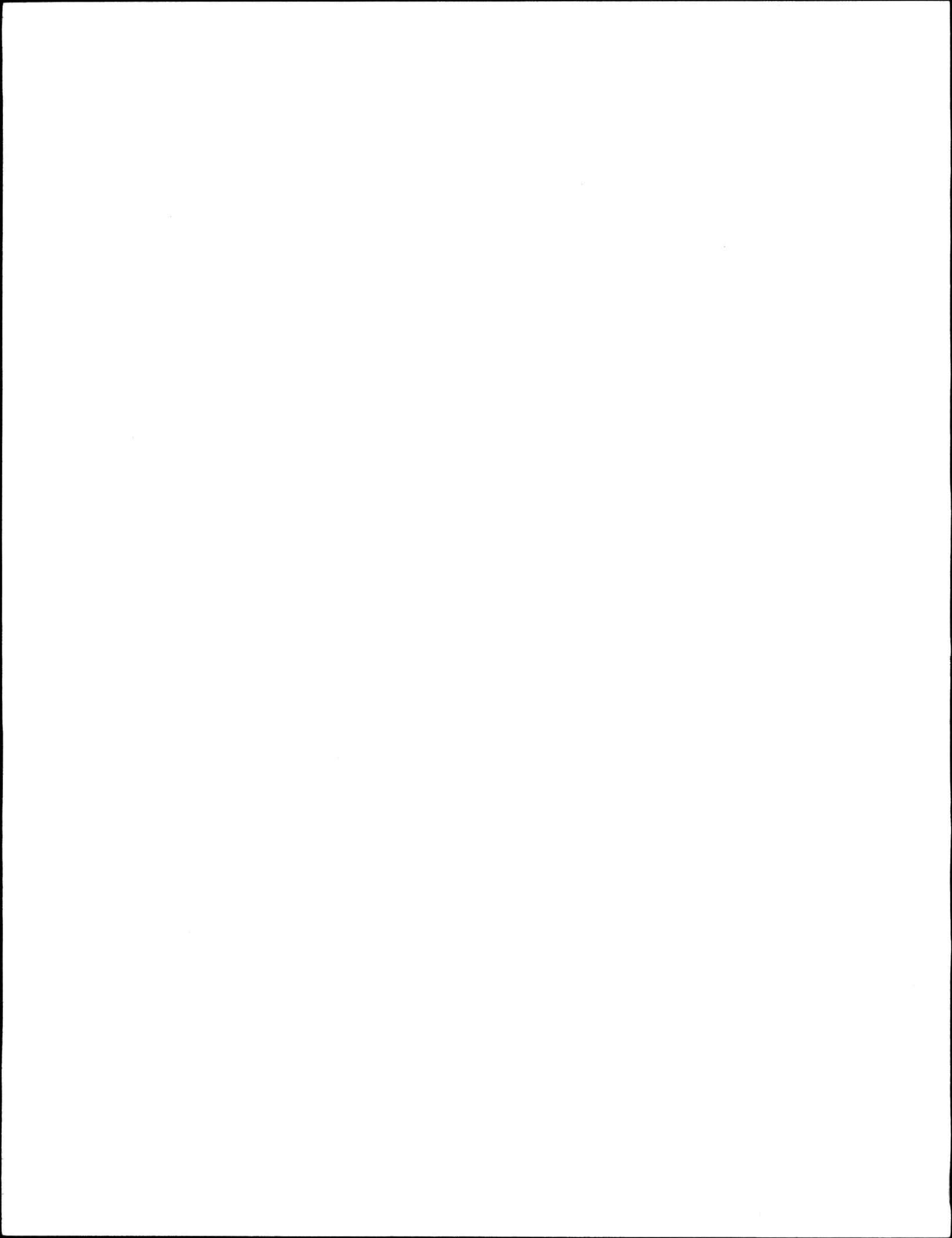


NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		<u>Operated by: Water Survey of Canada</u>							
1	07AA002	Athabasca River near Jasper	x				x		x
2	05BA007	Baker Creek near the Mouth	x			x			x
3	07NB006	Bench Mark Creek near Fort Smith	x				x	(x)	
4	05BB001	Bow River at Banff	x				x		x
5	05BA001	Bow River at Lake Louise	x				x		x
6	05BA008	Bow River below Hector Lake	x			x			x
7	05BB004	Brewster Creek near Banff	x			x			x
8	05BF019	Cabin Creek near Seebe	x		x		x		x
9	07AD003	Cache Percotte Creek near Hinton	x		x	x			x
10	07AD007	Cache Percotte Creek North Fork near Hinton	x			x			x
11	05BD005	Cascade River above Lake Minnewanka	x			x			x
12	07AF004	Deerlick Creek near Hinton	x		x	x			x
13	05AB027	East Streeter Spring No. 1 near Nanton	x				x		x
14	07AF005	Eunice Creek near Hinton	x		x	x			x
15	05BB003	Forty Mile Creek near Banff	x			x			x
16	05BA006	Johnston Creek near the Mouth	x			x			x
17	07AA004	Maligne River near Jasper	x				x		x
18	05BF016	Marmot Creek Main Stem	x		x		x		x
19	05AB016	McIntosh Spring No. 1 near Nanton	x				x		x
20	05BF020	Middle Fork Creek in Cirque near Seebe	x				x		x
21	05BF017	Middle Fork Creek near Seebe	x		x		x		x
22	05AB026	Middle Streeter Spring No. 1 near Nanton	x				x		x
23	05AB035	Middle Streeter Spring No. 2 near Nanton	x				x		x
24	07AA001	Miette River near Jasper	x				x		x
25	05DA007	Mistaya River near Saskatchewan Crossing	x				x		x
26	05DA008	Peyto Creek at Pevto Glacier	x			x			x
27	05BA002	Pipestone River near Lake Louise	x			x			x
28	05BB005	Redearth Creek near the Mouth	x			x			x
29	07NB007	Salt River below Peace Point Highway	x				x	(x)	
30	05DA010	Silverhorn Creek near the Mouth	x				x		x
31	07AB002	Snake Indian River near the Mouth	x			x			x
32	05BC001	Spray River at Banff	x				x		x
33	05AB030	Streeter Creek Main Stem near Nanton	x			x			x
34	07AA007	Sunwapta River at Athabasca Glacier	x			x			x
35	05BF018	Twin Creek near Seebe	x		x		x		x
36	07AF003	Wampus Creek near Hinton	x		x	x			x
37	05AB025	West Streeter Spring No. 1 near Nanton	x			x			x
38	07AA009	Whirlpool River near the Mouth	x			x			x
39	07AD004	Whiskeyjack Creek near Hinton	x		x	x			x

449

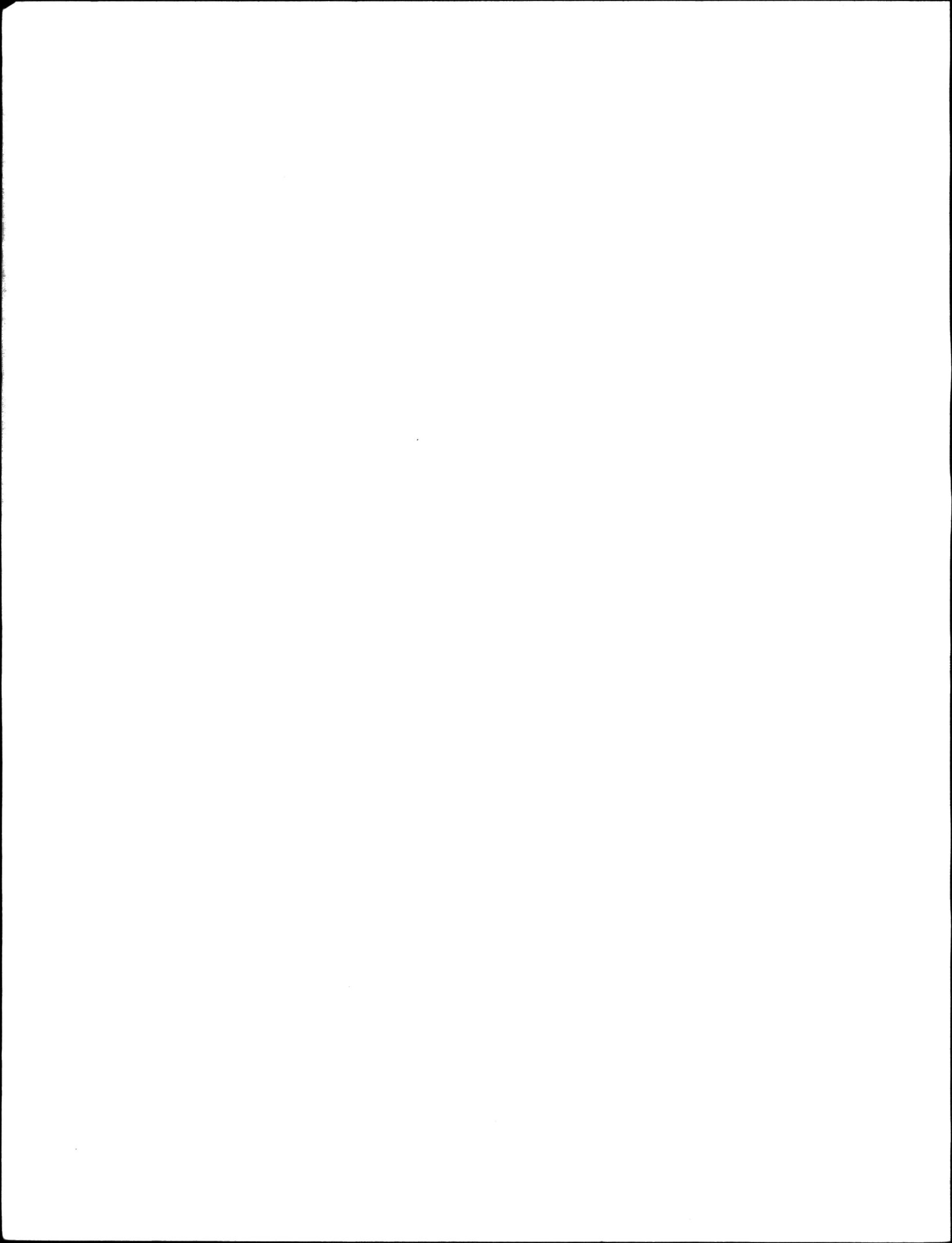


O.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		<u>Operated by: Water Survey of Canada</u>							
1	05BN010	Antelope Coulee Spillway	x			x			x
2	05AD038	Battersea Drain near the Mouth	x			x			x
3	06AD006	Beaver River at Cold Lake Reserve	x				x		x
4	05AG008	Bountiful Coulee near Cranford	x			x			x
5	05AH001	Boxelder Creek near Walsh (Sask.)	x			x			x
6	05BN009	B.R.D. Drain K near Vauxhall	x			x			x
7	05AC004	B.R.D. Main Canal	x			x			x
8	05BM012	Cairn Hill Spillway near the Mouth	x			x			x
9	05AE026	Canadian St. Mary Canal near Spring Coulee	x			x			x
10	07CD005	Clearwater River above Christina River	x			x		(x)	
11	05FA016	Coal Lake Reservoir near Wetaskiwin		x				x	x
12	06AF002	Cold Lake at Cold Lake		x				x	x
13	05BM008	Crowfoot Creek near Cluny	x			x			x
14	05AJ003	Drain S-10 near Bow Island	x			x			x
15	05AJ002	Drain S-4 near Grassy Lake	x			x			x
16	05AG025	Drain T-11 near Fincastle	x			x			x
17	05AG023	Drain T-2 near Taber	x			x			x
18	05CJ003	E.I.D. East Branch Canal near Lathom	x			x			x
19	05CJ001	E.I.D. North Branch Canal near Bassano	x			x			x
20	05CJ004	E.I.D. Springhill Canal near Lathom	x			x			x
21	05AG003	Expanse Coulee near the Mouth	x			x			x
22	05AB016	L.N.I.D. Canal at Menzaghies Bridge	x			x			x
23	05BL015	Little Bow Canal at High River	x				x		x
24	05AC012	Little Bow River below Travers Dam	x			x			x
25	05AC023	Little Bow River near the Mouth	x			x			x
26	05AE021	M.I.D. Canal near Spring Coulee	x			x			x
27	05CJ007	Matzhiwin Creek above Ware Coulee	x			x			x
28	05CH009	Natural Flow A near Pollockville	x			x			x
29	05CJ011	Natural Flow B near Princess	x			x			x
30	05BN024	Natural Flow C near Bow City	x			x			x
31	05BN006	New West Coulee near the Mouth	x			x			x
32	05CJ006	Onetree Creek near Patricia	x			x			x
33	05AD037	Piyami Drain near Picture Butte	x			x			x
34	05AE016	Pothole Creek at Russell's Ranch	x			x			x
35	05CK004	Red Deer River near Bindloss	x		x		x		x
36	05BN007	Ronalane Wasteway near Hays	x			x			x
37	05CE005	Rosebud River at Redland	x			x			x
38	05AH005	Seven Persons Creek at Medicine Hat	x			x			x
39	05AK001	South Saskatchewan River at Highway No. 41	x		x		x		x
40	05AE025	St. Mary Reservoir near Spring Coulee		x			x		x
41	05BM009	Twelve Mile Coulee Spillway near Carseland	x			x			x
42	05BN002	Twelve Mile Creek near Cecil	x			x			x
43	05AD013	U.I.D. Canal near Hill Spring	x			x			x
44	07GE001	Wapiti River near Grande Prairie	x				x		x
45	05CJ008	Ware Coulee above Matzhiwin Creek	x			x			x
46	05AD026	Waterton Reservoir		x			x		x
47	05BM003	W.I.D. Canal near Chestermere Lake	x			x			x

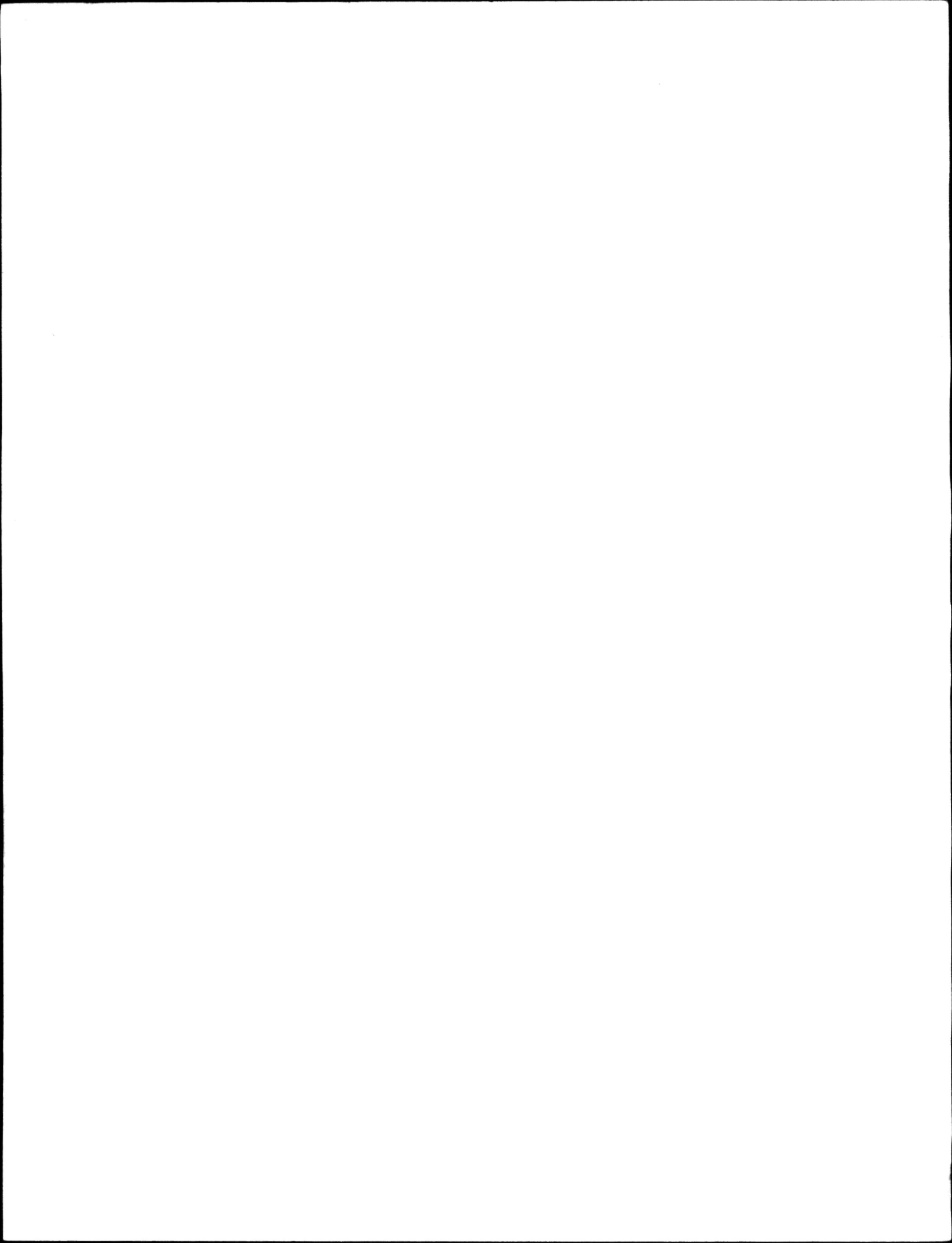


## SUBCLASSIFICATION: International Commitments (3)

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		Operated by: Water Survey of Canada							
1	11AB094	Bare Creek Reservoir near Elkwater 1		x		x			x
2	11AA028	Bear Creek near International Boundary	x			x			x
3	05AD005	Belly River near Mountain View	x				x		x
4	11AB097	Cressday Reservoir near Cressday 2		x		x			x
5	11AB092	Greasewood Reservoir near Elkwater 3		x		x			x
6	11AB098	Jaydot Reservoir near Jaydot 4		x		x			x
7	05AE036	Lake Sherburne		x			x		x
8	05AE002	Lee Creek at Cardston	x				x		x
9	11AB104	Massy Reservoir near Elkwater 5		x		x			x
10	11AB091	Michele Reservoir near Elkwater 6		x		x			x
11	11AB009	Middle Creek near Alberta Boundary 7	x			x			x
12	11AA031	Milk River at Eastern Crossing of International Boundary	x			x			x
13	11AA005	Milk River at Milk River	x				x		x
14	11AA025	Milk River at Western Crossing of International Boundary	x			x			x
15	11AA029	Miners Coulee near International Boundary	x			x			x
16	11AB099	Mitchell Reservoir near Elkwater 8		x		x			x
17	05AD017	Mountain View Irrigation District Canal	x			x			x
18	11AA032	North Fork Milk River above St. Mary Canal	x			x			x
19	11AA001	North Milk River near International Boundary	x			x			x
20	11AB090	Reesor Reservoir near Elkwater 9		x		x			x
21	05AE005	Rolph Creek near Kimball	x			x			x
22	11AA026	Sage Creek at Q Ranch near Wild Horse	x			x			x
23	11AA027	Sage Creek near International Boundary	x			x			x
24	11AA033	South Fork Milk River near Babb	x			x			x
25	05AE029	St. Mary Canal at St. Mary Crossing	x			x			x
26	05AE027	St. Mary River at International Boundary	x				x		x
27	05AE033	Swiftcurrent Creek at Sherburne	x			x			x
28	11AB086	Walburger Coulee below Diversions 10	x			x			x
29	05AD025	Waterton Lake at Waterton Park		x			x		x
30	05AD003	Waterton River near Waterton Park	x				x		x
		10 Stations Operated by Saskatchewan District							

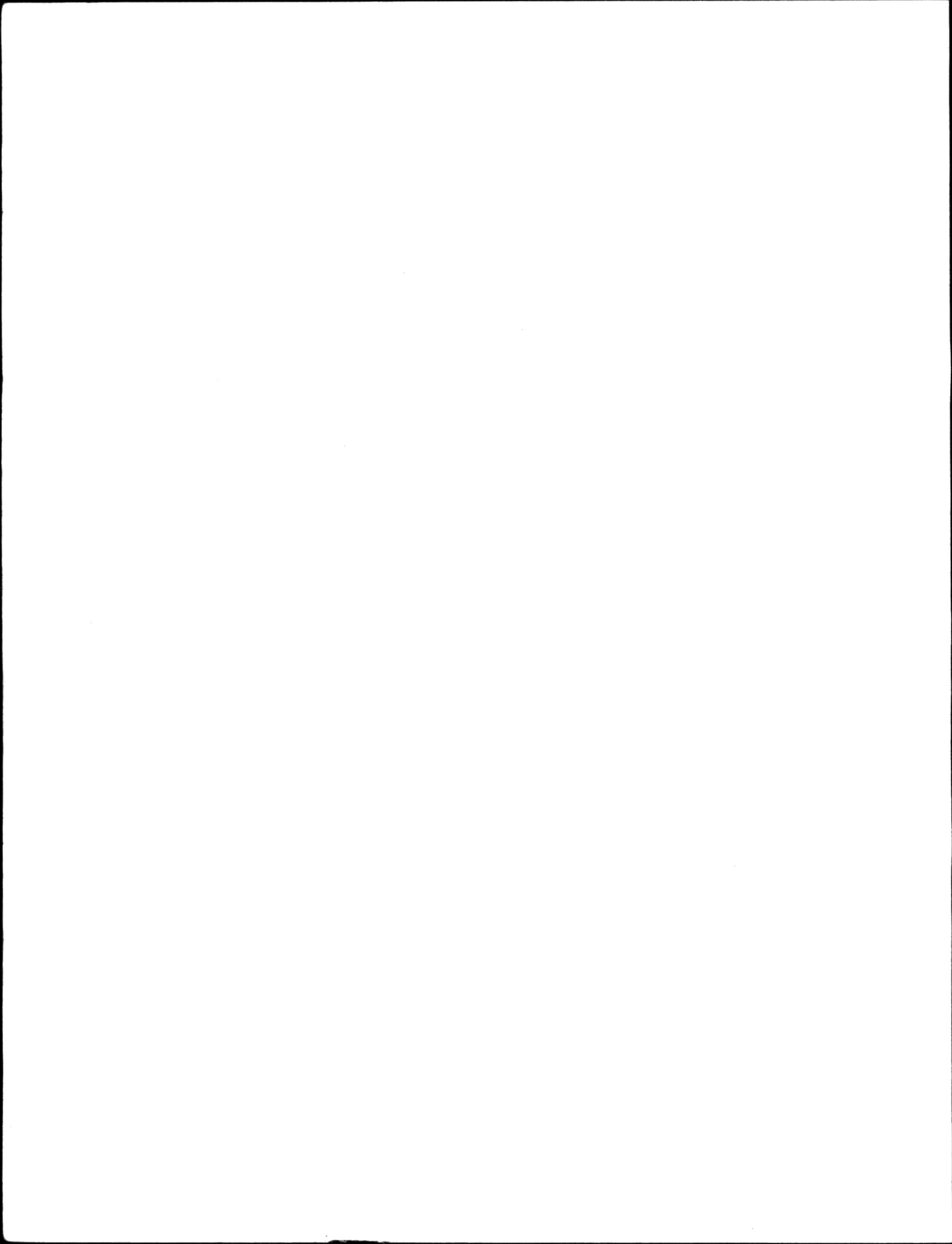


NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		<u>Operated by: Water Survey of Canada</u>							
1	07KE001	Birch River below Alice Creek	x					x	
2	07KC001	Peace River at Peace Point	x					x	
3	07NB001	Slave River at Fitzgerald	x		x			x	
		<u>Operated by: Alberta</u>							
1	07KF005	Baril Lake at Centre of Lake		x		x			x
2	07KF006	Chenal des Quatre Fourches below Four Forks	Misc. x					x	x
3	07KF008	Chenal des Quatre Fourches at High Rock Tower		x		x			x
4	07KF007	Chenal des Quatre Fourches at Rangers Cabin		x		x			x
5	07KF001	Chenal des Quatre Fourches at Quatre Fourches		x		x			x
6	07KF002	Lake Claire near Outlet to Prairie River		x				x	x
7	07KF003	Mamawi Lake at <del>Poplar Island</del> Old Dog Camp		x				x	x
8	07KF010	Mamawi Lake Channel at Dog Camp	Misc. x					x	x
9	07KC005	Peace River below Chenal des Quatre Fourches		x				x	x
10	07KC004	Peace River at Sweetgrass Landing		x		x			x
11	07KF014	Prairie River near Lake Claire	Misc. x			x			x
12	07NA006	Revillon Coupe above Peace River		x		x			x
13	07NA005	Revillon Coupe at Rangers Cabin		x		x			x





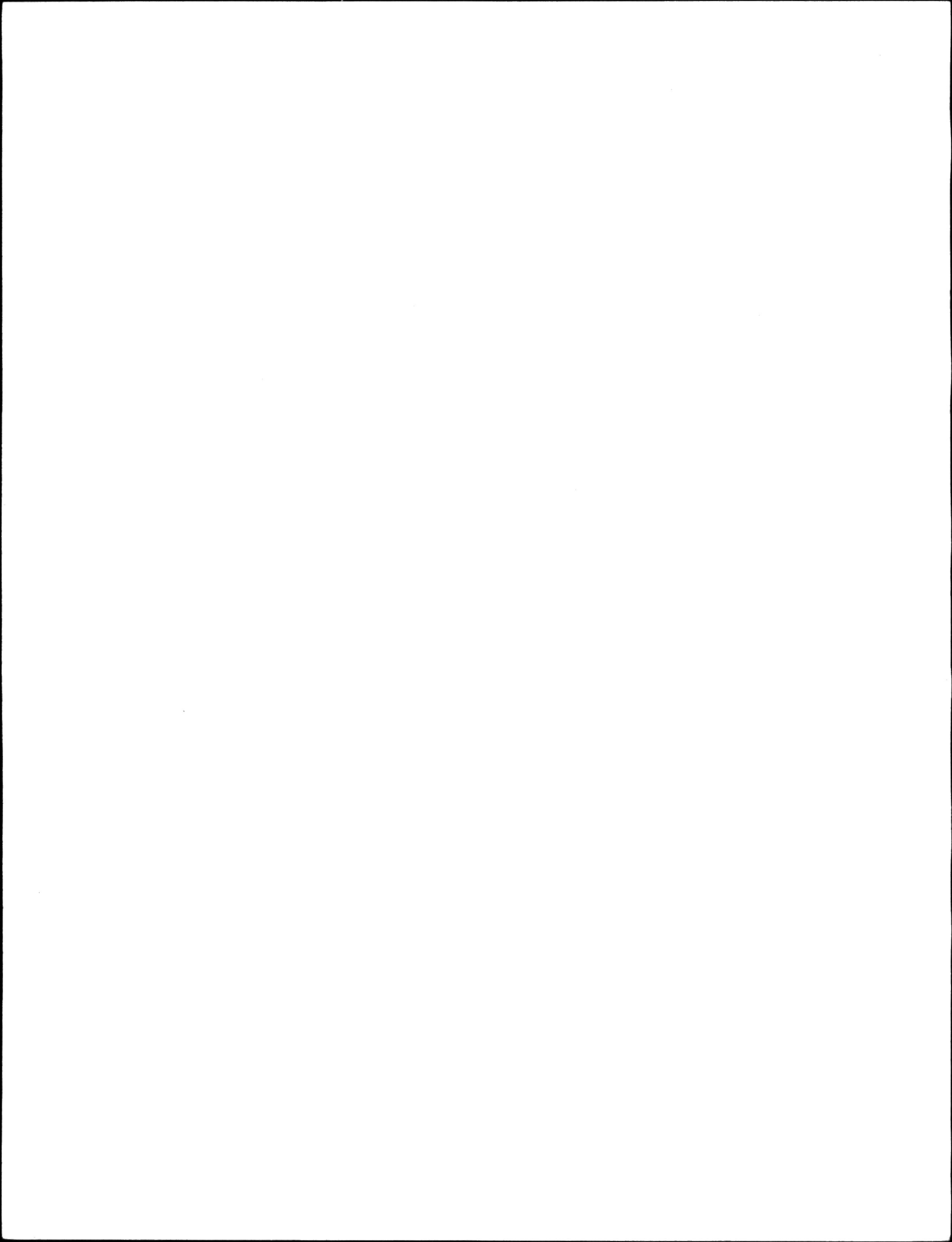
NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		<u>Operated by: Water Survey of Canada</u>							
1	07AD002	Athabasca River at Hinton	x				x		x
2	05BH004	Bow River at Calgary	x		x		x		x
3	05BL024	Highwood River near the Mouth	x		x		x		x
4	07BK006	Lesser Slave River at Highway No. 2	x				x		x
5	07AG001	McLeod River near Wolf Creek	x				x		x
6	05DF001	North Saskatchewan River at Edmonton	x				x		x
7	05DA009	North Saskatchewan River at Whirlpool Point	x		x		x		x
8	07HC001	Notikewin River at Manning	x				x		x
9	05AD007	Oldman River near Lethbridge	x		x		x		x
10	07HA001	Peace River at Peace River	x		x		x		x
11	07BC002	Pembina River at Jarvie	x				x		x
12	05CC002	Red Deer River at Red Deer	x		x		x		x
13	07GJ001	Smoky River at Watino	x				x		x
14	07JD002	Wabasca River at Wadlin Lake Road	x				x		x



MAJOR CLASSIFICATION: FEDERAL-PROVINCIAL

SUBCLASSIFICATION:

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
Operated by: Water Survey of Canada									
1	05CK005	Alkali Creek near the Mouth	x			x			x
2	05EB016	Amisk Creek near Shonts	x			x			x
3	06AA002	Amisk River at Highway No. 36	x			x			x
4	07BE001	Athabasca River at Athabasca	x				x		x
5	07AE001	Athabasca River near Windfall	x				x		x
6	05ED002	Atimoswe Creek near Elk Point	x			x			x
7	05FC001	Battle River near Forestburg	x			x			x
8	05FA001	Battle River near Ponoka	x				x		x
9	05AB013	Beaver Creek near Brocket	x			x			x
10	05EB015	Beaverhill Creek near the Mouth	x			x			x
11	07GD001	Beaverlodge River near Beaverlodge	x			x			x
12	06AA001	Beaver River near Goodridge	x			x			x
13	05AD002	Belly River near Stand Off	x				x		x
14	05CH008	Berry Creek near Rose Lynn	x			x			x
15	05CH007	Berry Creek near the Mouth	x			x			x
16	05FC002	Bigknife Creek near Gadsby	x			x			x
17	05CC001	Blindman River near Blackfalds	x				x		x
18	05CC008	Blindman River near Bluffton	x			x			x
19	05CK001	Blood Indian Creek near the Mouth	x			x			x
20	05BM004	Bow River below Bassano Dam	x			x			x
21	05BM002	Bow River below Carseland Dam	x				x		x
22	05BE006	Bow River below Ghost Dam	x				x		x
23	05BE004	Bow River near Seebe		x			x		x
24	05BN012	Bow River near the Mouth	x				x		x
25	07JF002	Boyer River near Fort Vermilion	x			x			x
26	05DD007	Brazeau River below Cardinal River	x			x			x
27	05DD004	Brown Creek at Forestry Road	x			x			x
28	05FE002	Buffalo Creek at Highway No. 41	x			x			x
29	05CG002	Bullpound Creek near Hanna	x			x			x
30	05CG003	Bullpound Creek near the Mouth	x			x			x
31	05DD008	Cardinal River near the Mouth	x			x			x
32	05AA028	Castle River at Ranger Station	x			x			x
33	05AA022	Castle River near Beaver Mines	x				x		x
34	05BL022	Cataract Creek near Forestry Road	x				x		x
35	05AB037	Chain Lakes Reservoir near Nanton		x		x			x
36	07OC001	Chinchaga River near High Level	x				x		x
37	07AH002	Christmas Creek near Blue Ridge	x			x			x
38	07FD009	Clear River near Bear Canyon	x			x			x
39	05DB003	Clearwater River above Limestone Creek	x			x			x
40	05DB006	Clearwater River near Dovercourt	x				x		x
41	07BB010	Connor Creek near Rochfort Bridge	x			x			x
42	05AA008	Crowsnest River at Frank	x				x		x
43	07GB001	Cutbank River near Grande Prairie	x			x			x
44	07BC006	Dapp Creek at Highway No. 44	x			x			x
45	05CA003	Deer Creek Main Stem	x			x			x
46	07NB008	Dog River near Fitzgerald	x				x	(x)	x
47	05FA018	Driedmeat Creek near the Mouth	x			x			x
48	07BH003	Driftpile River near Driftpile	x			x			x
49	07BK007	Driftwood River near the Mouth	x				x		x
50	05AD010	Drywood Creek near the Mouth	x				x		x
51	05AD016	Drywood Creek near Twin Butte	x			x			x
52	05AA026	Dutch Creek near the Mouth	x			x			x
53	07BF001	East Prairie River near Enilda	x			x			x
54	05BJ006	Elbow River above Elbow Falls	x				x		x
55	05BJ004	Elbow River at Bragg Creek	x			x			x
56	07FD013	Eureka River near Worsley	x			x			x
57	05BK001	Fish Creek near Priddis	x			x			x
58	07AH001	Freeman River near Fort Assiniboine	x			x			x
59	05BG001	Ghost River near Cochrane	x				x		x
60	07GE003	Grande Prairie Creek near Sexsmith	x			x			x
61	05AH037	Gros Ventre Creek near Dunmore	x			x			x
62	07OB003	Hay River near Meander River	x			x			x
63	07HA003	Heart River near Nampa	x				x		x
64	05BL019	Highwood River at Diebel's Ranch	x			x			x
65	05BL021	Highwood River below Picklejar Creek	x			x			x
66	05BL009	Highwood River near Aldersyde	x				x		x
67	07FD011	Hines Creek above Gerry Lake	x			x			x
68	07FD008	Hines Creek near Fairview	x			x			x
69	07GG003	Iosegun River near Little Smoky	x			x			x
70	05FB002	Iron Creek near Hardisty	x			x			x
71	06AC001	Jackfish Creek near La Corey	x			x			x
72	07JD003	Jackpine Creek at Wadlin Lake Road	x			x			x
73	05CA002	James River near Sundre	x			x			x
74	05BH009	Jumpingpound Creek near the Mouth	x				x		x
75	07GB002	Kakwa River near Grande Prairie	x			x			x
76	07HF002	Keg River at Highway No. 35	x			x			x
77	07GE002	Kleskun Hills Main Drain near Grande Prairie	x			x			x
78	05CE002	Kneehills Creek near Drumheller	x			x			x
79	07CJ001	Lafond Creek near Red Earth Creek	x			x			x

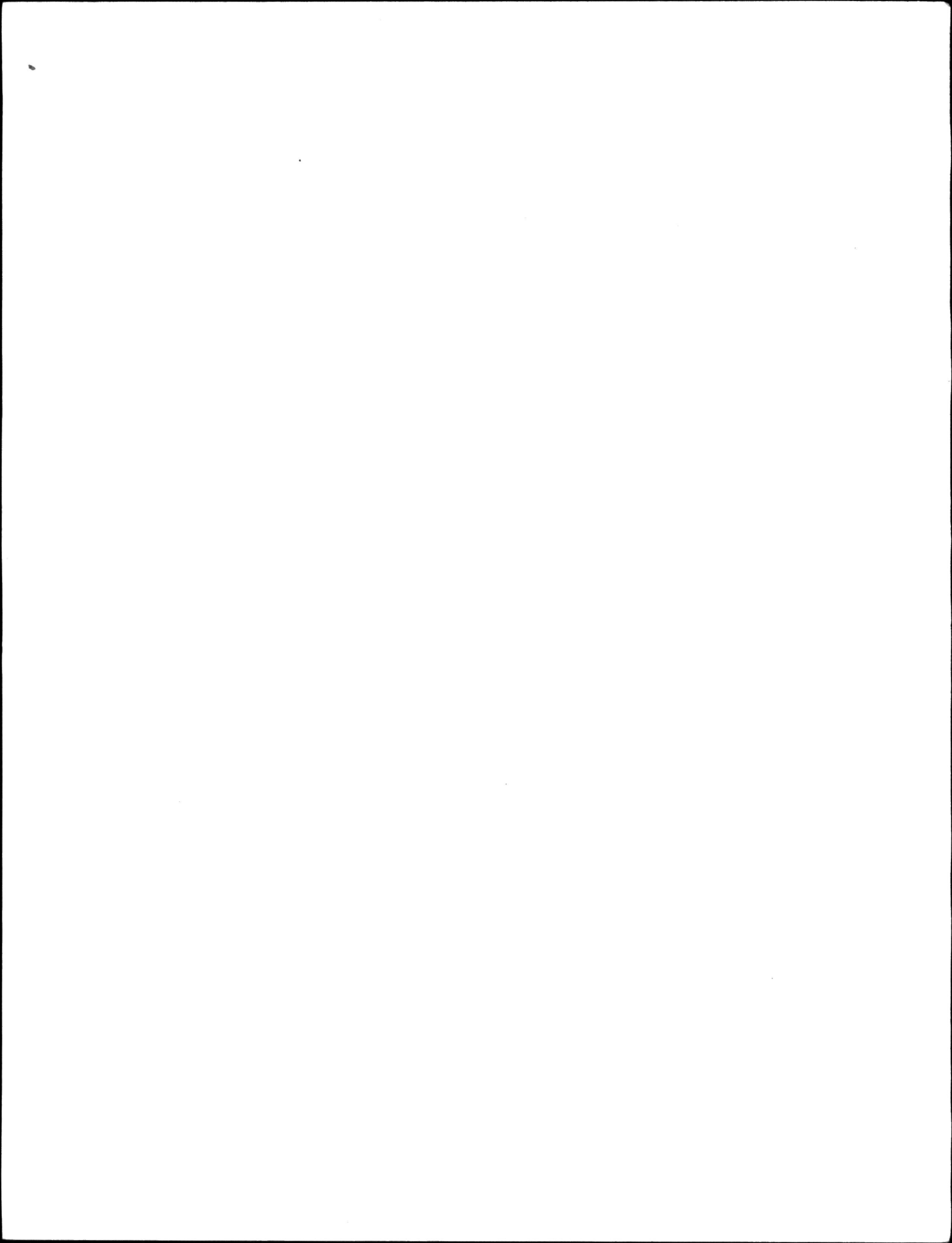


MAJOR CLASSIFICATION: FEDERAL-PROVINCIAL

SUBCLASSIFICATION:

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
80	07BJ002	Lesser Slave Lake at Faust		x		x			x
81	05AC003	Little Bow River at Carmangay	x			x			x
82	07BB005	Little Paddle River near Mayerthorpe	x			x			x
83	05CB001	Little Red Deer River near the Mouth	x				x		x
84	05CB002	Little Red Deer River near Water Valley	x			x			x
85	07GG002	Little Smoky River at Little Smoky River	x			x			x
86	07GH002	Little Smoky River near Guy	x				x		x
87	05CC009	Lloyd Creek near Bluffton	x			x			x
88	07BB003	Lobstick River near Styal	x				x		x
89	07BA003	Lovett River near the Mouth	x			x			x
90	05AH002	Mackay Creek at Walsh	x			x			x
91	05AF010	Manyberries Creek at Brodin's Farm	x			x			x
92	05FA014	Maskwa Creek No. 1 above Bearhills Lake	x			x			x
93	07AF002	McLeod River above Embarras River	x				x		x
94	07AG004	McLeod River near Whitecourt	x			x			x
95	05AB029	Meadow Creek near the Mouth	x			x			x
96	07OB005	Meander River at Outlet Hutch Lake	x			x			x
97	05CC007	Medicine River near Eckville	x				x		x
98	05FC003	Meeting Creek near the Mouth	x			x			x
99	05AA011	Mill Creek near the Mouth	x			x			x
100	05GA003	Monitor Creek near Monitor	x			x			x
101	07FD012	Montagneuse River near Eureka River	x			x			x
102	07GA002	Muskeg River near Grande Cache	x				x		x
103	05EC004	Namepi Creek near the Mouth	x			x			x
104	05DD009	Nordegg River at Sunchild Road	x				x		x
105	05DC011	North Ram River at Forestry Road	x			x			x
106	05DC002	North Saskatchewan River at Saunders	x			x			x
107	05DE006	North Saskatchewan River near Lodgepole	x			x			x
108	05DC001	North Saskatchewan River near Rocky Mountain House	x			x			x
109	05BH003	Nose Creek at Calgary	x			x			x
110	05AA024	Oldman River near Brocket	x		x		x		x
111	05AA023	Oldman River at Waldron's Corner	x				x		x
112	07BB006	Paddle River at Barrhead	x			x			x
113	07BB004	Paddle River near Rochfort Bridge	x			x			x
114	05BM007	Parflesh Creek near Chancellor	x			x			x
115	07FD003	Peace River at Dunvegan Bridge	x			x			x
116	07HF001	Peace River at Fort Vermilion	x			x			x
117	05AH041	Peigan Creek near Pakowki Road	x			x			x
118	05BL023	Pekisko Creek near Longview	x			x			x
119	07BA001	Pembina River below Paddy Creek	x			x			x
120	07BB002	Pembina River near Entwistle	x				x		x
121	05FA017	Pigeon Lake Creek near the Mouth	x			x			x
122	05AA004	Pincher Creek at Pincher Creek	x			x			x
123	07CA005	Pine Creek near Grassland	x			x			x
124	05FA012	Pipestone Creek near Wetaskiwin	x			x			x
125	07JF003	Ponton River above Boyer River	x			x			x
126	05AD035	Prairie Blood Coulee near Lethbridge	x			x			x
127	05DB005	Prairie Creek below Lick Creek	x			x			x
128	05DB002	Prairie Creek near Rocky Mountain House	x				x		x
129	05AA027	Racehorse Creek near the Mouth	x			x			x
130	05DC006	Ram River near the Mouth	x			x			x
131	07BA002	Rat Creek near Cynthia	x			x			x
132	05CB004	Raven River near Raven	x				x		x
133	05CA004	Red Deer River above Panther River	x			x			x
134	05CE001	Red Deer River at Drumheller	x		x		x		x
135	05CA009	Red Deer River below Burnt Timber Creek	x				x		x
136	05EC003	Redwater River near Redwater	x			x			x
137	05FD005	Ribstone Creek near Czar	x			x			x
138	05FD001	Ribstone Creek near Edgerton	x			x			x
139	07DP002	Richardson River near the Mouth	x				x		x
140	05UE007	Rose Creek near Alder Flats	x			x			x
141	05CE006	Rosebud River below Carstairs Creek	x			x			x
142	05AH003	Ross Creek near Irvine	x			x			x
143	07FD006	Saddle River near Woking	x			x			x
144	07AH003	Sakwatamau River near Whitecourt	x			x			x
145	06AB001	Sand River near the Mouth	x			x			x
146	07BK005	Saulteaux River near Spurfield	x			x			x
147	07BK009	Sawridge Creek near Slave Lake	x			x			x
148	05BL014	Sheep River at Turner Valley	x				x		x
149	07BC004	Shoal Creek near Linaria	x			x			x
150	05DA002	Siffleur River near the Mouth	x			x			x
151	07GF001	Simonette River near Goodwin	x				x		x
152	07GA001	Smoky River above Hells Creek	x				x		x
153	05GA008	Sounding Creek near Oyen	x			x			x
154	07OA001	Sousa Creek near High Level	x			x			x
155	05AJ001	South Saskatchewan River at Medicine Hat	x				x		x
156	05AE006	St. Mary River near Lethbridge	x				x		x
157	07OB004	Steen River at Steen River	x			x			x
158	05BL007	Stimson Creek near Pekisko	x			x			x
159	05ED001	Stony Creek near Saddle Lake	x			x			x

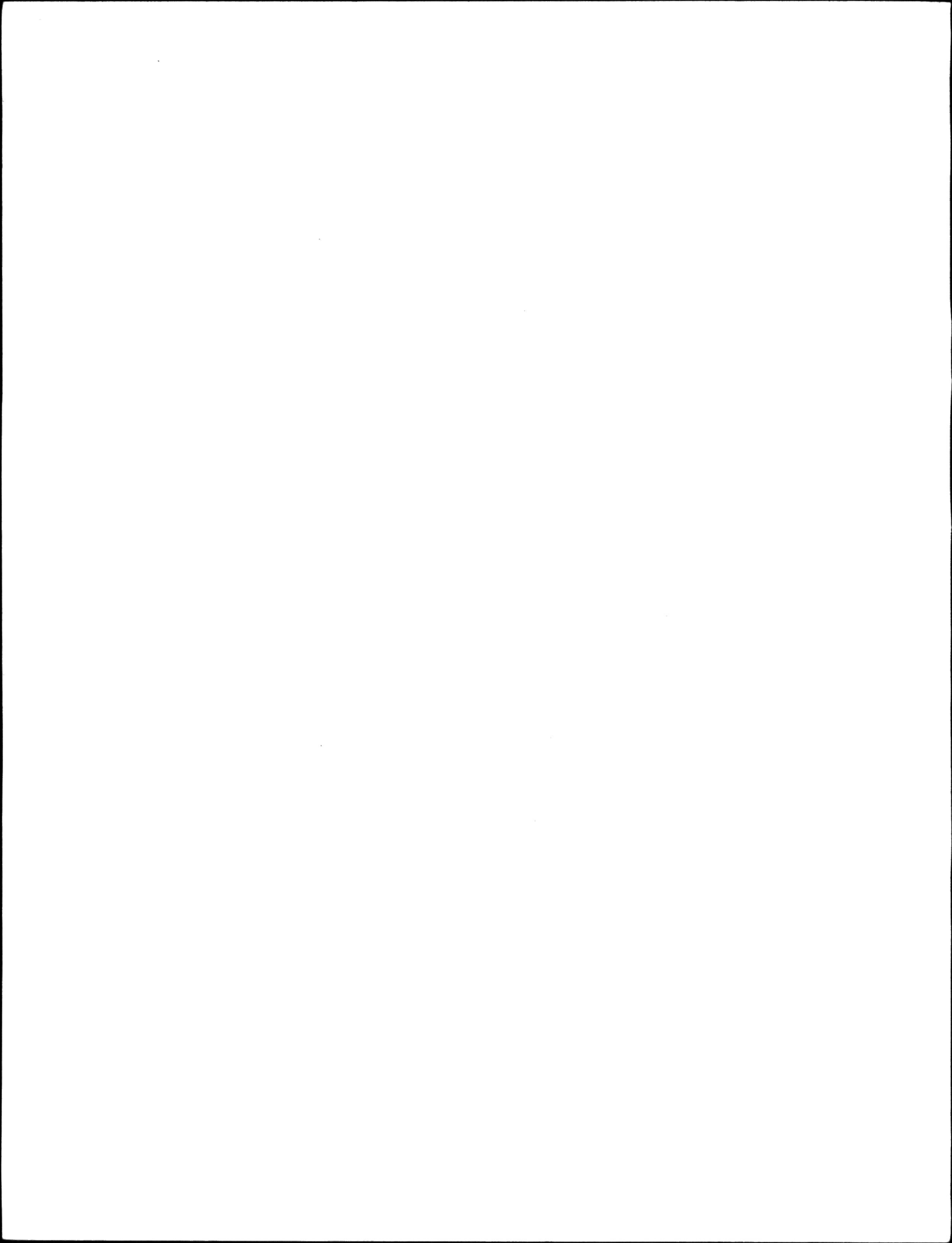
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MAJOR CLASSIFICATION: FEDERAL-PROVINCIAL

SUBCLASSIFICATION:

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	6M	12M	REMOTE	NORMAL
160	05DF004	Strawberry Creek near the Mouth	x			x			x
161	05EA001	Sturgeon River near Fort Saskatchewan	x			x			x
162	05EA005	Sturgeon River near Villeneuve	x				x		x
163	07AF010	Sundance Creek near Bickerdike	x			x			x
164	07BJ001	Swan River near Kinuso	x				x		x
165	07BJ003	Swan River near Swan Hills	x			x			x
166	05CE018	Threehills Creek below Ray Creek	x			x			x
167	05CE007	Threehills Creek near Carbon	x			x			x
168	05BL013	Threepoint Creek near Millarville	x			x			x
169	05AA006	Todd Creek at Elton's Ranch	x			x			x
170	05EE004	Vermilion River near Hazeldine	x			x			x
171	05EE001	Vermilion River near Mannville	x			x			x
172	05EE003	Vermilion River near Vegreville	x			x			x
173	05DE003	Wabamun Creek near Duffield	x			x			x
174	07BC003	Wabash Creek near Westlock	x			x			x
175	05BG006	Waiparous Creek near the Mouth	x				x		x
176	07CA006	Wandering River near Wandering River	x				x		x
177	07GG001	Washahigan River near the Mouth	x				x		x
178	05EC002	Waskatenau Creek near Waskatenau	x			x			x
179	05AD028	Waterton River near Glenwood	x				x		x
180	05BM014	West Arrowwood Creek near Arrowwood	x			x			x
181	07BF002	West Prairie River near High Prairie	x				x		x
182	05DF006	Whitemud Creek near Ellerslie	x			x			x
183	07IA005	Whitemud River near Dixonville	x				x		x
184	07AC001	Wildhay River near Hinton	x			x			x
185	05AB028	Willow Creek above Chain Lakes	x		x		x		x
186	05AB021	Willow Creek near Claresholm	x				x		x
187	05AB002	Willow Creek near Nolan	x			x			x
188	07AG003	Wolf Creek at Highway No. 16	x				x		x
189	06AB002	Wolf River at Outlet of Wolf Lake	x				x		x
190	05CB005	Beaverdam Creek near Cochrane	x			x			x
191	05BH013	Jumping Pound Creek near Cox Hill	x			x			x
192	05CE010	Ray Creek near Innisfail	x			x			x
193	05BH018	Renwick Creek near Three Hills	x			x			x
194	05CE019	Sheep Coulee near Carstairs	x			x			x
195	05CC010	Welch Creek Tributary near Leedale	x			x			x
196	05DF007	Whitemud Creek near Ireton	x			x			x
Operated by: Alberta									
1		Athabasca River above Embarras Channel nr Old Fort		x				x	
2		Athabasca River above Fletcher Channel		x		x		x	
3	07DD007	Athabasca River above Jackfish Creek		x			x		x
4		Athabasca River above Richardson River		x		x		x	
5		Athabasca River at Bob Armit's Cabin		x		x		x	
6	07DD006	Big Point Channel below Divergence	Misc. x				x		x
7		Embarras River		x		x		x	
8		Embarras River		x		x		x	
9		Embarras River		x		x		x	
10	07DD003	Embarras River below Divergence	Misc. x				x		x
11	07DD004	Fletcher Channel below Divergence	Misc. x				x		x
12	07DD005	Goose Island Channel below Divergence	Misc. x				x		x
13	07DD009	Jackfish Creek above Athabasca River	Misc. x			x			x
14		Lake Athabasca at Bustard Island		x			x		x
15	07ND001	Lake Athabasca at Fort Chipewyan		x			x		x
16	07DD008	Richardson Lake at the Outlet		x		x			x
17	07NA003	Riviere des Rochers above Confluence Revillon Coupe		x			x		x
18	07NA001	Riviere des Rochers above Slave River		x			x		x
19	07NA002	Riviere des Rochers at Ben Houle's Cabin	Misc. x				x		x
20	07NA007	Riviere des Rochers East of Little Rapids		x			x		x
21	07NA008	Riviere des Rochers West of Little Rapids		x		x	x		x
22	07GF002	Spring Creek near Valleyview	x		x		x		x



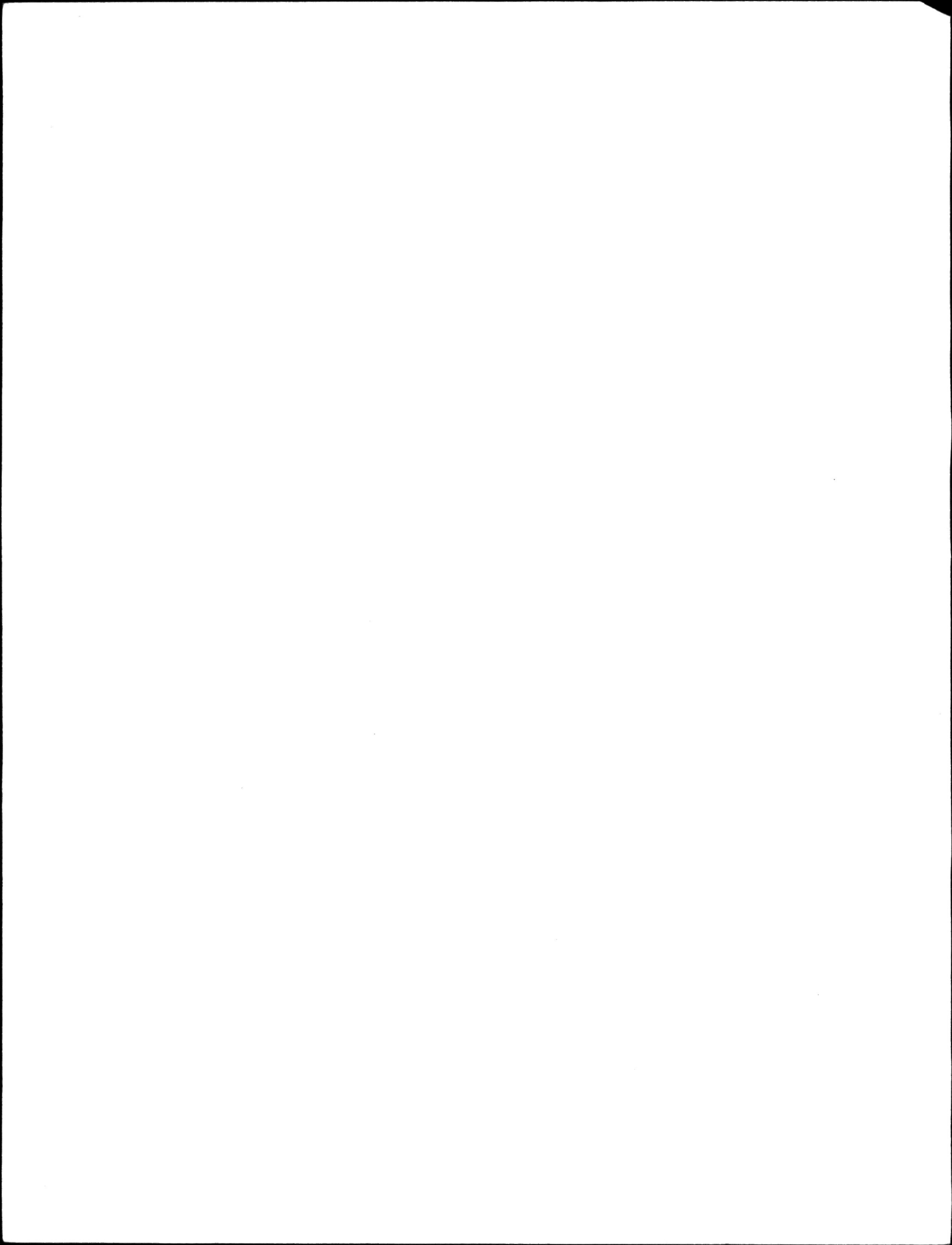


MAJOR CLASSIFICATION: PROVINCIAL

SUBCLASSIFICATION:

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
<u>Operated by: Water Survey of Canada</u>									
1	07BE002	Baptiste Lake at Municipal Beach		x		x			x
2	07GE004	Bear Lake near Clairmont		x		x			x
3	06AA003	Beaver Lake at Sampietro Beach		x		x			x
4	05AD021	Belly-St. Mary Diversion Canal	x			x			x
5	05AG004	B.R.D. Drain A near Hays	x			x			x
6	05BN008	B.R.D. Drain D near Vauxhall	x			x			x
7	05BN023	B.R.D. Drain E near Vauxhall	x			x			x
8	05AG005	B.R.D. Drain T near Hays	x			x			x
9	05AC013	B.R.D. Western Block Lateral A near Headgate	x			x			x
10	05AC014	B.R.D. Western Block Lateral A2 near Headgate	x			x			x
11	05AC015	B.R.D. Western Block Lateral B near Headgate	x			x			x
12	05AC016	B.R.D. Western Block Lateral C near Headgate	x			x			x
13	05BE008	Bow River at Canmore	x				x		x
14	05CD005	Buffalo Lake near Erskine		x		x			x
15	07CB001	Calling Lake at Ranger Station		x		x			x
16	05AF028	Canadian St. Mary Canal at Drop No.1	x			x			x
17	07BB008	Chip Lake at Outlet to Lobstick River		x		x			x
18	05BN014	Coal Creek at Bow City	x			x			x
19	05EB012	Cooking Lake at Cooking Lake		x		x			x
20	05BJ001	Elbow River below Glenmore Dam	x				x		x
21	05AH025	Elkwater Lake		x		x			x
22	07BK008	Fawcett Lake near Smith		x		x			x
23	05AA030	Gold Creek near Frank	x			x			x
24	07CE001	Gregoire Lake near Fort McMurray		x		x			x
25	05CC006	Gull Lake near Aspen Beach		x		x		x	x
26	05BN005	Hammer Mill Spillway near Gleichen	x			x			x
27	05EB011	Hastings Lake near Deville		x		x			x
28	05EA008	Isle Lake at Camp He Ho Ha		x		x			x
29	07CA004	Lac La Biche at Lac La Biche		x		x			x
30	07BB007	Lac La Nonne at Lac La Nonne		x		x			x
31	05EA006	Lac Ste. Anne at Alberta Beach		x		x			x
32	05AG007	Lateral 10 Spillway near Chin	x			x			x
33	05AC017	Lomond Lateral near Headgate	x			x			x
34	05AD039	Lonesome Lake at Waterton Park		x		x			x
35	05AA013	McGillvray Creek near Coleman	x			x			x
36	05EB013	Ministik Lake near New Sarepta		x		x			x
37	05EB014	Miquelon Lake at Provincial Park		x		x			x
38	05FA013	Pigeon Lake at Fisher Home		x		x			x
39	05CA008	Red Deer River at Forestry Road		x		x			x
40	05CA010	Red Deer River at Sundre		x		x			x
41	05BN015	Rolling Hills Canal No. 1 Spill	x			x			x
42	05BN019	Rolling Hills Canal No. 2 Spill	x			x			x
43	05AD020	Six Mile Coulee Spillway near Lethbridge	x			x			x
44	07JA002	South Wabasca Lake near Desmarais		x		x			x
45	07BC005	Steele Lake near Jarvie		x		x			x
46	07GH003	Sturgeon Lake at Williamson Park		x		x			x
47	05EA002	Sturgeon River at St. Albert	x			x			x
48	05CC003	Sylvan Lake at Sylvan Lake		x		x			x
49	07JA001	Utikuma Lake near Nipisi		x		x			x
50	05AD027	Waterton-Belly Diversion Canal	x			x			x
51	07BF006	Winagami Lake at Spillway Gates		x		x			x
52	05AH042	Mackay Creek near Grayburn Gap	x			x			x
53	05AH043	McAlpine Creek near Elkwater	x			x			x
54	05AC024	McGregor Lake Inflow near Milo	x			x			x
55	05AC025	McGregor - Travers Canal	x			x			x
56	05AF030	Milk River Ridge Reservoir		x		x			x
57	05AF029	Pothole Turnout near Magrath	x			x			x
58	05AE038	Stirling Lake Outflow near Stirling	x			x			x
<u>Operated by: Alberta</u>									
1	07GF005	Bridlebit Creek near Valleyview	x		x	x			x
2	07GF007	Horse Creek near Valleyview	x		x	x			x
3	07GF006	Rocky Creek near Valleyview	x		x	x			x
4	07GF004	Spring Creek (Upper) near Valleyview	x		x	x			x
5	07GF003	Wolverine Creek near Valleyview	x		x	x			x

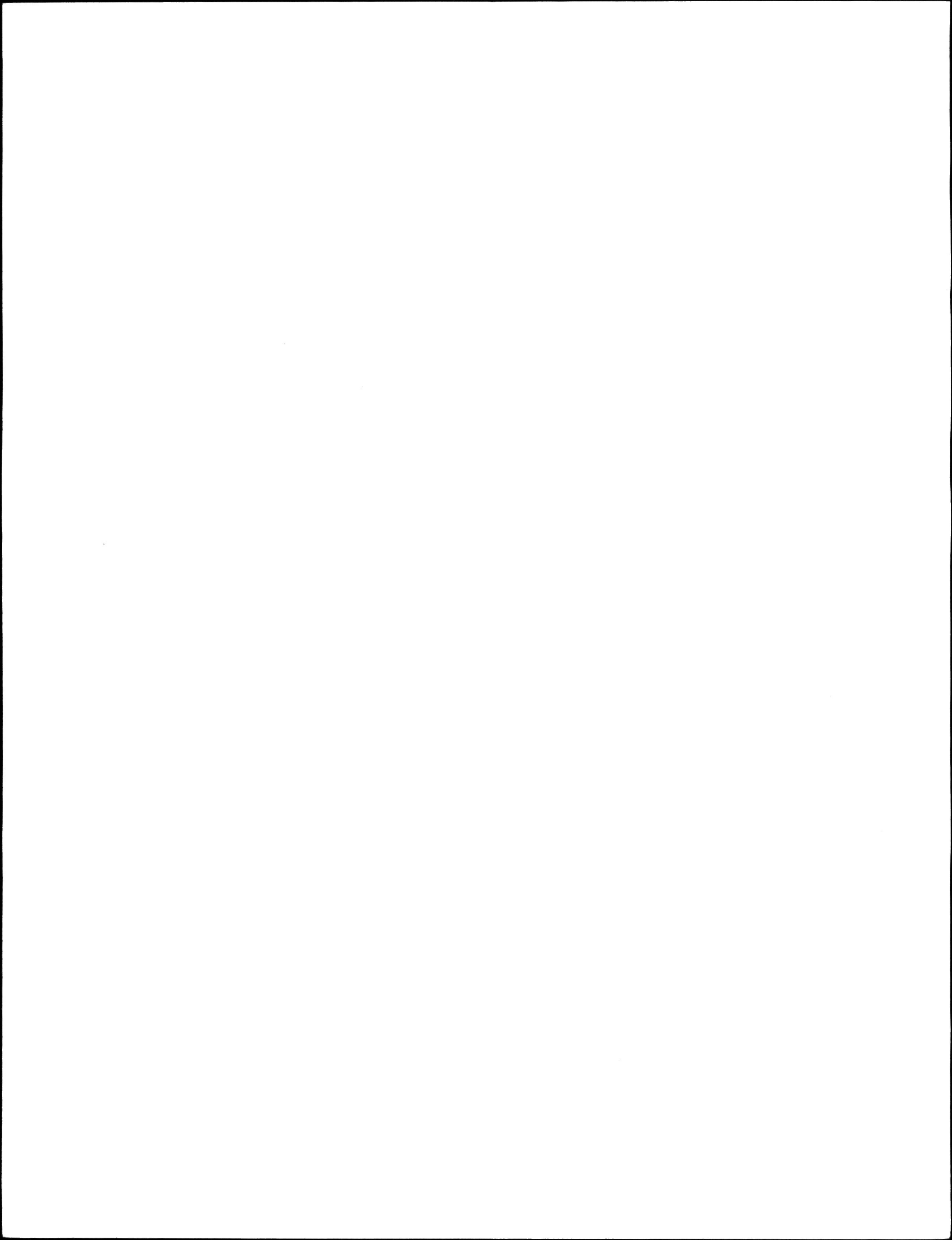
To  
POSERP



MAJOR CLASSIFICATION: ALBERTA OIL SANDS ENVIRONMENTAL RESEARCH PROJECT

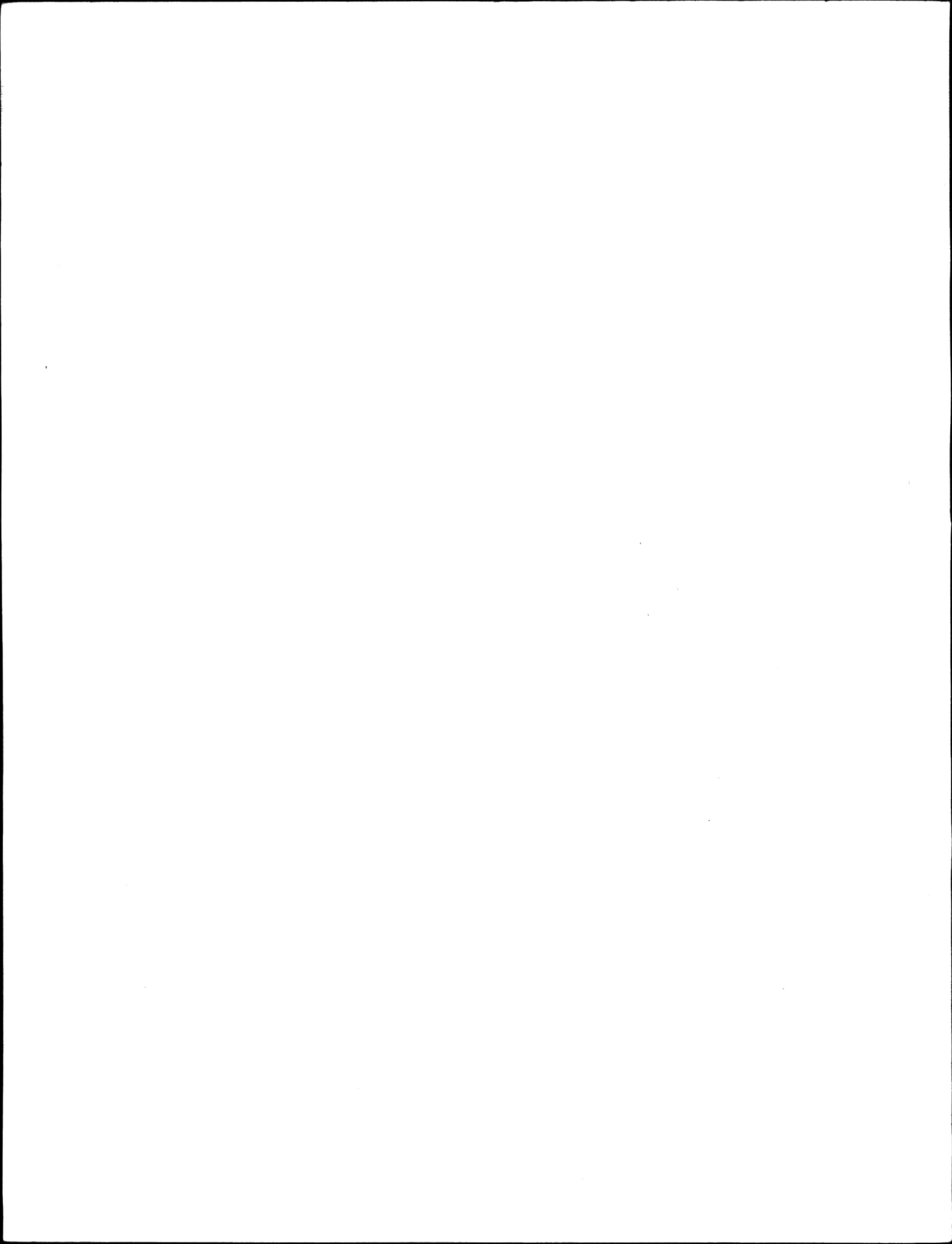
SUBCLASSIFICATION:

NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
		(The operation of these stations is funded separately through a Federal-Provincial agreement on environmental research in the oil sands region. Ten gauging stations previously operated under the cost-sharing agreement are now included under the A.O.S.E.R.P. These stations are indicated by an asterisk. The remaining stations on this list were established in 1975 & 1976.)							
1	07DA012	Asphalt Creek near Fort MacKay	x				x	x	
2	07DA001	*Athabasca River below McMurray	x		x		x	x	
3	07DD001	*Athabasca River at Embarras Airport	x		x		x	x	
4	07DA018	Beaver River above Syncrude	x				x	x	
5	07DA014	Calumet River near Fort MacKay	x				x	x	
6	07DC001	*Clearwater River at Draper	x		x		x	x	
7	07DB002	Dover River near the Mouth	x				x	x	
8	07DB003	Dunkirk River near Fort MacKay	x				x	x	
9	07DA022	Eaglenest Lake near Outlet		x		x			
10	07DA010	Ells River below Gardiner Lake	x				x	x	
11	07DA017	Ells River near the Mouth	x				x	x	
12	07DC001	*Firebag River near the Mouth	x				x	x	
13	07DA020	Gardiner Lake (Upper) Birch Mountains		x		x			x
14	07CE001	*Gregoire Lake near Fort McMurray		x		x			x
15	07CD004	*Hangingstone River at McMurray	x				x	x	
16	07DA009	Hartley Creek near Fort MacKay	x				x	x	
17	07CC001	Horse River at Abasands Park	x				x	x	
18	07DA016	Joslyn Creek near Fort MacKay	x				x	x	
19	07DC002	Lost Creek near the Mouth	x				x	x	
20	07DB001	*MacKay River near Fort MacKay	x				x	x	
21	07DA008	*Muskeg River near Fort MacKay	x				x	x	
22	07DA021	Namur Lake at Birch Mountain Lodge		x		x			x
23	07DA013	Pierre River near Fort MacKay	x				x	x	
24	07DA007	*Poplar Creek near Fort McMurray	x				x	x	
25	07DD002	*Richardson River near the Mouth	x				x	x	
26	07DA006	*Steepbank River near Fort McMurray	x				x	x	
27	07DA015	Tar River near Fort MacKay	x				x	x	
28	07DA019	Tar River (Upper) near Fort MacKay	x				x	x	
29	07DB004	Thickwood Creek near Fort MacKay	x				x	x	
30	07DA011	Unnamed Creek near Fort MacKay	x				x	x	



## SUBCLASSIFICATION:

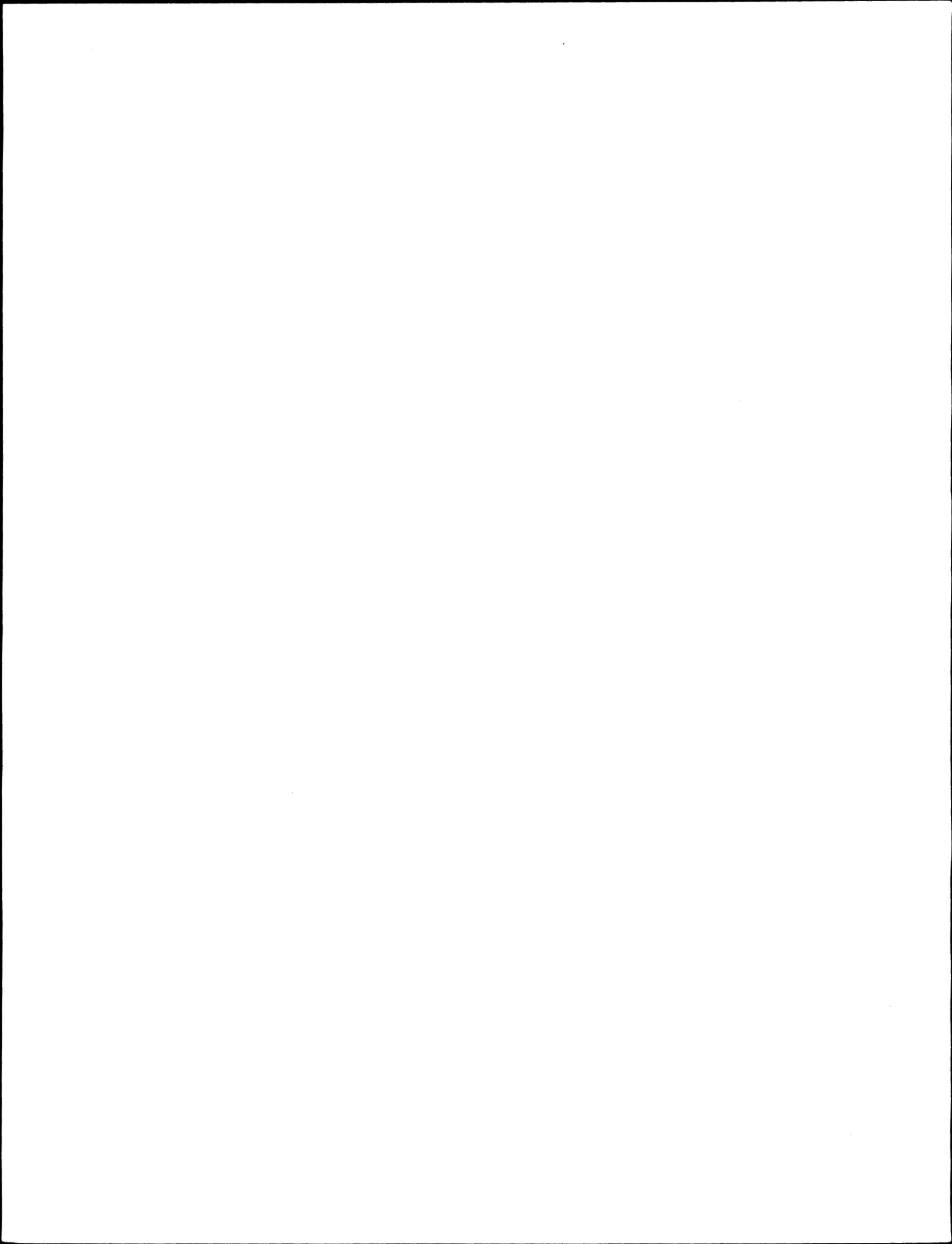
NO.	STATION NUMBER	STATION NAME	RECORD OBTAINED			OPERATION		ACCESS	
			FLOW	LEVEL	SED.	8M	12M	REMOTE	NORMAL
1	05BF024	Barrier Lake near Seebe		x					x
2	05DD006	Brazeau Reservoir		x					x
3	05DD005	Brazeau River below Big Bend Plant	x						x
4	05BD004	Cascade Power Diversion near Banff	x						x
5	05BJ005	Elbow River above Glenmore Dam	x						x
6	05BE005	Ghost Lake near Cochrane		x					x
7	05BG003	Ghost River Diversion to Lake Minnewanka	x						x
8	05BG002	Ghost River near Black Rock Mountain	x			x			x
9	05BF025	Kananaskis River below Barrier Dam	x				x		x
10	05BF003	Kananaskis River above Pocaterra Creek	x					x	x
11	05DC009	Lake Abraham near Nordegg		x				x	x
12	05BD003	Lake Minnewanka near Banff		x				x	x
13	05BF009	Lower Kananaskis Lake at Pocaterra Dam		x				x	x
14	05BF013	Mud Lake Diversion Canal	x			x			x
15	05DC010	North Saskatchewan River below Bighorn Plant	x					x	x
16	05BE007	Spray Power Diversion at Canmore	x					x	x
17	05BC006	Spray Reservoir at Three Sisters Dam		x				x	x
18	05BF005	Upper Kananaskis Lake at Main Dam		x				x	x
19	05DE002	Wabamun Lake at Wabamun		x				x	x



D R A F T

GUIDELINES FOR DESIGNATING FEDERAL & PROVINCIAL  
RESPONSIBILITY FOR WATER QUANTITY SURVEY STATIONS

DATED FEBRUARY 1, 1977





- D R A F T -

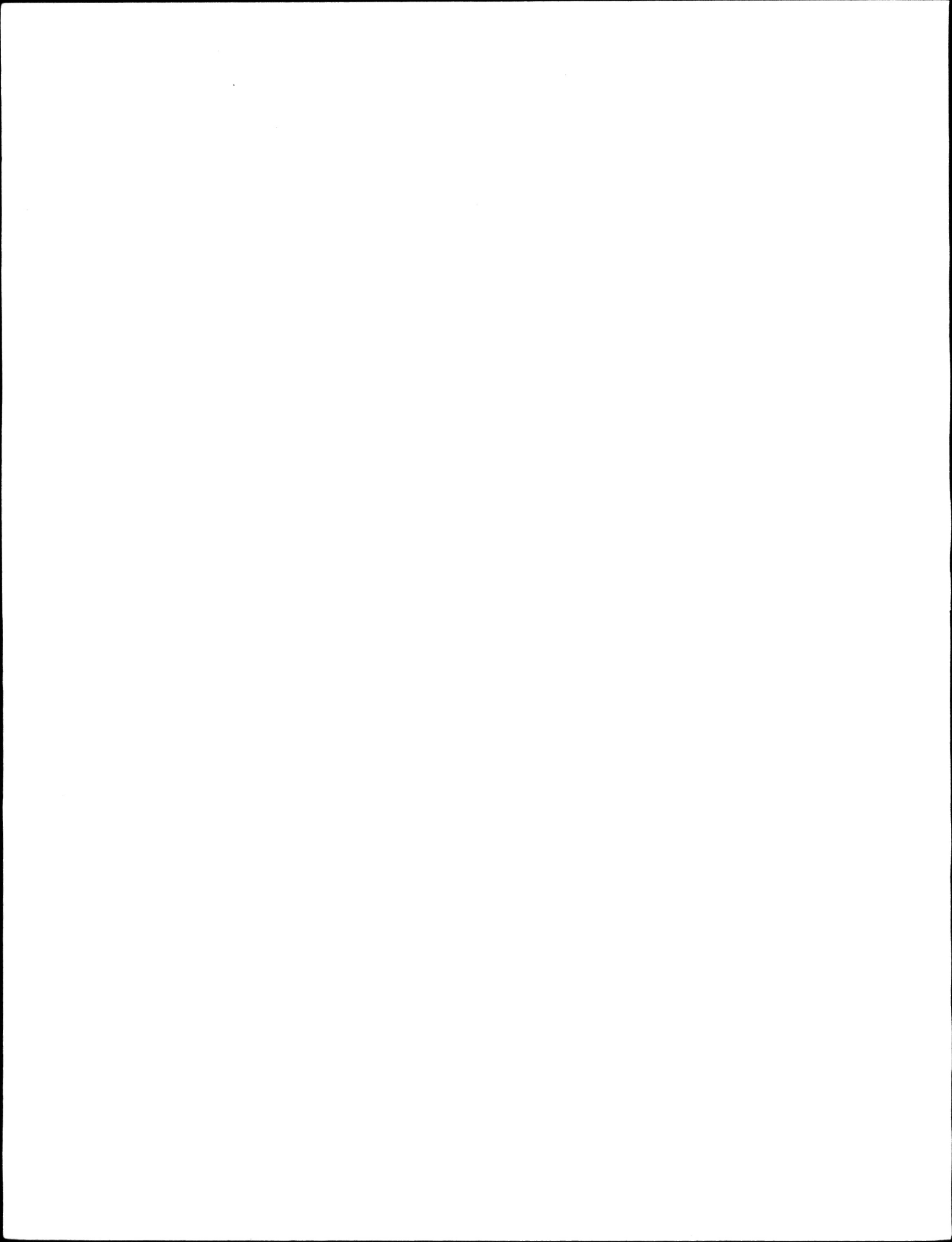
GUIDELINES FOR DESIGNATING FEDERAL AND PROVINCIAL  
RESPONSIBILITY FOR WATER QUANTITY SURVEY STATIONS

The Guidelines have been prepared in compliance with the Memoranda of Agreement between Canada and the Provinces in order to determine and review the designation of water quantity survey stations. The assignment of station designations is the responsibility of each Coordinating Committee established under the Memoranda of Agreement.

The intent of these guidelines is to provide a means by which water quantity survey stations will be designated throughout Canada. Water quantity survey stations as used in these guidelines has the same definition as in the memorandum of agreement and includes streamflow, water level and sediment survey stations. The word "stations" used in these guidelines means "water quantity survey stations".

FEDERAL STATIONS

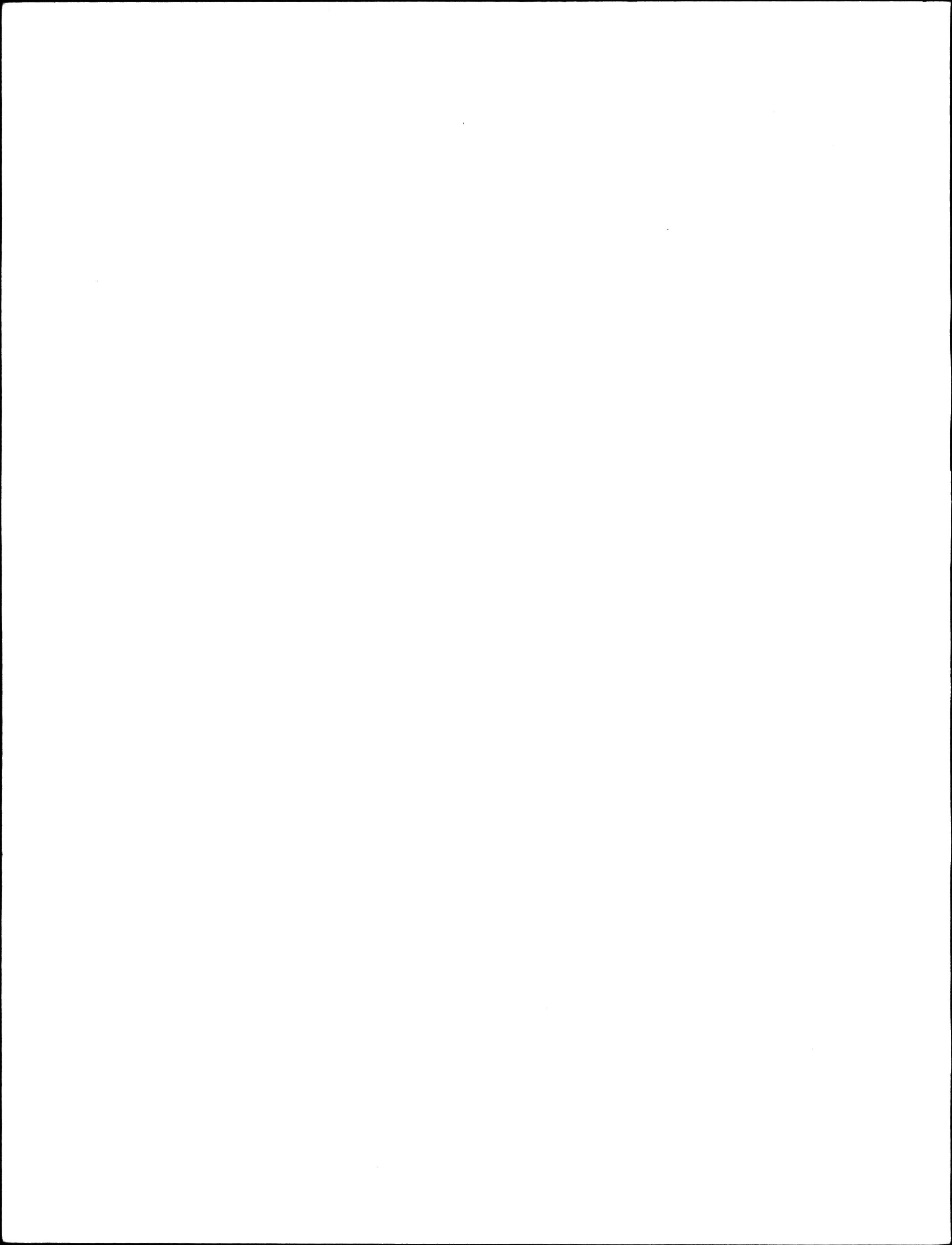
The stations under these guidelines support programs of primary interest to the Government of Canada.



Stations which are required for programs of various federal government departments where water quantity information on inland waters is required in support of specific projects or management activities. Normally stations in this category would be the result of a specific request from another federal government department (EG. MOT, DPW) or from statutory programs within Environment Canada (eg. Fisheries, Migratory Birds). Costs will normally be borne by the requesting agency. A station may also be designated under this guideline, where by formal agreement the Federal government has accepted the responsibility for the continued operation of the station under an implementation agreement.

2. Interprovincial Rivers

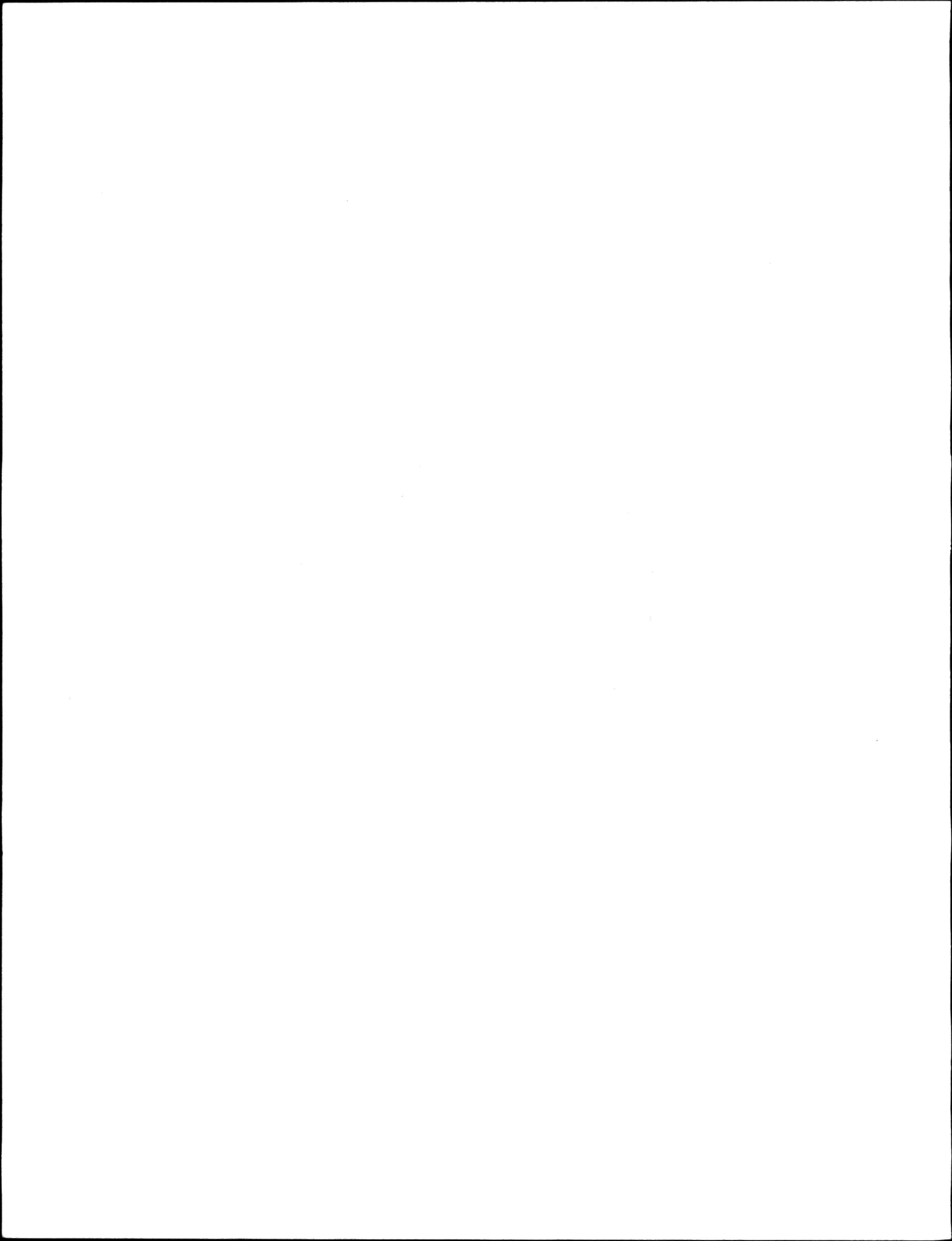
Stations which are required for monitoring of streams flowing across or forming provincial or provincial-territorial boundaries where federal responsibility has been established by a federal-provincial agreement or where both the federal and provincial governments recognize that there is or could be a trans-boundary management or jurisdictional problem.



3. International Commitments

Stations which are associated with federal responsibilities arising from international agreements, treaties, orders or studies.

- a) where the International Joint Commission (IJC) issues orders governing the control of waters crossing or forming part of international boundaries and stipulates the installation and monitoring of water quantity survey stations.
- b) Stations which are not specifically stipulated under IJC orders but are required to support orders of the IJC.
- c) International treaties and agreements which involve the use of waters crossing or forming part of an international boundary and specifically stipulate the reaches of streams required to be monitored or stipulate that special arrangements be made to review water quantity survey needs.
- d) Studies arising from federal responsibilities under the Boundary Waters Treaty which require the establishment of water quantity stations. These studies may be unilateral or bilateral and undertaken in anticipation of the need for formal studies.



- e) Transboundary streams which require monitoring for management purposes.

4. Water Bodies of Navigational Importance

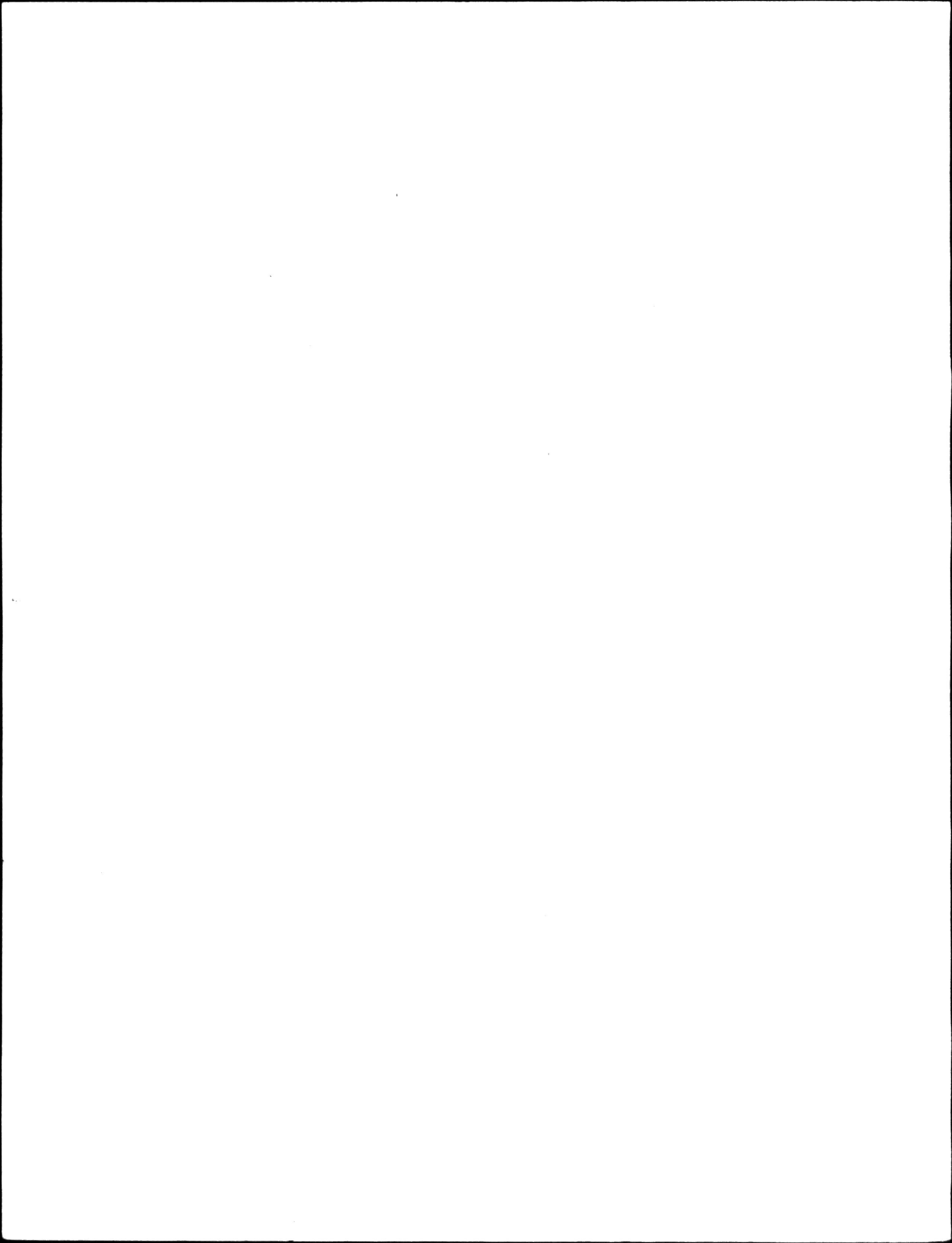
Stations which are operated for federal government departments and are normally covered by internal cost sharing arrangements in carrying out responsibilities relating to maintenance of navigational channels, construction of training works, prediction and controlling of water levels in navigable streams or lakes. A water quantity survey station located on a stream classified navigable under the Navigable Waters Protection Act is not automatically included in this guideline.

5. Nationally Funded Hydrologic Research Programs

Stations which support international and nationally funded hydrologic research programs.

6. Basin Studies

The guideline normally covers stations only for an interim period. Stations are included for the period of a study where federal responsibility has been established under the terms and conditions of a study agreement between the federal and provincial governments.



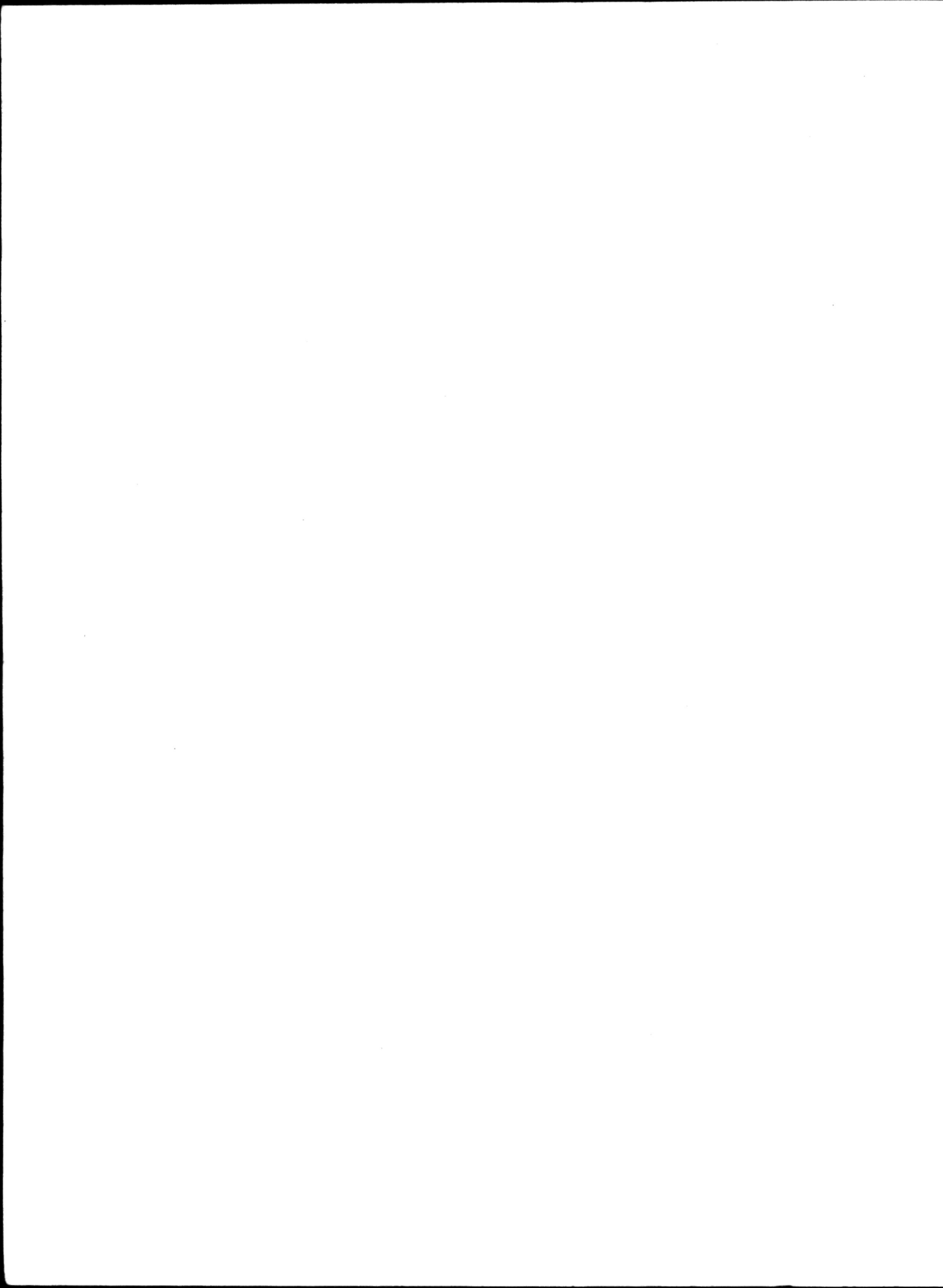


Where it is known that the implementation stage will proceed under a federal-provincial agreement. The guideline may be used as a holding category between completion of a study and implementation of study recommendations where the responsibility for monitoring was federal during the study.

7. National River Inventory

The number of stations that can be operated to provide information for a national inventory will be limited to those required to assess major water quantity trends in the country and significant discharge to the ocean. Many stations under other federal guidelines perform a dual function and also form part of the national inventory.

This guideline includes stations within each province and territory that will provide an assessment of the total water resources available and a representative sampling on a national basis of the hydrologic regimes in Canada giving consideration to geographic and climatic variability, basin size, streamflow regime, relationship to major groundwater resources and length of record.



## FEDERAL-PROVINCIAL STATIONS

The stations under these guidelines support programs which are of interest to the governments of both Canada and the Provinces.

### Federal-Provincial Agreements

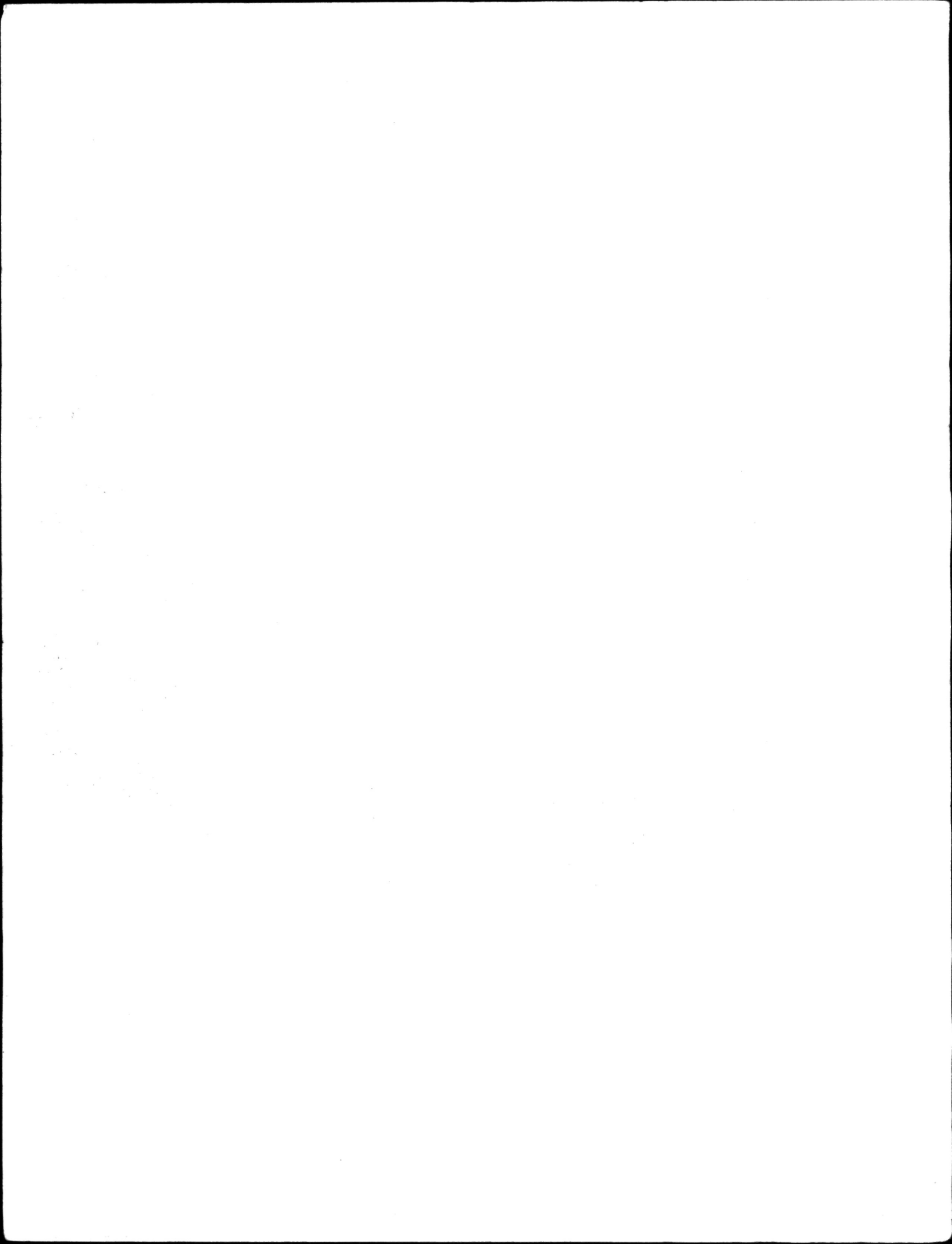
Stations are included where joint federal and provincial responsibility is established under the terms and conditions of an agreement between the federal and provincial governments. Following the completion of federal-provincial water resources study and implementation agreements a station will also be designated under this guideline, where responsibility for the continued operation of the station would be in the joint interest of both Canada and the Province.

### River Basin Development

Stations are included which are of interest to both Canada and the Provinces for management of river basins.

## PROVINCIAL STATIONS

Stations which are required for Provincial programs where water quantity information on inland waters is required in support of specific projects or management activity. Normally, such station designations would be the result of a specific request from the Provincial government.



Agr-ALTA-2

AUTHOR Canada-Alberta Memorandum  
of Agreement for Water Quantity  
TITLES Surveys. ANNUAL REPT. 1976-77

DATE DUE

BORROWER'S NAME

