WATER QUANTITY SURVEYS

COST SHARING AGREEMENT

CANADA - NEWFOUNDLAND

ANNUAL REPORT 2001 - 2002

Martin Goebel
Administrator for Newfoundland

Mr. W. S. Appleby
Administrator for Canada

In accordance with Article XII of the Memorandum of Agreement covering Water Quantity Surveys in the Province of Newfoundland, we submit herewith the annual report for fiscal year 2001 - 2002.

Members of the Co-ordinating Committee

H. Khan
Co-ordinator for Newfoundland
St. John's, Newfoundland

J. B. Merrick
Co-ordinator for Canada
Bedford, Nova Scotia

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INTRODUCTION

The year ending March 31, 2002 was the twenty seventh in which water quantity surveys in Newfoundland were conducted under a Memorandum of Agreement between the Federal and Provincial Governments.

The Agreement establishes the basis on which co-operative water quantity surveys are made. It is administered for Canada by the Director of the Atmospheric Environment Branch (AEB) of Environment Canada and for Newfoundland by the Director, Water Resources Division, Department of Environment and Labour.

A Co-ordinating Committee comprising the Manager Environmental Monitoring Division of AEB, and the Manager Surface Water Section, Newfoundland Department of Environment and Labour, reports to the Administrators. It is the responsibility of the Co-ordinating Committee to prepare annually, Schedules A and D for approval by the Administrators.

The full Memorandum of Agreement includes four schedules. The annually changing **Schedules A and D** for 2001 - 2002 are attached to this report in Appendices I and II**. Schedules B and C** are primarily administrative in nature. They are provided in previous annual water reports of this series, as well as in the publication entitled Compendium of Practices, Interpretations and Administrative Procedures for the Water Quantity Survey Agreements: dated 1985-07.

Schedule A is a list of water quantity stations operated under the terms of the Agreement and their responsibility classification as federal, federal-provincial or provincial.

Schedule D provides a summary of the 2001 - 2002 annual payment.

Through negotiations with the Iron Ore Company of Canada, in 2001, Water Survey of Canada now operates a network of eight stations for the IOCC water quantity monitoring program in Western Labrador. Seven new stations were installed and one discontinued, 6 of which are equipped with IOCC owned Lakewood loggers. Extensive consultation with “Lakewood” resulted in successful formatting of data for processed using Compumod. The monitoring program was driven by two issues; one was to address environmental concerns relating to proposed federal regulations on mine/metal effluent discharge and IOCC’s program for impoundment of mine tailings in Wabush Lake. The other was environmental considerations related to expansion of mining activity in the Luce Lake area.

Newfoundland and Labrador Hydro requested a water level monitoring station on Granite Lake. The station was equipped with meteorological sensors

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYS - ISLAND

2001 - 2002

Budget Item	2001 - 02
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	169,906
Transportation and Communications	
Travel - 07	12,600
Transportation and Postage - 09	851
Telecommunications - 10, 11	2,479
Professional and Special Services	
Professional Services - 18	0.00
Other Services - 22	7,461
Rentals - 25	25,048
Purchased Repair and Upkeep	
Equipment Purchased and Repairs - 28	9,641
Building and Structures Repairs - 29	437
Utilities, Materials and Supplies	
Public Utility Services - 32	1,748
Purchased Materials, Supplies,	
Misc. Goods - 33, 34	27,346
Parts and Consumable Tools - 35	23,548
Other Costs - Data Processing	0
Depreciation of Vehicles (5)	13,178
Depreciation of Field Equipment and Instruments	
TOTAL	**294,243**

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYS - LABRADOR

2001 - 2002

Budget Item	2001 - 02
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	17,052
Transportation and Communications	
Travel - 07	6,326
Transportation and Postage - 09	1,237
Telecommunications - 10, 11	440
Professional and Special Services	
Professional Services - 18	0
Other Services - 22	102
Rentals - 25	21,272
Purchased Repair and Upkeep	
Equipment Purchased and Repairs - 28	1000
Building and Structures Repairs - 29	0
Utilities, Materials and Supplies	
Public Utility Services - 32	0
Purchased Materials, Supplies,	
Misc. Goods - 33, 34	736
Parts and Consumable Tools - 35	2,474
Other Costs - Data Processing	0
Depreciation of Vehicles (5)	1,318
Depreciation of Field Equipment and Instruments	
TOTAL	**51,957**

WATER QUANTITY SURVEYS

CALCULATION OF ANNUAL COSTS AND PAYMENTS - 2001 – 2002

HYDROMETRIC NETWORK - ISLAND

Station Category	Stations	Station Units
Federal 1	5	5.0
Federal 4	7	7.0
Federal / Provincial 3	31	31.0
Provincial 1	18	15.6
Total	**61**	**58.6**

Average Cost per Station Unit = $294,243.00 / 58.6 = $5,021.21

Provincial Share = $5,021.21 **[(31 x .5) + 15.6] =** $5,021.21**[31.1] = $156,159.63**

HYDROMETRIC NETWORK - LABRADOR

Station Category	Stations	Station Units
Federal 2	1	1.0
Federal 4	3	3.0
Provincial 1	1	0.2
Total	**5**	**4.2**

Average Cost per Station Unit = $51,957/ 4.2 = $12,370.71

Provincial Share = $12,370.71[0.2] = $2,474.14

HUMBER BASIN METEOROLOGICAL STATIONS

Station Category	Stations	Station Units
Humber Basin Meteorology	5	1.0

Cost per Station = 20% of Hydrometric station = $5,021.21 x .2 = $1,004.24

Provincial Share = $1,004.24 x 5 = $5,021.20

Total Provincial Share = $163,654.97

TABLE 1
WATER QUANTITY SURVEYS
GAUGING STATION DATA FOR 2001 – 2002

No. of Stations: incl Contrib			Changes during 2000 - 2001		Stn. Designation April 1, 2001			
April 1,2000	April 1, 2001	Change	Added	Discontinued	Fed	F/P	Prov.	Contrib.
93	90	3	1	4	16	31	19	24

TABLE 2
WATER QUANTITY SURVEYS
COMPARATIVE GAUGING STATION DATA April 1, 1975 - April 1, 2001

Federal Stations			F/P Stations			Provincial Stations			Total Stations		
Apr 1, 1975	Apr 1,2001	Change	Apr 1, 1975	Apr 1, 2001	Change	Apr 1, 1975	Apr 1, 2001	Change	Apr 1, 1975	Apr 1, 2001	Change
14	16	2	7	31	24	9	19	10	30	66	36

TABLE 3
WATER QUANTITY SURVEYS
DETAILED GAUGING STATION DATA 2001 – 2002

F-1	*F-2	F-3	F-4	Total F	FP-1	FP-2	FP-3	Total F/P	P-1	P-2	Total P	Contrib.	Total-All
5	1	0	10	16	0	0	31	31	19	0	19	24	90

TABLE 4
WATER QUANTITY SURVEYS
SUMMARY OF SCHEDULE D - 2001 - 2002
(does not include costs for Humber River Meteorological Stations or Sediment Program)

Streamflow & Water Level		Sediment		Total
Operation	Construction	Operation	Construction	
$166,997.14	0	0	0	$166,997.14

TABLE 5
WATER QUANTITY SURVEYS
COMPARISON - SCHEDULED & ACTUAL DOLLAR COSTS FOR 2001 - 2002
(does not include costs for Humber River Meteorological Stations or Sediment Program)

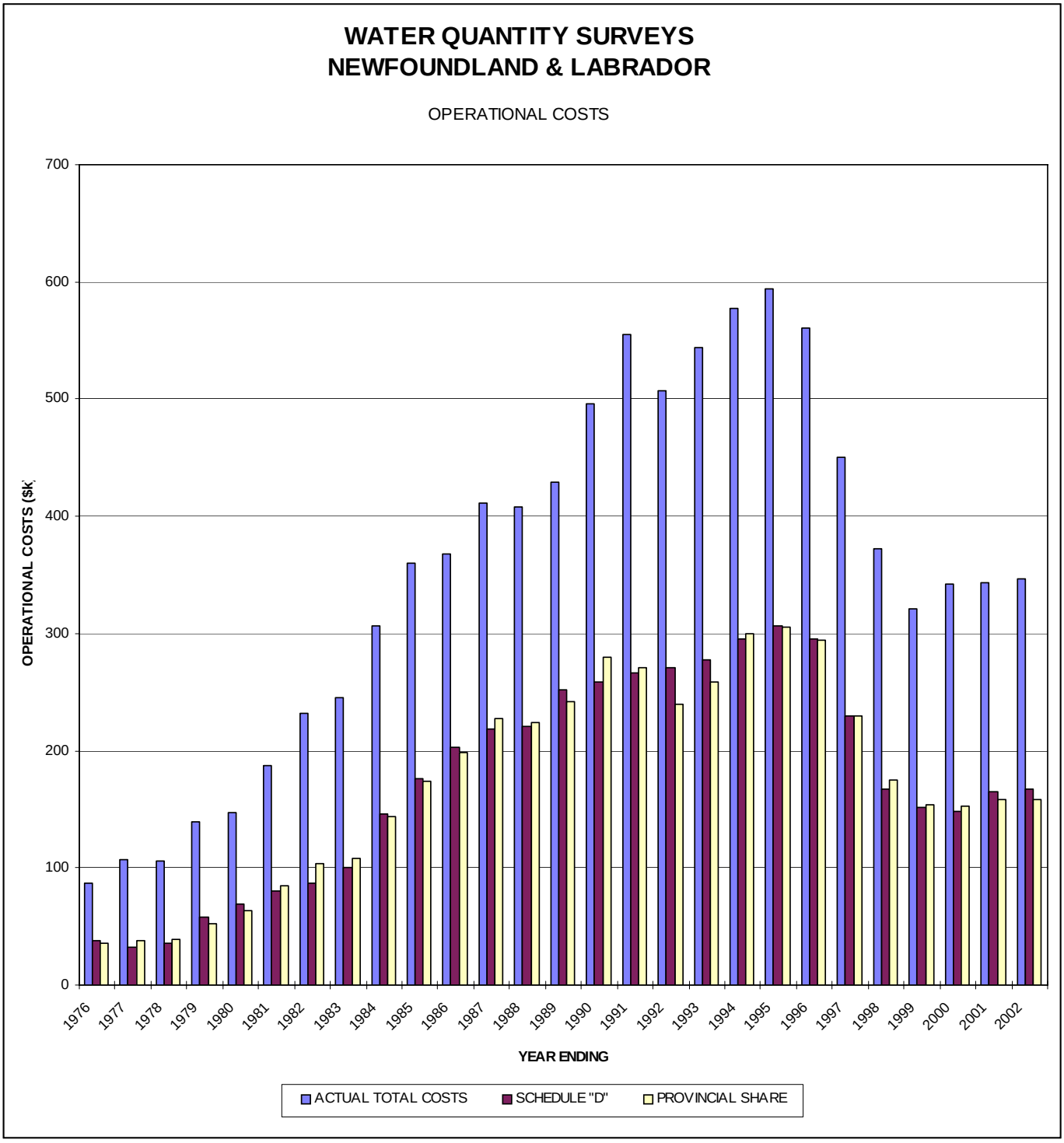
Salary & Operations		Construction		Total			Amount Payment	Received Minus
Sch. D	Actual Cost	Sch. D	Actual Cost	Sch. D	Actual Cost	Difference	Received	Actual
$166,997.14	$158,633.76	0	0	$166,997.14	$158,633.76	$8,363.38	$166,997.14	$8,363.38

SUMMARY OF ANNUAL COSTS AND PAYMENTS
1975-76 TO 2001-2002

YEAR	SCHEDULE "D" PAYMENTS BY PROVINCE				ACTUAL PROVINCIAL SHARE				+CREDIT -DEBIT
	HYDROMET	SEDIMENT	CONSTR	TOTAL	HYDROMET	SEDIMENT	CONSTR	TOTAL	
1975-76	37,800	-	3,600	41,400	36,238	-	2,177	38,415	2,985
1976-77	32,340	-	12,000	44,340	37,840	-	1,573	39,413	4,927
1977-78	35,520	-	24,480	60,000	38,700	-	13,963	52,663	7,337
1978-79	56,775	1,400	11,825	70,000	51,371	679	26,000	78,050	-8,050
1979-80	68,338	933	25,729	95,000	62,256	896	22,476	85,628	9,372
1980-81	78,639	1,475	6,000	86,114	83,518	1,064	7,703	92,285	-6,171
1981-82	83,523	3,750	14,000	101,273	100,726	3,114	16,560	120,400	-19,127
1982-83	96,542	3,744	55,000	155,286	102,735	5,886	47,224	155,845	-559
1983-84	141,457	4,470	38,000	183,927	136,917	6,906	37,864	181,687	2,240
1984-85	168,244	7,350	52,000	227,594	168,247	5,295	48,662	222,204	5,390
1985-86	195,563	7,650	36,787	240,000	191,580	6,324	39,203	237,107	2,893
1986-87	211,706	6,975	34,641	253,322	222,843	4,413	35,136	262,392	-9,070
1987-88	213,634	6,975	42,000	262,609	220,934	3,597	47,957	272,488	-9,879
1988-89	245,221	6,300	15,000	266,521	237,249	4,683	16,148	258,080	8,441
1989-90	253,392	5,173	30,000	288,567	274,004	5,571	21,264	300,839	-12,272
1990-91	260,691	5,925	-	266,616	266,058	4,809	2,532	273,399	-6,783
1991-92	264,591	6,450	-	271,041	234,222	5,649	-	239,871	31,170
1992-93	273,482	3,825	-	277,307	254,430	4,713	-	259,143	18,164
1993-94	270,983	3,700	21,000	295,683	276,163	3,505	20,496	300,164	-4,481
1994-95	295,500	3,200	-	298,700	288,835	3,220	-	292,055	6,645
1995-96	294,040	1,375	-	295,415	292,860	1,180	-	293,910	1,505
1996-97	229,643	0	-	229,643	229,643	0	-	229,643	0
1997-98	167,169	0	-	167,169	175,042	0	-	175,042	-7,873
1998-99	151,439	0	-	151,439	154,159	0	-	154,159	-2,720
1998-99	Adjustment**			-24,677					-24,677
1999-00	147,934	0	-	147,934	152,829	0	-	152,829	-4,895
2000-01	165,271			165,271	158,561			158,561	6,710
2001-02	166,997			166,997	158,634			158,634	8,363
								Net total	-415

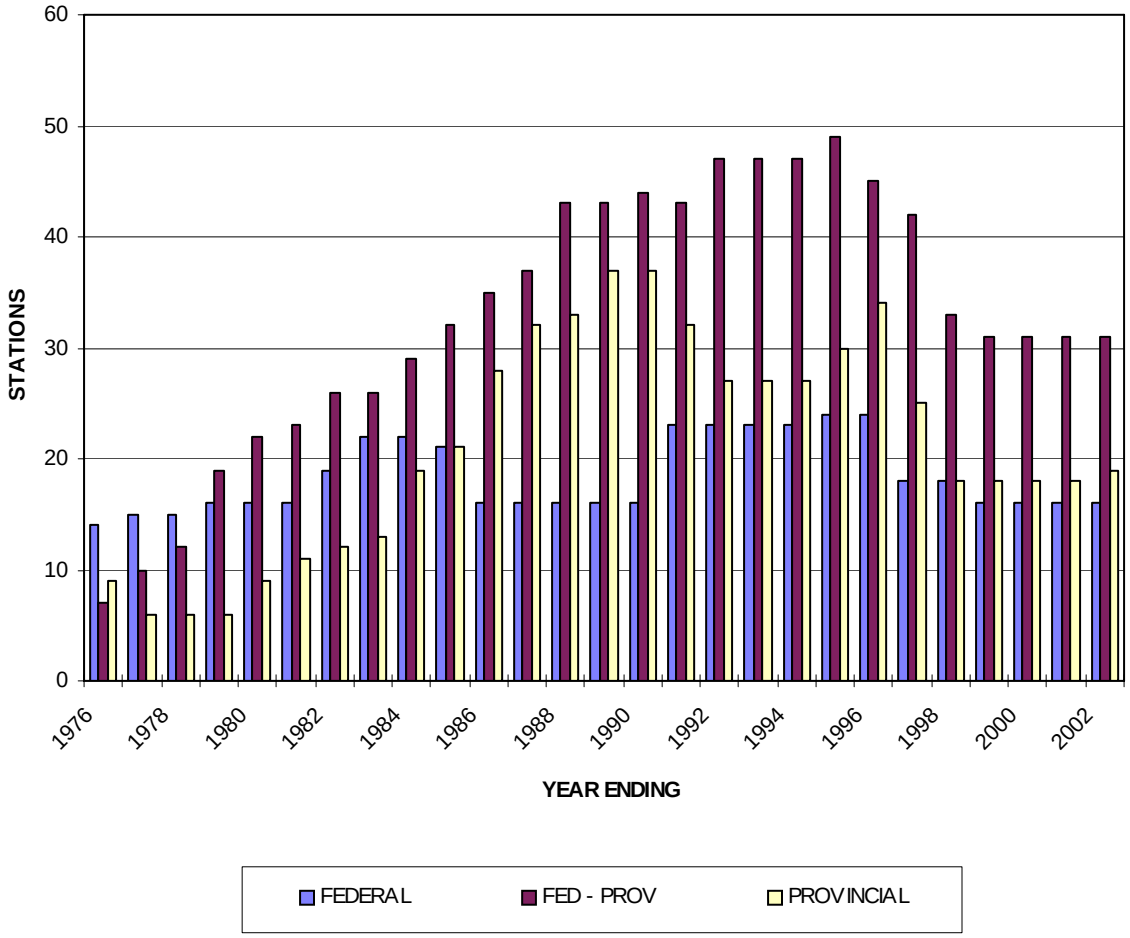
NOTES. A positive net total indicates funds owed to the province.

**Credit surplus of 24,677 in account toward cost of Modernization


WATER QUANTITY SURVEYS
NEWFOUNDLAND & LABRADOR
OPERATIONAL COSTS
OPERATIONAL COSTS ($k)
700
600
500
400
300
200
100
0
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
YEAR ENDING
ACTUAL TOTAL COSTS
SCHEDULE "D"
PROVINCIAL SHARE

WATER QUANTITY SURVEYS
NEWFOUNDLAND and LABRADOR

NUMBER OF STATIONS



APPENDIX I

SCHEDULE A

WATER QUANTITY SURVEY STATIONS

SCHEDULE "A" RESPONSIBILITY CLASSIFICATION NEWFOUNDLAND 2001-2002

FEDERAL 1 FEDERAL DEPARTMENTAL PROGRAMS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02ZB001	Isle aux Morts River below Highway Bridge	1962	205	Q R C	DCP LG TYP LRTAP *A B E*
02YS006	Northwest River at Terra Nova National Park	1994	663	Q R C	DCP LG *A*
02ZK001	Rocky River near Colinet	1948	285	Q R C	DCP LGTYP MET WQ *A B E*
02YS003	Southwest Brook at Terra Nova National Park	1967	36.7	Q R C	DCP LG *A B E(CARRIER)*
02YL001	Upper Humber River near Reidville	1928	2110	Q R C	DCP LG TYP *A B E*

FEDERAL 2 INTERPROVINCIAL WATERS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02XA003	Little Mecatina River above lac Fourmont	1979	4540	Q R C	DCP LG RMT MET WQ *A*

FEDERAL 4 NATIONAL WATER QUANTITY INVENTORY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03QC002	Alexis River near Port Hope Simpson	1978	2310	Q R C	DCP LG RMT MET WQ *A*
02ZF001	Bay du Nord River at Big Falls	1950	1170	Q R C	DCP LG *A B E*
03QC001	Eagle River above Falls	1966	10900	Q R C	DCP LG RMT WQ TYP
02YQ001	Gander River at Big Chute	1949	4450	Q R C	DCP LG TYP *A B E*
02YJ001	Harrys River below Highway Bridge	1968	640	Q R C	DCP WQ LRTAP *A B C E*
02YL003	Humber River at Humber Village Bridge	1982	7860	Q R C	DCP LG REG *A C*
02YG001	Main River at Paradise Pool	1986	627	Q R C	DCP LG RMT *A E*
02YD002	Northeast Brook near Roddickton	1980	200	Q R C	DCP LG*A B*
02YC001	Torrent River at Bristol's Pool	1959	624	Q R C	DCP LG WQ *A B E*
03NF001	Ugjoktok River below Harp Lake	1979	7570	Q R C	DCP *LG* RMT WQ *A*

[16 F stations]

.FEDERAL-PROVINCIAL 3 REGIONAL WATER QUANTITY INVENTORY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02YA002	Bartletts River near St. Anthony	1986	33.6	Q R C	DCP LG *A B*
02ZH002	Come-by-Chance River near Goobies	1961	43.3	Q R C	DCP LG *A B*
02ZE004	Conne River at Outlet of Conne Pond	1988	99.5	Q R C	DCP LG MET *A*
02YO011	Exploits River below Noel Pauls Brook	1985	6300	Q R C	DCPLG REG *A E*
02ZG001	Garnish River near Garnish	1958	205	Q R C	DCP LG LRTAP *A B*
02ZC002	Grandy Brook below Top Pond Brook	1982	230	Q R C	DCP LG RMT LRTAP *A E*
02YO008	Great Rattling Brook above Tote River Confluence	1984	773	Q R C	DCP LG *A E*
02YE001	Greavett Brook above Portland Creek Pond	1983	95.7	Q R C	DCP LG *A E*
02ZA002	Highlands River at TCH	1982	72.0	Q R C	DCP LG *A B E*
02YR003	Indian Bay Brook near Northeast Arm	1981	554	Q R C	DCP LG *A B E*
02YK002	Lewasseechjeech Brook at Little Grand Lake	1952	470	Q R C	DCP LG RMT *A E*
02YN002	Lloyds River below King George IV Lake	1980	469	Q R C	DCP LG RMT *A*
02YR001	Middle Brook near Gambo	1959	267	Q R C	DCP LG *A B E*
02ZK002	Northeast River near Placentia	1979	89.6	Q R C	LG *A B*
02YO006	Peters River near Botwood	1981	177	Q R C	DCPOGGER *A B*
02ZH001	Pipers Hole River at Mothers Brook	1952	764	Q R C	DCP LG WQ LRTAP *A B*
02ZG004	Rattle Brook near Boat Harbour	1981	42.7	Q R C	DCP LG *A B*
02YL005	Rattler Brook near McIvers	1985	17.0	Q R C	DCP LG *A B*
02YQ005	Salmon River near Glenwood	1987	80.8	Q R C	DCP LG *A E*
02ZG003	Salmonier River near Lamaline	1980	115	Q R C	DCP *LG A E*
02ZM009	Seal Cove Brook near Cappahayden	1979	53.6	Q R C	DCP LG *A B*
02YK005	Sheffield Brook near TCH	1972	391	Q R C	DCP LG *A B E*
02ZJ003	Shoal Harbour River near Clarenceville	1985	106	Q R C	DCP LG *A B*
02ZM016	South River near Holywood	1983	17.3	Q R C	DCP LG *A B*
02ZJ001	Southern Bay River near Southern Bay	1976	67.4	Q R C	DCP *LG A*
02YO012	Southwest Brook at Lewisporte	1989	47.7	Q R C	DCP *LG A*
02YM003	South West Brook near Baie Verte	1980	93.2	Q R C	DCP LG *A B*
0J02YS005	Terra Nova River at Glovertown	1985	2000	Q R C	DCP LG *A E*
02YL008	Upper Humber River above Black Brook	1988	471	Q R C	DCP LG RMT MET *A E*
02ZM018	Virginia River at Pleasantville	1984	10.7	Q R C	*LG A*
02ZM008	Waterford River at Kilbride	1974	52.7	Q R C	LG *A*

[31 F/P Stations]

PROVINCIAL 1 PROVINCIAL DEPARTMENTAL PROGRAM

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02ZL005	Big Brook at Lead Cove	1985	11.2	Q R C	LG *A B*
03OE010	Big Pond Brook below Big Pond	1993	71.4	Q R C	LG RMT *A*
02YK008	Boot Brook at Trans-Canada Highway	1985	20.4	Q R C	DCP LG *A B*
02YF002	Cat Arm Reservoir near Spillway	1994		H R C	DCP LG RMT *A*
02YL011	Copper Pond Brook near Corner Brook Lake	1994	12.9	Q R C	DCP LG *A*
02YL009	Corner Brook Lake at lake Outlet	1990		H R C	DCP LG REG MET
02YL007	Deer Lake at Deer Lake	1987		H R C	DCP LG *C*
02YK010	Grand Lake East of Grand Lake Brook	1988		H R C	DCP LG RMT MET *A*
02YM004	Indian Brook Diversion above Birchy Lake	1990		Q R C	DCP LG MET *A E*
02ZM020	Leary Brook at Prince Philip Drive	1985	17.8	Q R C	LG *A*
02ZK003	Little Barachois River near Placentia	1983	37.2	Q R C	DCP LG *A B*
02ZK004	Little Salmonier River near North Harbour	1983	104	Q R C	DCP LG *A B*
02ZM006	Northeast Pond River at Northeast Pond	1953	3.63	Q R C	DCP LG *A B*
02ZM022	Raymond Brk at Outlet of Bay Bulls Big Pond	1988		Q R C	LG REG *A B*
02ZJ002	Salmon Cove River near Champneys	1983	73.6	Q R C	DCP LG *A B*
02ZL004	Shearstown Brook at Shearstown	1983	28.9	Q R C	DCP LG *A B*
02YL004	South Brook at Pasadena	1983	58.5	Q R C	DCP *LG A* C *E*
02ZN002	St. Shotts River near Trepassey	1985	15.5	Q R C	DCP LG *A*
02YN004	Star Brook above Star Lake	2000	276	QRC	DCP LG RMT *A E CHI*

[19 P stations]

OTHER (Agreement)

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03OC003	Atikonak River above Panchia Lake	1972	15,100	QRC	DCP LG RMT WQ *A* LHP
03OD007	East Metchin River below highway bridge	1998	1750	QRC	DCP LG RMT WQ *A* LHP
03OE003	Minipi River below Minipi Lake	1979	2330	QRC	DCP LG RMT WQ *A* LHP
03PB002	Naskaupi River below Naskaupi Lake	1978	4480	QRC	DCP LG RMT WQ *A* LHP
03OE011	Pinus River	1998	772	QRC	DCP LG RMT WQ *A* LHP

[5 O(A) stations]

OTHER

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03OE001	Churchill River above Upper Muskrat Falls	1948	92500	QRC	DCP LG REG RMT WQ *A* N&LH
02ZD002	Grey River near Grey River	1969	1340	Q R C	DCP LG RMT LRTAP MET *A E* N&LH
03OA006	Julienne Lake below Wabush Lake	1999		HRC	DCP LG RMT *A* IOCC
03OA005	Wabush Lake at Lake Outlet	1999		QRC	DCP LG RMT *A* IOCC
02ZC003	White Bear River above Big Indian Brook	1996		QRS	DCP LG REG RMT *A* N&LH

[5 O stations]

CONTRIBUTED STATIONS

STA. NO.	STATION NAME	ESTAB.	D.A.	AGENCY	REMARKS
03OA001	Ashuanipi River at Menihek Rapids	1952	19000	IOCC	REG RMT
03OC006	Atikonak River at Gabbro Lake	1973	21400	CFLCO	REG73 RMT
03OD006	Atikonak River at Ossakmanuan Lake Control Structure	1977		CFLCO	REG64 RMT
03OD005	Churchill River at Churchill Falls Powerhouse	1972	69200	CFLCO	REG71 RMT
02YL002	Corner Brook at Watsons Brook Powerhouse	1959	127	DLPCL	REG
02YO001	Exploits River at Grand Falls	1914	8390	AB-CONSL	REG
02YK006	Hinds Brook at Hinds Brook Powerhouse	1981	651	N&LH	REG81
02YK001	Humber River at Grand Lake Outlet	1898	5020	DLPCL	REG
02ZM003	Mobile River at Mobile First Pond	1962	112	NLPCL	REG
02ZM001	Petty Harbour River at Second Pond	1962	134	NLPCL	REG
02ZM002	Pierres Brook at Gull Pond	1962	117	NLPCL	REG
02YO003	Rattling Brook at Rattling Brook Powerhouse	1962	378	NLPCL	REG
02ZE003	Salmon River at Bay D'Espoir Powerhouse	1967	5910	N&LH	REG67
02YO004	Sandy Brook at Sandy Brook Powerhouse	1964	508	NLPCL	REG

[14 contrib. Stations]

EXPLANATION OF SYMBOLS & ABBREVIATIONS

TYPE OF RECORD

H _ water level data

Q - flow data

TYPE OF GAUGE

M - manual gauge

R - automatic recording gauge

OPERATION SCHEDULE

C - continuous record

M - miscellaneous record

S - seasonal record

REMARKS

DCP - data collection platform

LRTAP - samples collected for acid precipitation monitoring

MET - data available from meteorological sensors

REG - regulated flow REG78 - regulated flow since 1978

RMT - remote station accessed by aircraft

TMK - telephone interrogated telemark

TYP - typical stream; data used to produce statement on runoff conditions

WQ - samples collected for water quality national overview network

LG - data recorded by digital data Logge

A - building of any type on the site; California shelter incl

B - well

C - power and/or telephone

E - cableway

N&LH - Newfoundland and Labrador Hydro

LHP - Labrador Hydro Project

NLPCL - Newfoundland light and power company limited

DLPCL - Deer lake power company limited

AB-CONSL - Abitibi – Consolidated

CHI - Consolidated Hydro Incorporated

HUMBER RIVER DATA COLLECTION NETWORK

Real Time Instrumentation To Be Operated and Maintained By Water Survey of Canada In Accordance With Memorandum of Understanding.

Station		Response Time
1.	Burgeo Road near Buchans Access	48 Hrs.*
2.	Grand Lake at Southwest End	48 Hrs.
3.	Grand Lake on Glover Island	48 Hrs.*
4.	Upper Humber River above Black Brook	48 Hrs.
5.	Corner Brook Lake at Lake Outlet	48 Hrs.*
6.	Sandy Lake at Howley Road	48 Hrs.*
7.	Indian Brook Diversion to Birchy Lake	48 Hrs.
8.	Lewassechjeech Brook at Little Grand Lake	48 Hrs.
9.	Sheffield Brook near T.C.H.	48 Hrs.
10.	Humber River at Humber Village Bridge	48 Hrs.
11.	Upper Humber River near Reidville	48 Hrs.
12.	Deer Lake near Generating Station	48 Hrs.
13.	Aides Lake	48 Hrs*
14.	Hinds Lake	48 Hrs*

* precipitation guage

Station 8-12 are not equipped with meteorological sensors but are included in this list of "Response Time Repair" due to the significance of the data in supporting the "Humber River Basin Data Collection Network".

APPENDIX II

SCHEDULE D

SUMMARY OF ANNUAL PAYMENT

SCHEDULE D

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

ANNUAL PAYMENT FOR 2001-2002 TO BE PAID TO THE RECEIVER GENERAL FOR CANADA BY THE PROVINCE OF NEWFOUNDLAND

	Operation	**Construction**	**Total**
a) Streamflow and Water level installation: **Island**	$164,318.29		$164,318.29
b) Streamflow and Water level installations: **Labrador**	$2,678.85		$2,678.85
c) Decommissioning			$0.00
d) Humber met Stations	$5,118.95		$5,118.95
e) Newfoundland & Labrador Hydro	$148,885.00		$148,885.00
f) Reduction from Commercial Activity	-$23,904.91		-$23,904.91
g) Credit for Star Lake direct billing for 2001 only	-$10,915.00		-$10,915.00
	Total Annual Payment		$286,181.18

M. G. Goebel
Director, water Resources Management Division
Department of Environment and Labour

Administrator for Province

D. Wartman
A/Director
Meteorological Service of Canada
Atlantic Region

Administrator for Canada

APPENDIX III

MINUTES OF COORDINATING COMMITTEE MEETING

Minutes
Canada-Newfoundland Water Agreement Meeting
May 14 2002
St. John's Newfoundland

Attendees: Environment Canada
John Merrick
Bill Brimley
Calvin Baker
Howie Wills
Tom Pollock
Geoff Howell
Art Cook

Attendees; Newfoundland Department of Environment and Labour
Martin Goebel
Haseen Khan
Ken Rollings

1. Opening Remarks

John Merrick

- federal succession planning – anticipated retirements of Bill Brimley, Calvin Baker and Fred Lindeijer, - new technologist recruits in WSC, arrival of Perry Pretty in Newfoundland office.
- water engineering planning in Branch – three water engineers anticipated for Meteorological Service of Canada within a year for hydrometric and water science programs.
- changes coming for climate program at both volunteer and reference stations. National network review and need for paperless data entry.
- Planning for YYT water meeting in Oct 2002
- intro of Howie Wills as senior tech in office

Martin Goebel

- progress in drinking water programs – new data manager for water programs and for web based applications.
- Some mobile staff resources for training will contribute to overall program
- water resources legislation is passed and will be signed to law shortly along with a new environmental protection act. Act increases potential for studies, regulation, water rights registry and usage charges, etc.

Haseen Khan

- tribute to Tom for his work over the period with the province. Expressions of appreciation to Bill as well just in case this is his last year too.

Tom Pollock

- Tom's swan meeting.
- Comments on ambitious program that Newfoundland has, satisfaction with progress and future. -
- passing torch to Geoff Howell, Manager of Environmental Science Interpretation Division.

Geoff Howell

– boosted lab profile & profile of ECB water. bringing water quality people back together into a science group,
- developing automated water quality sys.
- Group of four tools for data info and web tool development.
- brought all of the GIS and data management groups into program with new tools, new staff and expertise.
- Northern ecosystem initiative work.

2. **Annual Hydrometric Agreement Report**

<u>cost planner review, schedules A&D,</u>
- last year, staff shortages caused some repairs to be delayed
- this year, salary increases will be seen due to new staff and new contracts.
- station units changed in Jan, taking some stations out of agreement into NFLH contract
- chart showing 1975 costs per station, vs 75 costs ramped by CPI to 2000, vs 2002 actual costs.
- Some discussion of contracts included here for clarification of overall costing and the development of Sched D
- noted by Haseen that Province can only raise 301K leaving a shortfall of ~~10K

3. - consider some form of in-kind work to reduce that balance.
- Discussion on how to deal with creeping costs – e.g., chopper charters, etc.
- Risk management recognition of fact that contracts are providing substantial support to program. Loss of a contract could mean significant impact. Need for a contingency plan in event of contract loss.
- Schedules A and D were tabled and accepted.
- Summary chart of annual costs up to 2001-02 was tabled and will be updated to include 2002-03 . Sum of Annual costs shown on cost planner indicates a reduction in amounts owed to NF by Environment Canada.

ACTION Howell/Brimley: water quality sampling to be picked up in Southern Labrador by MSC to aid ECB/Pollock-Howell. Opportunities on Bruce Turners side for ECB. Will talk offline re sampling schedules on both side (WSC/ECB). Agreement of a 5K contribution to MSC from ECB for water quality sampling during South Labrador runs and air charter time

ACTION Brimley: need a letter from Environment Canada by last week of August describing the anticipated operational hydrometric cost increases for each of five years. Leave out mention of indirect cost increases beginning next year.

ACTION Khan/Brimley: develop a contingency plan for loss of a contract.

4. Contracts

- 4 days have been included for data processing for contract stations

IOCC

-background on previous arrangements with Golder Associates and Jacques and Acres
- only a 6 month contract with EC
- cost projections based on assumption that contract will be ongoing
- WSC installed 8 sites last fall.

Triton Brook

- initiative between fed/fisheries/agrifoods/province to assess impacts of logging on water conditions upstream of Gambo pond.
- Anticipate 5-10 year project

5. **HYDAT CD**

- latest one is late but is expected to be in the mail shortly.
- This will be the last national CD – large pressing. May be regional ones. Quebec missing due to lateness of data processing.
- Cost to others will be the cost of producing ~~$100.
- Web based sources will allow downloads by station not by groups of stations due to bandwidth considerations.

6. **Decommissioning of mothballed SITES**

- Hg cleanup. Short description of assessment and cleanup process. Originally 50 sites now down to 20 to be completely decommissioned. Report to be provided to province by Environment Canada mid-summer. Cleanup to be continued this year. Regional cleanup costs are about 50% of national average. Bill Brimley is in process of developing MOU to describe our standards and request approval for those standards to be accepted by Newfoundland.
– Haseen requested a separate/ letter MOU for costs.

<u>other infrastructure</u>

- discussion of non Hg issues such as decommissioning of cableways, etc.

7. **Agreement renewal**

- awaiting Oct administrator's meeting.

8. **Indirect Costs**

- revised spreadsheet tabled to demonstrate new shareable costs.
- impact on Newfoundland will be approximately 36.7K beginning 1 Apr 2003.
- Need a mechanism to deal with one time injections of large costs.

- Province has compiled a list of in-kind contributions by NF, by project and hours/ days. No $

values assigned as of yet.
- Request for preliminary costing.

ACTION Khan: Soft copy of provincial in-kind contributions to be sent for inclusion in minutes.

ACTION Brimley: federal Indirect costing template to be provided to Newfoundland.

9. **Met Climate stations (Ken Rollings)**

- changes coming for climate program both volunteer and reference stations
- network review / keep in view water relationships / areal coverage of province / need for real time precipitation data
- reductions in national network – largely out west. Most of regional sites in Atlantic are not at risk, mainly because of the provincially funded network.
- At risk are stations which will not or cannot move to automated data entry.
- Invoicing problem from March 2002 sorted out and corrections being applied.
– the necessity for keeping the Newfoundland network from shrinking was emphasized.

10. **Water quality agreement**

PROVINCE

prepared an annual work schedule 2002-03 based on Moncton discussions. Contains minutes of last year's meetings

water quality index. Province involved since 1996. Used CCME model. Modified CCME model and added new features. Going on NF web shortly. Currently only freshwater but saltwater will be incorporated if fisheries interested. Tested for drinking quality and aquatic life.
Reduced numbers of sites, stable data sites,
copies of annual work schedule 2002-03 to Calvin for reference.

Province: Prepared a site documentation report. Includes….
Province: Planning on preparing fact sheets on selected rivers.

Fed province cooperation with Geoff's unit with respect to data management.

Mention of collection of sediment samples by province.

Northern ecosystem initiative.
Province is interested in getting any done. Ashkui conference doc being finalized. Short discussion on ashkui identification.

ACTION Geoff: will forward other documents to Haseen.

Water wizard project underway with funds from Ottawa with respect to water questions from public, providing access to a variety of data bases

established a real time water quality station last year. This year two more planned.

FEDERAL
mention of credits with Burlington
new capabilities to analyze wastewater chemicals

creativity

2-3 months support scheduled from Geoff's unit for on site work in NF.

Minutes on Water Quality Agreements.

Haseen Khan has prepared the Agreement annual work schedule and circulated copies. The Work Schedule will be reviewed, edited and then signed by off by the Provincial and Federal Administrators.

ACTION Howell & Goebel

Water Quality Index -started in 1996.The province has a long history in the development water quality indices and has been active in the development of CCME Index. They are in the process of modifying the Index to add new features and to make it more user friendly. The current focus is to expand the index to look at freshwater aquaculture with the potential to consider a marine aquaculture application. There was discussion on building better connections on the indicators front and an offer was extended to Vincent Mercier to visit the province in the near future.

Haseen indicated interest in the Northern Ecosystem Initiative work in Labrador and asked that any publications related to this work be sent to the province.

Action : Geoff Howell

The province is looking into potential site reduction and is initiating an optimization study. This will hopefully provide flexibility in the system to enable new projects and studies. Given the changes to the program over the past few years, the province will be updating the Site Documentation Report. Other proposed publications include river specific fact sheets and a drinking water survey report.

Haseen mentioned data backlogs and delays in getting information on the website. This should be remedied with the new data management position. The province will contact Sarah Hall to discuss potential collaboration in this area.

ACTION Khan

Tom Pollock initiated a discussion on moving from standard water quality parameters (e.g. metals, major ions and nutrients) to some of the new and exotics measures related to issues such as

pharmaceuticals and MWWE. The potential for these analyses now exists in the Moncton lab but we need to work together to maximize capability and look for flexibility.

There was also some discussion on in situ water quality monitoring with 3 Hydrolabs being installed at Learys Brook, Gander River and Humber River.

New items

- Haseen mentioned the backlog in annual reports, and that updates are needed in order to be prepared for an anticipated audit.

ACTION Brimley: bring all annual reports up to date.

- Discussion of storm Gabriel and impacts on water flow and the maximum flow recalculations made necessary – example was Leary Brook. Peak measurement resulted in 2 weeks of work refining extension on the curve, then re-assessing all other related curves. All previous high water projections over period of record were reviewed. From 1995 on used Compumod, but did go back and review others. Before 1995 used a manual digitizing process which enables instantaneous flows but much work is needed to provide daily/annual monthly data which are on Vax files. Work is ongoing.

APPENDIX IV

OTHER CORRESPONDENCE