

CANADA-NEWFOUNDLAND WATER QUALITY MONITORING AGREEMENT

ANNUAL WORK SCHEDULE 2000-2001

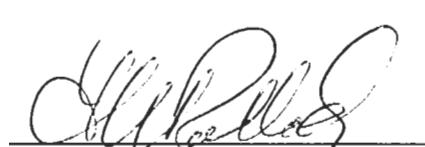


Water Resources Management Division
Department of Environment & Labour
St. John's, Newfoundland

Ecosystem Science Division
Environmental Conservation Branch
Environment Canada
Moncton, New Brunswick

**Canada-Newfoundland
Water Quality Monitoring Agreement
Annual Work Schedule 2000-2001**

The attached Schedules A, B, C, and D outline work activities to be carried out during the current fiscal year under the Canada-Newfoundland Water Quality Monitoring Agreement. All four Schedules have been reviewed and approved by the Administrators of the Agreement.



Tom Pollock, Ph. D.
Administrator, on behalf of
Environment Canada



Martin Goebel, P.Eng.
Administrator, on behalf of
Newfoundland Environment

Schedule A

Agreement Committees

Schedule A

The following officials are named to administer this Agreement according to Article x:

Dr. Tom Pollock Environment Canada Atlantic Region, on behalf of Canada

Mr. Martin Goebel Newfoundland Department of Environment & Labour, on behalf of Newfoundland

The Administrators will be assisted by a Coordinating Committee consisting of the following:

Dr. Tom Pollock Environment Canada Atlantic Region

Mr. Haseen Khan Water Resources Management Division, Newfoundland
Department of Environment & Labour

Schedule B

**Station Location, Designation
and Sampling Frequency**

Schedule B

Index Station Location, Designation and Sampling Frequency 2000-2001

| Station # | Description | Latitude | Longitude | Samples/year Sampled By | Remarks |
|----------------------|--------------------|----------|-----------|----------------------------|---------|
| <u>Island</u> | | | | | |
| NF02YA0001 | Ste. Genevieve | 51 08 17 | 56 47 30 | P 4 | |
| NF02YC0001 | Torrent River | 50 36 44 | 57 10 05 | F 6 | |
| NF02YE0005 | Western Brook | 49 49 49 | 57 51 23 | P 12 | |
| NF02YG0001 | Main River | 49 46 10 | 56 54 15 | P6 | |
| NF02YH0018 | Lomond River | 49 24 07 | 57 43 49 | P 12 | |
| NF02YJ0004 | Pinchgut Brook | 48 47 51 | 58 03 43 | P6 | |
| NF02YJ0006 | Harrys River | 48 34 32 | 58 21 48 | F 12 | |
| NF02YL0011 | Humber River | 49 20 54 | 57 14 07 | P 6 | |
| NF02YL0012 | Humber River | 48 59 01 | 57 45 40 | P 6 | |
| NF02YL0013 | Corner Brook | 48 56 40 | 57 56 12 | P 12 | |
| NF02YL0029 | Wild Cove Brook | 48 58 28 | 57 53 02 | P 12 | |
| NF02YM0004 | South West Brook | 49 55 15 | 56 13 45 | P 4 | |
| NF02YN0001 | Lloyds River | 48 18 16 | 57 43 07 | P 4 | |
| NF02YN0036 | Star Brook | 48 33 43 | 57 12 22 | P 4 | |
| NF02YN0038 | Exploits River | 49 01 15 | 55 27 15 | P 6 | |
| NF02YN0039 | Corduroy Brook | 48 56 21 | 55 39 47 | P 12 | |
| NF02YO0001 | Exploits River | 48 55 27 | 55 39 21 | P 6 | |
| NF02YO0020 | Exploits River | 48 56 55 | 55 54 56 | P 6 | |
| NF02YO0021 | Exploits River | 49 00 40 | 55 28 55 | P 6 | |
| NF02YO0107 | Exploits River | 48 45 34 | 56 35 32 | P 6 | |
| NF02YO0128 | Exploits River | 48 56 12 | 55 37 05 | P 6 | |
| NF02YQ0006 | NorthW. Gander R. | 48 34 54 | 55 30 20 | P 6 | |
| NF02YQ0030 | Gander River | 48 59 41 | 54 52 04 | P 6 | |
| NF02YR0001 | Pound Cove Brook | 49 10 40 | 53 33 36 | P 4 | |
| NF02YR0021 | Middle Brook | 48 48 08 | 54 13 34 | P 4 | |
| NF02YS0001 | Terra Nova River | 48 30 27 | 54 12 43 | P 6 | |
| NF02YS0005 | Southwest Brook | 48 36 36 | 53 48 36 | P 6 | |
| NF02YS0011 | Terra Nova River | 48 38 27 | 54 02 11 | P 6 | |
| NF02YS0083 | Northwest River | 48 23 44 | 54 11 53 | P 6 | |
| NF02ZA0006 | Grand Codroy R. | 47 52 08 | 59 07 05 | P 4 | |
| NF02ZA0007 | Crabbe's River | 48 10 30 | 58 46 23 | P 4 | |
| NF02ZB0001 | Isle Aux Morts R. | 47 36 50 | 59 00 33 | F 6 | |
| NF02ZB0005 | Cing Cerf Brook | 47 42 40 | 58 08 47 | P 4 | HS |
| NF02ZC0001 | Grandy Brook | 47 51 25 | 57 44 00 | F 6 | HS |
| NF02ZC0011 | White Bear River | 47 48 29 | 57 16 40 | F 4 | HS |
| NF02ZD0003 | Grey River | 47 44 35 | 56 56 03 | F 6 | HS |
| NF02ZF0020 | Bay du Nord River | 47 44 45 | 55 26 23 | F 6 | HS |
| NF02ZG0016 | Garnish River | 47 13 00 | 55 19 48 | F 6 | |
| NF02ZG0024 | Tides Brook | 47 07 39 | 55 15 55 | P 4 | |
| NF02ZH0001 | Pipers Hole R. | 47 55 51 | 54 16 25 | F 12 | |
| NF02ZJ0024 | Southern Bay River | 48 22 24 | 53 40 19 | P 4 | |
| NF02ZK0001 | Rocky River | 47 13 38 | 53 34 09 | F 12 | |
| NF02ZK0005 | Northeast River | 47 16 23 | 53 50 25 | P 12 | |
| NF02ZL0029 | Goulds Brook | 47 30 18 | 53 17 28 | P 4 | |

| | | | | |
|------------|-------------------|----------|----------|------|
| NF02ZM0004 | Waterford River | 47 31 19 | 52 48 29 | P 6 |
| NF02ZM0009 | Waterford River | 47 31 46 | 52 44 34 | P 6 |
| NF02ZM0014 | Virginia River | 47 35 02 | 52 41 29 | P 12 |
| NF02ZM0015 | Quidi Vidi Outlet | 47 35 02 | 52 40 51 | P 6 |
| NF02ZM0016 | Rennies River | 47 34 40 | 52 42 03 | P 12 |
| NF02ZM0017 | Raymond Brook | 47 26 31 | 52 46 20 | P 2 |
| NF02ZM0098 | Virginia River | 47 35 56 | 52 45 17 | P 6 |
| NF02ZM0109 | Mundy Pond | 47 33 40 | 52 44 38 | P 6 |
| NF02ZM0144 | Kelly's Brook | 47 34 28 | 52 42 45 | P 6 |
| NF02ZM0175 | Waterford River | 47 31 34 | 52 45 48 | P 6 |
| NF02ZM0176 | South Brook | 47 31 41 | 52 44 48 | P 6 |
| NF02ZM0177 | Rennies River | 47 34 28 | 52 42 36 | P 6 |
| NF02ZM0178 | Learys Brook | 47 34 21 | 52 44 21 | P 6 |
| NF02ZM0179 | Virginia River | 47 35 47 | 52 42 06 | P 6 |
| NF02ZM0180 | Virginia River | 47 35 59 | 52 42 02 | P 6 |
| NF02ZM0181 | Waterford River | 47 32 53 | 52 43 09 | P 12 |
| NF02ZM0182 | Waterford River | 47 31 07 | 52 51 21 | P 6 |
| NF02ZM0183 | Kelligrews River | 47 29 45 | 53 01 03 | P 4 |
| NF02ZM0184 | Learys Brook | 47 34 16 | 52 47 29 | P 6 |
| NF02ZM0185 | South Brook | 47 29 37 | 52 51 02 | P 6 |
| NF02ZM0186 | Nut Brook | 47 26 24 | 52 58 22 | P 2 |
| NF02ZN0002 | Northwest Brook | 46 45 33 | 53 23 25 | P 4 |
| NF02ZN0004 | Salmonier River | 47 10 54 | 53 23 56 | P 6 |

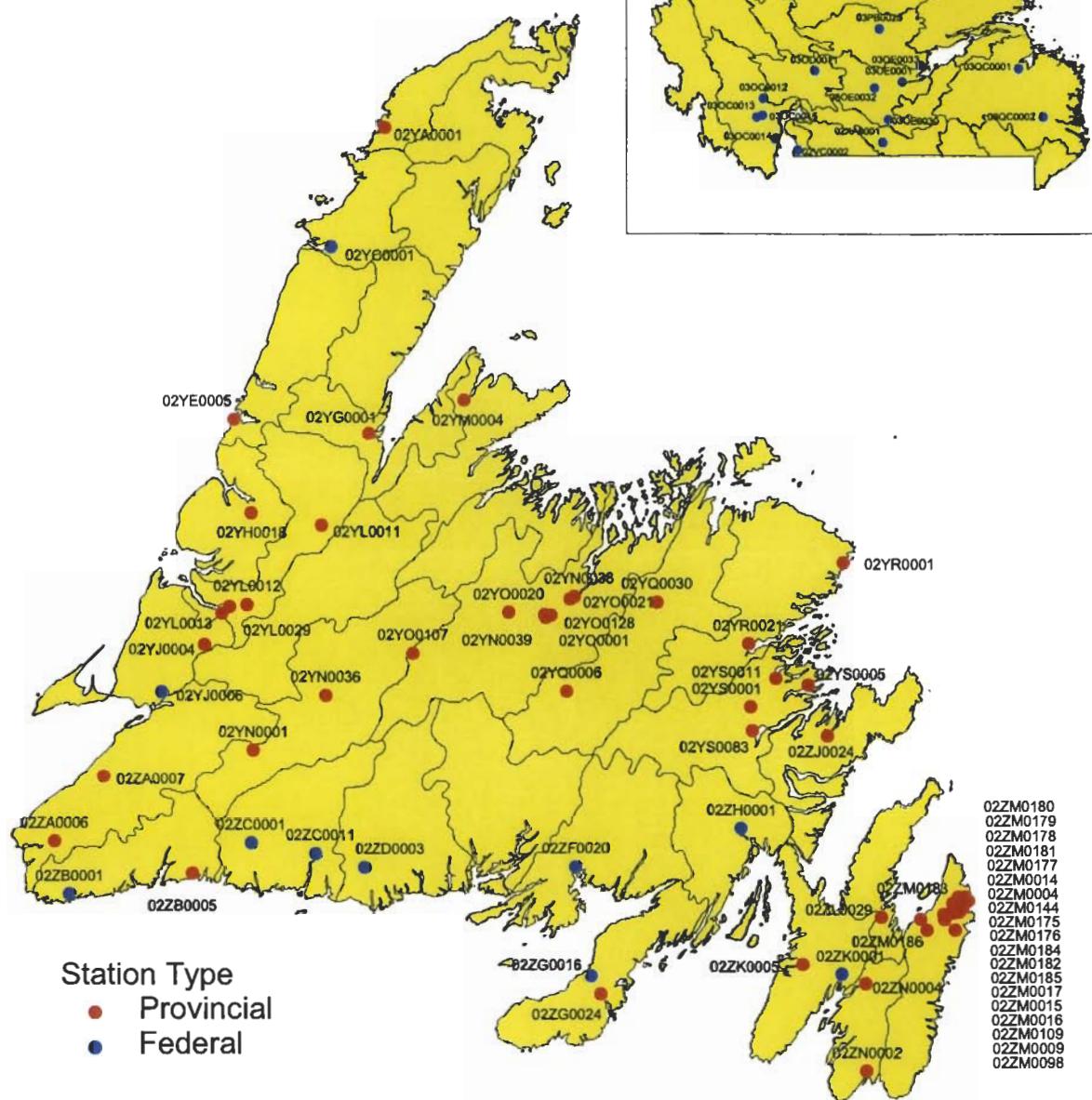
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| | | | | | |
|------------|-----------------------|----------|----------|-----|----|
| NF02XA0001 | Little Mecatina River | 52 13 42 | 61 19 32 | F 4 | HS |
| NF02VC0002 | Romaine River | 52 05 46 | 63 42 22 | F 4 | HS |
| NF03NF0013 | Ugjoktok River | 55 13 60 | 61 17 57 | F 4 | HS |
| NF03OC0012 | Atikona River | 52 58 03 | 64 39 40 | F 4 | HS |
| NF03OC0013 | Kipimits River | 52 39 12 | 64 50 45 | F 4 | HS |
| NF03OC0014 | Atikona River | 52 17 14 | 64 19 40 | F 4 | HS |
| NF03OC0015 | Atikona Lake | 52 41 16 | 64 41 22 | F 4 | HS |
| NF03OD0011 | East Metchin River | 53 26 07 | 63 14 03 | F 4 | HS |
| NF03OE0001 | Churchill River | 53 14 52 | 60 47 21 | F 4 | HS |
| NF03OE0030 | Minipi River | 52 36 53 | 61 11 11 | F 4 | HS |
| NF03OE0032 | Pinus River | 53 08 52 | 61 33 31 | F 4 | HS |
| NF03OE0033 | Big Pond Brook | 53 30 43 | 60 17 31 | F 4 | HS |
| NF03PB0025 | Naskaupi River | 54 07 54 | 61 25 45 | F 4 | HS |
| NF03QC0001 | Eagle River | 53 27 54 | 57 33 29 | F 4 | HS |
| NF03QC0002 | Alexis River | 52 38 57 | 56 52 17 | F 4 | HS |

HS - Helicopter site

Note: 1. A total of 80 stations will be sampled during 2000-2001.
 2. Monthly stations will be sampled in the first week of every month; bi-monthly samples in the first week of April, June, August, October, December, and February and quarterly samples in the first week of April, July, October, and January.
 3. Lake sampling program in Gros Morne National Park may also continue subject to the availability of funds from Environment Canada.

Water Quality Stations 2000-2001



Schedule C
Sampling Media and Analytical Parameters

Schedule C

**Sampling Media and Analytical
Parameters 2000 - 2001**

| Station # | Description | Sampling Media | Analytical Group | Analyzed by: |
|----------------------|--------------------|----------------|------------------|--------------|
| <u>ISLAND</u> | | | | |
| NF02YA0001 | Ste. Genevieve | W | W1, W2, W3 | F |
| NF02YC0001 | Torrent River | W | W1, W2, W3 | F |
| NF02YE0005 | Western Brook | W + M | W1, W2, W3, W5 | F |
| NF02YG0001 | Main River | W | W1, W2, W3 | F |
| NF02YH0018 | Lomond River | W + M | W1, W2, W3, W5 | F |
| NF02YJ0004 | Pinchgut Brook | W | W1, W2, W3 | F |
| NF02YJ0006 | Harrys River | W | W1, W2, W3 | F |
| NF02YL0011 | Humber River | W + M | W1, W2, W3, W5 | F |
| NF02YL0012 | Humber River | W + M | W1, W2, W3, W5 | F |
| NF02YL0013 | Corner Brook | W + M | W1, W2, W3, W5 | F |
| NF02YL0029 | Wild Cove Brook | W + M | W1, W2, W3, W5 | F |
| NF02YM0004 | South West Brook | W | W1, W2, W3 | F |
| NF02YN0001 | Lloyds River | W | W1, W2, W3 | F |
| NF02YN0036 | Star Brook | W | W1, W2, W3 | F |
| NF02YN0038 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YN0039 | Cordroy Brook | W + M | W1, W2, W3, W5 | F |
| NF02YO0001 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YO0020 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YO0021 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YO0107 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YO0128 | Exploits River | W + M | W1, W2, W3, W5 | F |
| NF02YQ0006 | NorthW. Gander R. | W | W1, W2, W3 | F |
| NF02YQ0030 | Gander River | W + M | W1, W2, W3, W5 | F |
| NF02YR0001 | Pound Cove Brook | W | W1, W2, W3 | F |
| NF02YR0021 | Middle Brook | W | W1, W2, W3 | F |
| NF02YS0001 | Terra Nova R | W + M | W1, W2, W3, W5 | F |
| NF02YS0005 | Southwest Brook | W + M | W1, W2, W3, W5 | F |
| NF02YS0011 | Terra Nova River | W + M | W1, W2, W3, W5 | F |
| NF02YS0083 | Northwest River | W | W1, W2, W3 | F |
| NF02ZA0006 | Grand Codroy R. | W | W1, W2, W3 | F |
| NF02ZA0007 | Crabbe's River | W | W1, W2, W3 | F |
| NF02ZB0001 | Isle Aux Morts R. | W | W1, W2, W3 | F |
| NF02ZB0005 | Cing Cerf Brook | W | W1, W2, W3 | F |
| NF02ZC0001 | Grandy Brook | W | W1, W2, W3 | F |
| NF02ZC0011 | White Bear River | W | W1, W2, W3 | F |
| NF02ZD0003 | Grey River | W | W1, W2, W3 | F |
| NF02ZF0020 | Bay du Nord River | W | W1, W2, W3 | F |
| NF02ZG0016 | Garnish River | W | W1, W2, W3 | F |
| NF02ZG0024 | Tides Brook | W | W1, W2, W3 | F |
| NF02ZH0001 | Pipers Hole R. | W | W1, W2, W3 | F |
| NF02ZJ0024 | Southern Bay River | W | W1, W2, W3 | F |
| NF02ZK0001 | Rocky River | W | W1, W2, W3 | F |
| NF02ZK0005 | Northeast River | W | W1, W2, W3 | F |
| NF02ZL0029 | Goulds Brook | W + M | W1, W2, W3, W5 | F |

| | | | | |
|------------|-------------------|-------|----------------|---|
| NF02ZM0004 | Waterford River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0009 | Waterford River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0014 | Virginia River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0015 | Quidi Vidi Outlet | W + M | W1, W2, W3, W5 | F |
| NF02ZM0016 | Rennies River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0017 | Raymond Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0098 | Virginia River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0109 | Mundy Pond | W + M | W1, W2, W3, W5 | F |
| NF02ZM0144 | Kelly's Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0175 | Waterford River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0176 | South Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0177 | Rennies River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0178 | Learys Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0179 | Virginia River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0180 | Virginia River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0181 | Waterford River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0182 | Waterford River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0183 | Kelligrews River | W + M | W1, W2, W3, W5 | F |
| NF02ZM0184 | Learys Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0185 | South Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZM0186 | Nut Brook | W + M | W1, W2, W3, W5 | F |
| NF02ZN0002 | Northwest Brook | W | W1, W2, W3 | F |
| NF02ZN0004 | Salmonier River | W + M | W1, W2, W3, W5 | F |

LABRADOR

| | | | | |
|------------|-----------------------|---|------------|---|
| NF02XA0001 | Little Mecatina River | W | W1, W2, W3 | F |
| NF02VC0002 | Romaine River | W | W1, W2, W3 | F |
| NF03NF0013 | Ugioktok River | W | W1, W2, W3 | F |
| NF03OC0012 | Atikonak River | W | W1, W2, W3 | F |
| NF03OC0013 | Kipimiits River | W | W1, W2, W3 | F |
| NF03OC0014 | Atikonak River | W | W1, W2, W3 | F |
| NF03OC0015 | Atikonak Lake | W | W1, W2, W3 | F |
| NF03OD0011 | East Metchin River | W | W1, W2, W3 | F |
| NF03OE0001 | Churchill River | W | W1, W2, W3 | F |
| NF03OE0030 | Minipi River | W | W1, W2, W3 | F |
| NF03OE0032 | Pinus River | W | W1, W2, W3 | F |
| NF03OE0033 | Big Pond Brook | W | W1, W2, W3 | F |
| NF03PB0025 | Naskaupi River | W | W1, W2, W3 | F |
| NF03QC0001 | Eagle River | W | W1, W2, W3 | F |
| NF03QC0002 | Alexis River | W | W1, W2, W3 | F |

W - Water

S - Sediment

B - Biota

F - Federal lab

M - Microbiology

* Refer to Table C.1 for analytical group codes

Notes:

1. Microbiological (total and fecal coliform) analysis is carried out by the Provincial Public Health Lab.
2. All other analytical work is carried out by federal labs in Burlington and Moncton
3. A total of 500 (400 Burlington and 100 Moncton) water samples will be analyzed by federal labs in Burlington and Moncton.
4. Water quality parameters (temperature, pH, dissolved oxygen, and conductivity) are analyzed by Water Quality Officers in the provincial environment lab, as well as by Burlington and Moncton labs.

Table C.1
Analytical Parameters

| Parameter Set | Analysis Type | Parameter Group | |
|---|---------------|-----------------|----|
| 1) Water - Physical Parameters, Major Ions and Nutrients | | | |
| Temperature | Field | W1 | |
| pH | Field & Lab | W1 | |
| Specific Conductance | Field & Lab | W1 | |
| Dissolved Oxygen | Field | W1 | |
| Turbidity | Lab | W1 | |
| Colour | Lab | W1 | |
| Calcium (Diss.) | Lab | W1 | |
| Magnesium (Diss.) | Lab | W1 | |
| Potassium (Diss.) | Lab | W1 | |
| Sodium (Diss.) | Lab | W1 | |
| Alkalinity Total or Gran | Lab | W1 | |
| Chloride (Diss.) IC | Lab | W1 | |
| Sulphate (Diss.) IC | Lab | W1 | |
| Dissolved Organic Carbon | Lab | W1 | |
| Total Nitrogen | Lab | W1 | |
| Nitrate and Nitrite (Diss.) | Lab | W1 | |
| Total Phosphorus | Lab | W1 | |
| Silica Reactive | Lab | W1 | |
| 2) Water - Total Extractable Metals | | | |
| Aluminum | Barium | ICAP | W2 |
| Iron | Beryllium | ICAP | W2 |
| Copper | Chromium | ICAP | W2 |
| Zinc | Manganese | ICAP | W2 |
| Cadmium | Molybdenum | ICAP | W2 |
| Lead | Lithium | ICAP | W2 |
| Cobalt | Strontium | ICAP | W2 |
| Nickel | Vanadium | ICAP | W2 |
| Mercury | | Lab | W2 |

| Parameter Set | Analysis Type | Parameter Group |
|--|---------------|-----------------|
| 3) Water - Total Dissolved Metals | | |
| Aluminum | Lab | W3 |
| Iron | Lab | W3 |
| Copper | Lab | W3 |
| Zinc | Lab | W3 |
| Cadmium | Lab | W3 |
| Lead | Lab | W3 |
| Cobalt | Lab | W3 |
| Nickel | Lab | W3 |
| Mercury | Lab | W3 |
| 4) Water - Selected Organics | | |
| OC/PCB | Lab | W4 |
| 5) Water - Bacterias | | |
| Total coliform | Lab | W5 |
| Fecal Coliform | Lab | W5 |
| 6) Sediments - Metals and Organics | | |
| Lead | Lab | S1 |
| Copper | Lab | S1 |
| Zinc | Lab | S1 |
| Mercury | Lab | S1 |
| Iron | Lab | S1 |
| Aluminum | Lab | S1 |
| Cadmium | Lab | S1 |
| Chromium | Lab | S1 |
| OC/PCB | Lab | S1 |
| Organic Carbon | Lab | S1 |
| Particle Size Analysis | Lab | S1 |
| 7) Fish - Metals, Organics and Physiology | | |
| Lead | Lab | B1 |
| Copper | Lab | B1 |
| Zinc | Lab | B1 |

| Parameter Set | Analysis Type | Parameter Group |
|---------------------------|---------------|-----------------|
| Mercury | Lab | B1 |
| Cadmium | Lab | B1 |
| OC/PCB | Lab | B1 |
| Lipid Content | Lab | B1 |
| Physiology | Lab | B1 |
| 8) Fish - Organics | | |
| Scan | Lab | B2 |

Schedule D

**Data Management and
Technical Reports**

**Schedule D - Data Management and
Technical Reports**

| Activity | Responsible Agency |
|--|--|
| 1. Quality Assurance in the National Water Quality and Moncton Laboratory | Laboratory Environment Canada |
| 1.1 Quality Control Procedures | |
| 1.2 Guidelines for Good Laboratory Practices | |
| 1.3 Guidelines for Instrument Performance | |
| 2. Management Water Quality Data | Environment Canada |
| 2.1 Data Recording, Documentation and Validation | |
| 2.2 Data Screening and Verification | |
| 2.3 Data Audits, Custody and Transfer | |
| 2.4 Management of National Water Quality Database (ENVIRODAT) | |
| 2.5 Downloading and Processing of Water Quality Data | Newfoundland Environment Water Resources Management Division |
| 2.6 Management of Provincial Water Quality Database | Newfoundland Environment Water Resources Management Division |
| 3. Technical Documents | Newfoundland Environment Water Resources Management Division |
| 3.1 Agreement Annual Reports 1998-99 & 1999-00 | |
| 3.2 Fact Sheets on Some Urban Rivers | |
| 3.3 Water Quality of St. John's Rivers | |
| 3.4 Water Quality Trends in Wild Cove Brook | |
| 3.5 State of Water Quality of Newfoundland | |
| 3.6 Water Quality of Exploits River Basin | Newfoundland Environment Water Resources Management Division |
| 3.7 Sampling Protocol Manual | |
| 3.8 Western Brook Pond Sediment Survey | |

Schedule E

Special Studies

Special studies for water, biota and sediment survey will be planned for selected basins.

Schedule F

Meeting Minutes

Canada-Newfoundland Water Quality Monitoring Agreement

Co-ordinating Committee Meeting

Minutes

The Co-ordinating Committee for the Canada-Newfoundland Water Quality Monitoring Agreement, met on March 24, 1997 in the Boardroom of the Department of Environment and Labour. The following members were in attendance:

| | |
|-------------|--|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Wasi Ullah | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. Network Size and Monitoring Activities for 1997-98

Dr. Ullah briefed about 1997-98 budget and expressed hope that the present level of provincial funding will continue for next three years.

Dr. Ullah indicated that as a part of the provincial program review, two positions (Water Quality Manager and Water Quality Officer for the central region) under this Agreement, were made redundant. This will require redesign of the water quality monitoring network. To this end, Dr. Ullah suggested that any changes in the present water quality monitoring network, should maintain adequate coverage to all geographic regions of the province. Haseen agreed to redesign the network.

Haseen provided an overview of the activities undertaken during 1996-97 fiscal year. A total of 62 stations were operated under the Agreement which were sampled according to the designed frequency by the federal and provincial staff.

Dr. Pollock indicated that the federal staff will continue to sample all those stations which were sampled by them in 1996-97. He also indicated that during 1997-98 Environment Canada Lab in Burlington will analyse about 400 water samples for nutrients, ions, metals, and other parameters. These samples are in addition to about 100 samples to be analysed by the Environment Canada Lab in Moncton, which are collected by the federal staff as a part of water quality related activities in Newfoundland.

2. Sample Shipping and Federal Contact Persons

As has been the practice in the past, all samples collected by the Water Resources Management Division will be shipped to Environment Canada Lab in Burlington and the samples collected by the federal staff will be shipped to Environment Canada Lab in Moncton. Wendy Charlton will remain the federal contact person in Burlington Lab.

3. Water Quality Database

Haseen informed that with the help of Environment Canada staff in Moncton, we have down loaded nine years (1986 to 1994) of water quality data from the NAQUADAT database for all stations operated under the Agreement. All data sets have been processed and are ready to be used for any type of analysis. This was quite tedious and time consuming task.

4. Water Quality Index

Haseen gave a brief overview of the approach, formulation, and its application to the Exploits River basin for testing purposes. The results of the index will be used to prepare a report entitled as "Newfoundland Water Quality Status Report". Water Quality Guidelines and State of Environment Reporting Task Groups of the CCME are promoting the use of this approach for the preparation of State of Environment Reports throughout the country.

5. Water Quality Data Requests and Charges

Dr. Ullah informed that we have introduced nominal fees for water quality data requests. The exact amount of fees is decided on a case -by-case basis depending on the record length of the requested data, data processing time, etc. Dr. Pollock expressed his agreement with the concept of data use charges, and indicated that the federal government is also moving in the same direction.

6. Annual Work Plan

After a brief discussion on various activities to be undertaken during 1997-98, it was agreed that an annual work plan be prepared. Haseen agreed to prepare the work plan which will be forwarded to Dr. Pollock for his review and signature.

7. Other Items

(A) It was agreed that work should continue towards the preparation of following documents under this Agreement:

- Annual reports for the following fiscal years: 1994-95, 1995-96, and 1996-97.
- Interpretive reports for each basin monitored under the Agreement.
- Fact sheets for each basin monitored under the Agreement.

(b) Dr. Ullah told the members that this his last meeting as the Provincial Administrator of the Agreement, and he will be retiring from the public services on March 31, 1997. He thanked Dr. Pollock for his excellent cooperation and support.

7. **Next Meeting**

Dr Ullah suggested that the Co-ordinating Committee for the Agreement should meet at least twice every year. It was agreed that one of these two meetings will be held in St. John's and the second in Moncton. Haseen and Tom will fix the next meeting date which will be held in Moncton.

Canada-Newfoundland Water Quality Monitoring Agreement

Progress Review Meeting

Minutes

The Administrators and Coordinators for the Canada-Newfoundland Water Quality Monitoring Agreement, met on September 25, 1997 in Moncton, to review the progress of the annual work plan for 1996-97. The following were in attendance:

| | |
|---------------|--|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Martin Goebel | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Guy Byrn | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. Introductory Remarks

Martin was welcomed as provincial administrator for the Agreement in place of Dr. Wasi Ullah, who retired from the public service on March 31, 1997.

Tom briefed the members about on-going organizational changes in Environment Canada.

Areas of future cooperation such as use of federal lab in Moncton for waste water effluent analysis and similar other analytical services were discussed. Guy Byrn is the federal contact person to work out cost related details, if the province decides to avail the services of the federal lab.

2. Annual Work Schedule 1997-98

After a brief discussion on the annual work plan, it was decided that all activities should continue for the rest of the fiscal year as identified in the work plan.

Tom indicated that the federal government is working on appropriate updates to the ENVIRODAT in order to deal with year 2,000.

3. Annual Work Schedule 1998-99

- Monitoring activities for the next year will be decided once Tom hears from National Lab in Burlington regarding the available credit for 1998-99. Tom will keep us posted on any new development in this area.
- Tom will ensure that Lawrence Wong is available to assist us in data retrieval and processing purposes, however, he needs some time to sort it out.
- Due to organizational changes, Environment Canada will not be able to initiate any new technical documents. However, they will continue to provide technical input on the document prepared by the provincial staff.
- It was agreed in principle that few urban rivers could be sampled for organic parameters. The exact analytical details and number of samples are to be worked out in consultation with Guy.
- Federal representatives were receptive to the provincial initiative of real time water quality monitoring at selected rivers.

4. Staff Training and Communication

- There was discussion on the need for safety training of Regional Water Quality Officers. Tom Pollock will inform Haseen if any such training programs are available within the federal government.

5. Other Business

The following items were discussed

- Getting data from Burlington is not up-to-date.
- Environment Canada Lab in Moncton will have an ICMS unit by the end of this fiscal year.
- Next meeting will be held in St. John's. Haseen and Tom will fix the date at a later date.

Canada-Newfoundland Water Quality Monitoring Agreement

Co-ordinating Committee Meeting

Minutes

The Co-ordinating Committee for the Canada-Newfoundland Water Quality Monitoring Agreement, met on June 30, 1998 in the Boardroom of the Department of Environment and Labour. The following members were in attendance:

| | |
|---------------|---|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Calvin Baker | Atmospheric Environment Services, St. John's, NF |
| Art Cook | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, St. John's, NF |
| Martin Goebel | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. Introductory Remarks

Tom briefed the members about various on-going projects and programs, databases, Y2K compliance, and future priorities in Environment Canada.

Martin briefed the members about recent organizational changes in the Department of Environment and Labour, on-going projects and future priorities.

2. Annual Work Schedule 1998-99

- No changes are expected in the on-going monitoring activities under the Agreement. Some minor changes are proposed in the water quality network within the City of St. John's, but the total number of samples collected during 1998-99 will be same as during 1997-98.
- Tom indicated that no changes are expected in the analytical work to be carried out by the federal labs in Moncton and Burlington under the Water Quality Agreement.
- A study is being planned to assess the impact of logging activities on water quality

of the Main River watershed. The study will be carried out under the Agreement with the support of the Western Model Forest Inc.

- It was agreed that the data retrieval and processing task will be reinitiated in September 1998. The main focus of this activity will be to update the water quality database for the period of 1995 to 1997. The activity will be coordinated by Mr. Lawrence Wong of Environment Canada and Mr. Paul Neary of the Department of Environment and Labour.
- Haseen reported that Agreement Annual Report for 1995-96 has been completed and other reports are under preparation.
- Haseen agreed to prepare the Annual Work Schedule for 1998-99 which will be forwarded to Tom and Martin for review and signature.

3. Water Quality Network in Labrador

- It was agreed to add ten new stations to Labrador network. The details of these new stations are provided on the attachment # 1. The main objective of these new stations is to collect background water quality information in view of potential development projects in Labrador (Lower Churchill Power Project, Voisy Bay Nickel, and other projects).

4. Staff Training and Communication

- There was discussion on the need for safety training of Regional Water Quality Officers.
- Haseen noted that all pending water quality data sheets have been mailed to Moncton.
- Tom agreed to provide the names of contact persons in Moncton and Burlington.

5. Other Business

Canada-Newfoundland Water Quality Monitoring Agreement

Co-ordinating Committee Meeting

Minutes

The Co-ordinating Committee for the Canada-Newfoundland Water Quality Monitoring Agreement, met in Moncton on March 8, 1999. The following members were in attendance:

| | |
|---------------|--|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Guy Brun | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Lawrence Wong | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Paul Neary | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. ENVIRODAT - Present Status

- Water quality data collected under the Agreement, during 1986 to 94, was processed in 1996 (Phase 1), and is being used for interpretive analysis and dissemination to the public.
- Water quality data collected during 1995 to 99 has not yet been processed (Phase 2), and need to be processed on a priority basis, so that it can be integrated into the main water quality database, maintained by the province.

2. Water Quality Database

- A number of items relating to the second phase of data downloading and processing were discussed. It was agreed that Environment Canada will initiate work on Phase 2 of the data precessing, and data files will be transferred to Newfoundland by the last week of May 1999.

3. Water Quality Agreement - Status and Progress

- Water quality sampling and shipping protocols were discussed. It was agreed that

Guy will provide Haseen with copies of updated sample shipping forms and field sheets.

4. Technical Reports

- Status of the completed and in-progress reports was discussed.

5. Other Monitoring Activities

- During 1997-98, a total of 144 tap water samples, at a cost of \$5768⁹, were analysed by Environment Canada Moncton Lab.
- During 1998-99, a total of 120 tap water samples at a cost of \$4,800 were analysed by Environment Canada Moncton Lab. In addition to this, 32 municipal wastewater samples were also analysed at a cost of \$1,568.
- Invoices processed by the province for the additional analytical work were as follows: \$15,000 (1997-98) and \$10,000 (1998-99). The outstanding balance of \$12,864 with Environment Canada, will be used to cover the analytical cost, for samples collected during 1999-00.
- THM analytical work was carried out by St. John's Lab of Environment Canada under a separate arrangement.

6. Other Business

- Status and progress of Main River study was reviewed.
- It was agreed that all lab results will be forwarded to Haseen.
- Communication on protocols between Moncton and St. John's on various matters relating to the agreement and other analytical work were discussed.

Canada-Newfoundland Water Quality Monitoring Agreement

Co-ordinating Committee Meeting

Minutes

The Co-ordinating Committee for the Canada-Newfoundland Water Quality Monitoring Agreement, met on June 30, 1999, in the Boardroom of the Department of Environment and Labour. The following members were in attendance:

| | |
|---------------|---|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| Bill Brimley | Atmospheric Environment Services, St. John's, NF |
| Calvin Baker | Atmospheric Environment Services, St. John's, NF |
| Art Cook | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, St. John's, NF |
| Martin Goebel | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. Introductory Remarks

- Tom briefed the members about various on-going projects and programs, databases, Y2K compliance, and future priorities in Environment Canada.
- Martin briefed the members about the organization of the Department of Environment and Labour, on-going projects and future priorities.

2. Annual Work Schedule 1999-00

- Environment Canada (AES) sampled ten remote stations on the Island and nine stations in Labrador during the previous fiscal year (1998-99). All these stations will be sampled by Environment Canada during the current fiscal year (1999-00). In addition to this, five more stations will be added to Labrador water quality monitoring network. Station details will be included in 1999-00 work schedule.

- No changes are expected in water quality analysis work, carried out by Burlington and Moncton Laboratories of Environment Canada. Samples will be analysed as per 1999-00 annual work schedule.
- Joe Pomroy and Paul Barnable are working on the Main River Project in conjunction with other partners.
- Environment Canada has processed water quality data collected during 1995 to 99. All data files have been transferred to the Water resources Management Division for further processing and integration into the main water quality database.
- All backlogged annual agreement reports have been cleared and four technical reports (Exploits, Humber, Urban Rivers and State of Water Quality) are in progress.

3. Northern Ecosystem Project

- This is new federal government initiative to deal with northern ecosystem. Labrador water quality network will provide useful baseline data for this project.
- Ecological Monitoring and Assessment Network (EMAN) along with its scope and benefits was discussed.

4. Biota and Sediment Monitoring

- This new component of work along with five new stations in Labrador network will be included in 1999-00 annual work schedule. Four to five water bodies will be monitored annually under this new activity. The site specific monitoring details will be included in the annual work schedule. Tom will estimate the additional resource requirements of each party for these two new activities.

5. Communication

- In order to avoid any communication gaps between two parties, the Coordinating Committee of the Agreement will meet twice (March or April meeting in St. John's and October or November meeting in Moncton) in each fiscal year, to review the work progress.

6. Other Monitoring Programs - 1999-00

- About 842 drinking water samples (for THM analysis) will be submitted to St. John's Lab of Environment Canada. Payment of invoices and other procedural details will be worked out through a separate meeting between Haseen and Art.

- About 144 tap water samples (for selected inorganic analysis) will be submitted to Moncton Lab of Environment Canada.
- About 60 municipal wastewater samples will be submitted to Moncton Lab of Environment Canada.

7. Invoicing

- Two invoices in the amount of \$15K (first invoice for \$10K in July and second invoice for \$5K in October) will be submitted to the Water Resources Management Division, to cover the analytical cost for the above mentioned samples.

Canada-Newfoundland Water Quality Monitoring Agreement

Co-ordinating Committee Meeting Minutes

The Co-ordinating Committee for the Canada-Newfoundland Water Quality Monitoring Agreement, met on March 23, 2000, in the Boardroom of the Department of Environment and Labour. The following members were in attendance:

| | |
|---------------|--|
| Tom Pollock | Environmental Conservation Branch, Ecosystem Science, Environmental Quality Section, Moncton, NB |
| John Merrick | Meteorological Service of Canada, Dartmouth, NS |
| Bill Brimley | Meteorological Service of Canada, Dartmouth, NS |
| Calvin Baker | Atmospheric Environment Services, St. John's, NF |
| Martin Goebel | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |
| Haseen Khan | Water Resources Management Division, Department of Environment and Labour, St. John's, NF |

The following is an overview of discussions, decisions, and action items:

1. Annual Work Schedule 1999-00

- Environment Canada (AES) sampled ten remote stations on the Island and nine stations in Labrador during the current fiscal year (1999-00).
- No changes were made in water quality analysis work, carried out by Burlington and Moncton Laboratories of Environment Canada. Samples were analysed as per 1999-00 annual work schedule.
- Joe Pomroy, Clavin Baker and Paul Barnable are working to establish a real-time water quality data collection station.
- All water quality data collected during 1995 to 99 has been processed and is ready for use.
- All backlogged annual agreement reports have been cleared and four technical reports (Exploits, Humber, Urban Rivers and State of Water Quality) are in progress.

- **Biota and Sediment Monitoring**
- Four to five water bodies in St. John's area were monitored as per annual work schedule (1999-00). This program will continue in the next fiscal year(2000-01). The site specific details will be included in the annual work schedule.
- **Other Monitoring Programs - 1999-00**
- About 946 drinking water samples (for THM analysis) were submitted to St. John's Lab of Environment Canada. All invoices have been processed.
- About 144 tap water samples (for selected inorganic analysis) were submitted to Moncton Lab of Environment Canada.
- About 79 municipal wastewater samples were submitted to Moncton Lab of Environment Canada.
- **Invoicing**
- Two invoices in the amount of \$10K were processed for tap water quality and municipal wastewater samples by Environment Canada Moncton Lab. The Department of Environment and Labour has \$13,233 credit with Environment Canada under this activity. This credit will be used for analytical work during 2000-01.
- Four invoices in the amount of \$30,000 were processed for THM work by Environment Canada Lab in St. John's.

