CANADA

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

MINES BRANCH

MINERAL PROCESSING DIVISION

INDUSTRIAL WATER RESOURCES OF CANADA

WATER SURVEY REPORT NO. 11

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BY

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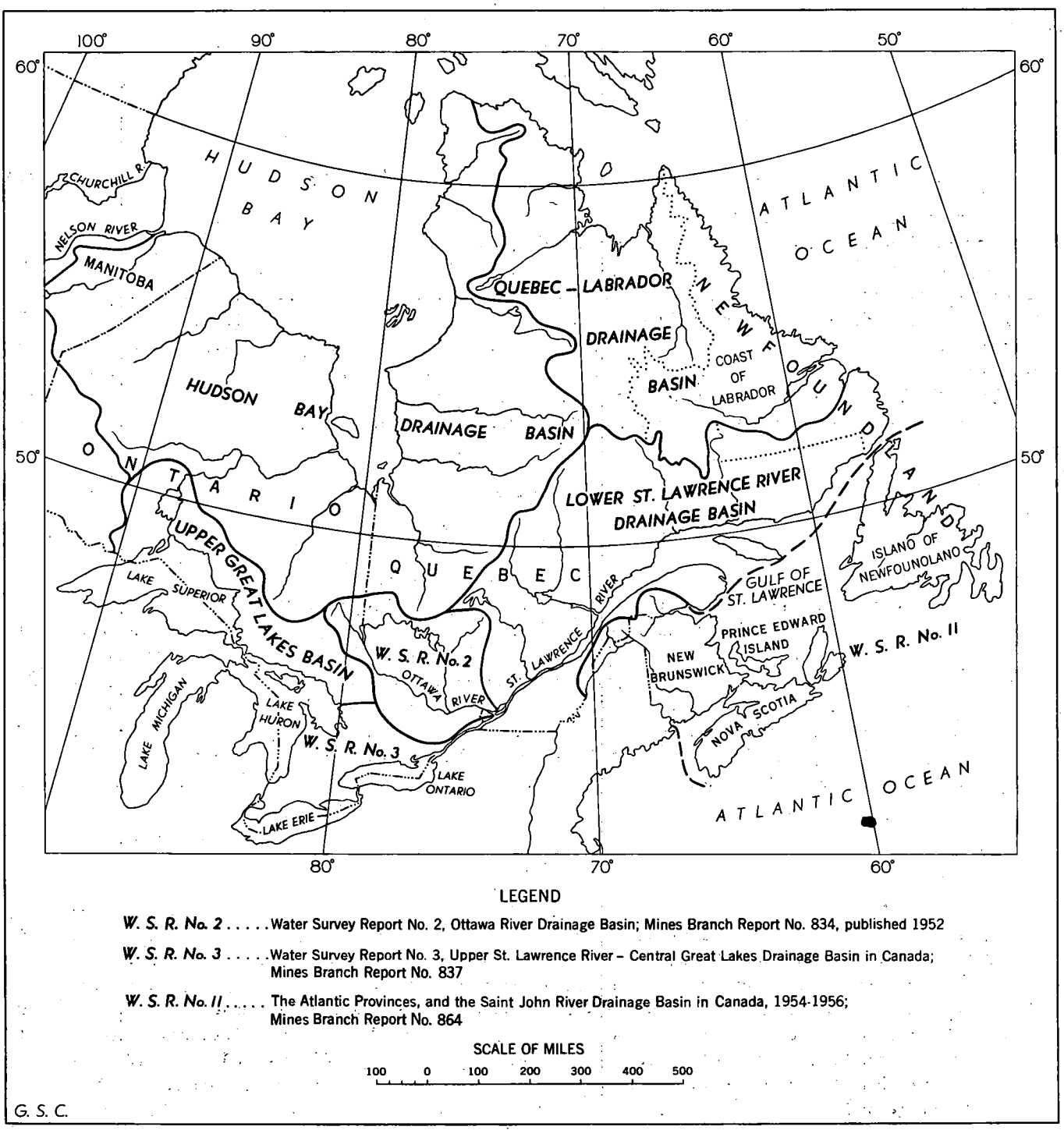


LEGEND

W. S. R. No. 2 . . . . . Water Survey Report No. 2, Ottawa River Drainage Basin; Mines Branch Report No. 834, published 1952

W. S. R. No. 3 . . . . . Water Survey Report No. 3, Upper St. Lawrence River – Central Great Lakes Drainage Basin in Canada; Mines Branch Report No. 837

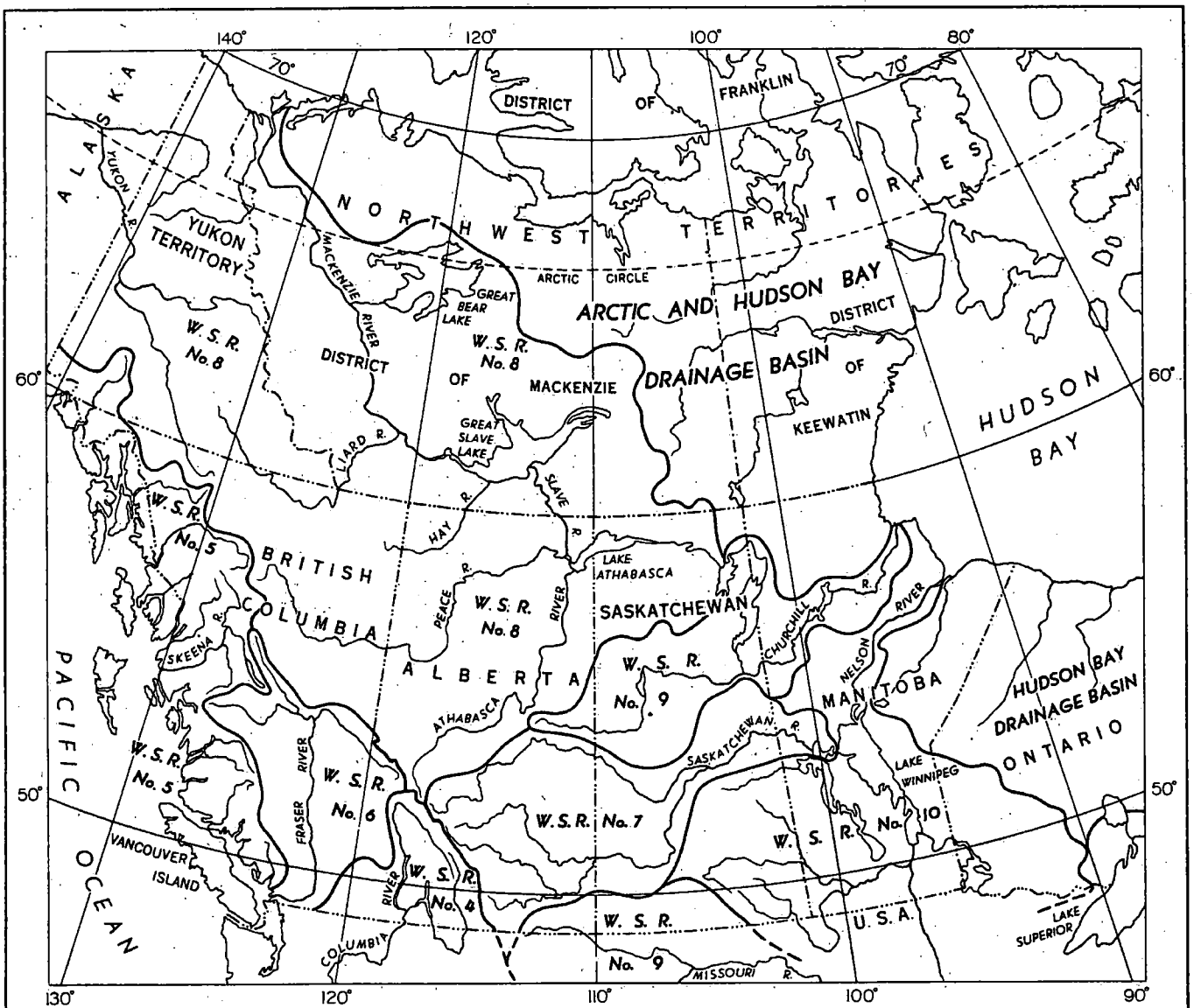
W. S. R. No. 11 . . . . . The Atlantic Provinces, and the Saint John River Drainage Basin in Canada, 1954-1956; Mines Branch Report No. 864

SCALE OF MILES

100 0 100 200 300 400 500

G. S. C.

FIGURE 1. MAP SHOWING DRAINAGE BASINS UNDER STUDY IN EASTERN CANADA



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W. S. R. No. 4 ..... Water Survey Report No. 4, Columbia River Drainage Basin; Mines Branch Rept. No. 838, published 1953

W. S. R. No. 5 ..... Water Survey Report No. 5, Skeena River Drainage Basin, Vancouver Island, and Coastal Areas of British Columbia; Mines Branch Rept. No. 839, published 1953

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W.S.R. No. 10 ..... Water Survey Report No. 10, Nelson River Drainage Basin in Canada; Mines Branch Report No. 861, published 1957

SCALE OF MILES

100 0 100 200 300 400 500

FIGURE 1. MAP SHOWING DRAINAGE BASINS UNDER STUDY IN WESTERN CANADA

ERRATA

Page 7, line 17 from bottom, for "There is heavy frost in the ....." read "There is heavy forest in the ....."

Page 147, line 13 from bottom, for "are significant" read "are insignificant".

Chemical Quality of Surface and Municipal Water Supplies in the Atlantic Provinces and in the Saint John River Drainage Basins in Canada, 1954 - 1956

INTRODUCTION

This report, the eleventh in a series continues the tabulation of data on the chemical quality of surface and municipal water supplies available for industrial and domestic use in Canada. Water Survey Report No. 1[1] introduced the series and outlines the aim, scope and procedure of the country-wide survey; it also includes general information, tables and graphs for use in interpreting the analytical results appearing in subsequent reports.

Studies on water quality in the specific areas or drainage basins outlined in Figure 1 are reported in detail in Water Survey Reports Nos. 2 to 11 inclusive: Figure 1 serves as an index to these ten reports. Only the areas designated Hudson Bay and Arctic drainage basins – for the most part very sparsely settled and relatively inaccessible – have not yet been studied in detail.

This report records the results of studies in the important eastern coastal region of Canada comprising four provinces and part of a fifth. It covers the drainage basins of the Saint John River in Quebec and New Brunswick and the draining basins of many other rivers in the Atlantic Provinces, i.e. Nova Scotia, Prince Edward Island, New Brunswick and the island of Newfoundland.

The method of presentation in this report is essentially the same as that employed in previous reports of the series, with no attempt being made to discuss in detail all the information recorded herein or obtained during the survey. However, some statistics on water quality and use at the time of this survey are presented and briefly discussed.

Table I and Figures 1 and 2 show the relationship of area and population (1951 and 1956) in the drainage basins covered by this report to other areas or basins studied or under study. Reference should be made to tables and maps of Water Survey Reports 2 to 10 inclusive for closer comparison of the various basins.

Table II gives in detail most of the analytical results obtained on surface waters in the drainage areas, while Figure 2 (in pocket) shows the location of the sampling stations which are listed alphabetically in Appendix A.

Figure 3 is a graphical presentation of much of the information in Table II on water hardness in the Saint John River system in Canada. It shows the change in total and non-carbonate hardness of this river as it flows to the sea. Additional data on chemical water quality in this watershed have recently been obtained by the New Brunswick Water Authority, a provincial body formed since 1956.[2]

Some relationships between mineral content and river discharge are graphically shown in Figures 4, 5, and 6; these figures respectively report some of the data of Table I on Saint John River at Hawkshaw, N.B., St. Mary's River at Stillwater, N.S. and Gander River at Glenwood, Island of Newfoundland. Similar graphs can be prepared from Table II for a number of other rivers and locations.

Table III reports the chemical quality of most waters supplied by organized municipal systems within the drainage areas; these municipalities are listed alphabetically in Appendix B and their locations are shown on the map of the area (Figure 2, in pocket) so as to classify them as to water hardness.

Table IV summarizes information available on the number of water systems, the character of the water sources, type of water treatment, if any, and the populations served by the systems, in 1951 and 1956.

Additional statistics, especially on the water hardness of municipal waters, are tabulated in Table V. A description of the systems and waterworks plants and their operation in 1954 and/or 1956 is also given.

Survey studies in the areas covered by this report were greatly facilitated by the cooperation of provincial and municipal officials, many of whom collected water samples and provided information on the operation of their waterworks systems. Assistance in the collection of water samples from a number of industrial firms, particularly pulp and paper and hydroelectric power companies, is also gratefully acknowledged.

[1] Water Survey Report No. 1 – Scope, Procedure and Interpretation of Survey Studies, Mines Branch Report No. 833, 1952.
[2] Preliminary Survey of Pollution in the Saint John's River Watershed – An Interim Report to the New Brunswick Water Authority – James F. MacLaren Associates, Saint John, N.B., August, 1958.

TABLE I

Area and Population Distribution in the Drainage Basins

Drainage basin of	Approximate area drained		Census year	Estimated total population in drainage areas		Estimated population served with water by organized system		Incorporated Communities		
	Square miles	Percent of Province		in hundreds	as percentage of total	in hundreds	as percentage of total population	No.	Estimated population in hundreds	Percentage of total population
Island of Newfoundland	42,734	100	1956	4,043	100	1,304	32.3	33	1,387	33.4
			1951	3,535	100	1,145	32.4			
Nova Scotia	21,068	100	1956	6,947	100	3,338	48.0	42	3,172	45.7
			1951	6,426	100	3,047	47.4			
Prince Edward Island	2,184	100	1956	993	100	236	23.8	22	376	37.8
			1951	984	100	221	22.5			
New Brunswick Saint John River	10,985	(39.3	1956	2,363	42.6	1,367	57.9)	27++	1,986++	35.8++
		100	1951	2,235	43.3	1,228	54.9)			
Remainder	17,000	(60.7	1956	3,183	57.4	917	28.8)			
			1951	2,920	56.7	788	27.0)			
Quebec+ Saint John River	2,700	(0.45	1956	562	1.2	100	17.8)	527++	32,389++	69.9++
		0.79	1951	490	1.2	89	18.2)			
Restigouche River	2,000	(0.34	1956	348	0.75	111	31.9)			
			1951	317	0.78	99	31.2)			
Totals	98,671		1956	18,439	11.4*	7,373	40.0			
	(2.6%)*		1951	16,907	12.1*	6,617	39.1			

* Of all Canada
\+ About 0.8% of the province
++ Approximate for total province

As in other basins, officials of the Water Resources Branch, Department of Northern Affairs and National Resources assisted by supplying data on river discharges.

The Atlantic Provinces and the Saint John River Drainage Basins in Canada

The 98,760 square-mile area covered by this report has many separate drainage basins or watersheds draining into the Atlantic Ocean, the principal ones being those of the Saint John, Ste. Croix, Miramichi and Restigouche rivers in New Brunswick and Quebec; the Margaree and Annapolis rivers in Nova Scotia and the Humber, Exploits and Gander rivers on the island of Newfoundland. None of these basins are large in comparison with those considered in previous reports of this series, the largest being that of the Saint John River which drains about 13,700 square miles in Canada, and in the United States about 7,000 square miles of northern Maine. The Miramichi, Humber, Exploits and Gander rivers drain approximately 4,900, 2,800, 4,600, and 2,000 square miles respectively. Many of the region's rivers are very short and are tidal for considerable distance upstream, the longer rivers are Saint John - about 418 miles; Exploits - 153 miles; Miramichi - 135 miles; Margaree - 130 miles and Gander - 102 miles. Glaciation of the area left many lakes. Some of the larger lakes are on the island of Newfoundland, Deer - 24 square miles; Grand - 140 square miles; and Gander - 49 square miles. In New Brunswick, Grand - 65 square miles, and in Cape Breton Island the brackish Bras d'Or, about 360 square miles in area.

These drainage areas lie within the Canadian Applachians, a part of the continuous geological structural unit extending northeastward from Tennessee and Arkansas in the United States. This is a geological region of severely folded and faulted rocks ranging from Precambrian to Palaeozic with considerable intrusion of granite and ultrabasic rocks of the latter age. Two major geosynclines run through the region; - the Laurentian, known in northwest Newfoundland as the Longe Range Mountains (2,500 feet elevation) and as the Shickshock and Notre Dame Mountains in the Gaspé Peninsula and Eastern Townships of Quebec. The other is the Acadian, running through the southeastern part of the island of Newfoundland and producing the uplands of New Brunswick and Nova Scotia.

Because the area was glaciated, the mountains are eroded and low in elevation with long, smooth outlines and only in the Gaspé Peninsula do they reach 4,000 feet elevation. The Saint John River, a broad, relatively shallow waterway, cuts across the York Plateau in its middle and lower reaches. In its upper reaches, it flows through an elevated plateau, 1,000 to 1,500 feet above sea level, made up mainly of calcareous or lime-containing shales. Between the upland hills in much of the Maritime provinces are found wide, fertile valleys floored with sandstone, as for example, the Minas Basin in Prince Edward Island, the valleys of the Annapolis and Saint John rivers. Generally the rivers have left fertile terraces suitable for agriculture.

Except for the Longe Range mountains, the island of Newfoundland is a relatively low, rolling upland. In the south and east are many barren rocky areas, covered with ponds and swamps. There is heavy frost in the river valleys and along the west coast and nowhere is there any extensive farm land. The climate is temperate with cool summers and usually mild winters. Pulp and paper manufacture, fishing and mining are important to the island. Extensive iron ore deposits are worked at Bell Island and the base metals, lead, zinc and copper are mined in the interior at Buchans.

Prince Edward Island is only about 120 miles long with an average width of 20 miles. None of the rivers can be classed as large or industrially important and most are tidal for most of their courses. The island is noted for its agriculture and fishing although it also has considerable forest suitable for the production of paper.

Nova Scotia also has relatively short rivers because of the central high ridge (1,500 feet average elevation) running lengthwise through the province. This ridge shelters the fertile valley of the Annapolis River thus permitting extensive farming and fruit-growing. The province has important deposits of salt, gypsum and bituminous coal, the latter near Sydney on Cape Breton Island and near Stellarton and Springhill on the mainland. Fishing is also an important industry.

New Brunswick and that part of the Saint John River basin in Quebec are rolling uplands with many rather wide river valleys. The highest mountains (2,690 feet) in New Brunswick are found near Grand Falls. The climate varies considerably depending on the distance from the ocean. In the northern part the summers are short and the winters cold, (snowfall averages 105 inches). In the southern part of the province both the summers and winters

are warmer with snowfall about 96 inches. Precipitation is greater in the south and along the coast, the average rainfall varying from 35 inches in the interior to 45 inches along the coast.

New Brunswick and the Saint John River basin in Quebec are noted for the manufacture of pulp and paper, agriculture, mining and fishing. Mining and pulp and paper manufacture are especially important in the north and west. The granite intrusions of the Appalachian region have given rise to a number of important mineral deposits, base metals in the Gaspé Peninsula, and in the Bathurst and Newcastle areas of New Brunswick, and gold and other metals in Nova Scotia. Deposits of coal, petroleum and natural gas have also been found in New Brunswick.[1]

SURVEY PROCEDURE

The methods of sampling and the survey procedure employed in this investigation were essentially the same as those used in previous surveys and outlined in detail in Water Survey Report No. 1.[2]

Because information on water quality in the Atlantic maritime area of Canada was especially requested, field studies to establish sampling stations and determine the extent of survey coverage were carried out in the fall of 1953. Except on the island of Newfoundland a year-long sampling program was initiated in July, 1954, at 45 locations on rivers and lakes. These monthly and bi-monthly sampling stations, listed in Appendix A and shown in Figure 2, were chosen so as to give representative samples of river or lake waters; the samples were shipped directly to the laboratory in Ottawa for chemical analysis. No daily sampling stations were operated but at each location an attempt was made to obtain extra samples at periods of high and low water.

Using a mobile laboratory, field work was carried out in the area during the summer or 1955, when samples of municipal water supplies and surface waters, in addition to samples at most of the monthly and bi-monthly stations, were collected and partially analysed. Some of these field results are reported in Tables II and III, in brackets beside the test results obtained in the laboratory. These field results indicate the quality of the water *in situ* and show if significant changes in quality occurred during shipment to, and storage in, the laboratory.

During field work in the area most of the incorporated municipalities having organized waterworks were visited; information on the operation of their water systems was obtained and samples of raw and finished water were collected and tested in the mobile laboratory. Additional information on these and other systems was obtained later by correspondence with municipal officers or officials of the several provincial health departments.

During 1955-56 a number of surface water sampling stations were operated on a monthly basis on the island of Newfoundland, and municipal waters were analysed. Difficulties in shipment to and from areas of Newfoundland limited the number of stations established and therefore limited coverage of water quality on the island. Provincial and municipal officials on the island also collected and forwarded samples of the various municipal waters and provided information on the operation of their water systems.

In late 1958 and early 1959 some additional information was obtained on major changes in a number of systems in the area and is included in this report. However, no attempt has been made to bring the data of Tables I, IV and V on all water systems up to the date of publication.

ANALYTICAL PROCEDURE

The analytical methods and techniques used in this study are essentially the same as those employed in the survey studies published in Water Survey Reports Nos. 9 and 10.[3] Basic analytical techniques and interpretation of the results are also discussed in some detail in Water Survey Report No. 1.[4]

The standard procedures for the analyses of waters recently published by the American Public Health Association[5] and the American Society for Testing Materials[6] were employed for most determinations. However, close cooperation between the Industrial Minerals Division of the Mines Branch, and committees of the above societies enabled the Division to use certain new analytical techniques and procedures.

Water Survey Report No. 10 discusses in some detail important changes in analytical methods brought into use during the period 1953 to 1956 inclusive. Since the studies herein reported were also carried out in this period

[1] Economic Geology Series No. 1, – Geology and Economic Minerals of Canada (third edition) Geol. Surv., Canada, 1947
[2] See reference, page 1
[3] See Figure 1
[4] See reference, page 1
[5] Standard Methods for the Examination of Water, Sewage and Industrial Wastes – 10th Edition, 1955 –*American Public Health Association Inc.* – 1790 Broadway, New York 19, N.Y.
[6] Manual on Industrial Water – A.S.T.M. Special Technical Publication No. 148B – *American Society for Testing Materials* – 1916 Race St. Philadelphia 3, Pa.

similar changes in analytical methods and techniques were used. These improved techniques have made it possible to present wider coverage in each drainage area, and increased analytical information on each water.

The determination "oxygen consumed by permanganate ($KMnO_4$)" was begun in October 1954 on all waters, and the determination of copper, aluminum, manganese and ammonia was initiated about May, 1955 on all municipal waters, on spot samples of surface waters and on every quarterly sample from a monthly sampling station. Spot tests for zinc were begun at a later date. Changes in the methods for determining sulphate, chloride and alkalinity, as discussed in Water Survey Report No. 10, were also initiated during the period covered by this report.

In order to permit increased coverage on waters, the determinations of residues on evaporation and ignition were omitted on every two out of three samples of waters received from a monthly station. However, it is considered that sufficient information is still reported on all waters to show clearly if significant seasonal variation is occurring.

An "average" value for water quality at each monthly sampling station is again omitted from this report. Such averages are of little value if water quality varies widely or if adequate discharge records are not available. True averages should be determined from numerous samples weighted as to discharge.

The saturation index, stability index and per cent sodium are reported for all waters. Interpretation of these calculated values has already been discussed in Water Survey Reports No. 1, 10 and 12; in brief, per cent sodium when correlated with total mineralization and boron content indicates the suitability of the water for irrigation; the saturation and stability indices are useful for assessing the corrosive and scaling tendency of the water. Care, however, must be exercised in interpreting these indices since many other factors are important, for example, when calcium hardness is less than about 10 ppm and the alkalinity is correspondingly low, there is no pH at which calcium carbonate can precipitate, and thus the indices have little significance. This is true for many of the very soft and low mineralized waters of this area. These indices and the free carbon dioxide content of the waters are calculated and reported for each water at the temperature of analysis. These values change significantly with changing temperature, pH and alkalinity. The carbon dioxide content of a cold deep well water may be markedly different from the content of the same water at laboratory temperature.

Dissolved oxygen was not determined on surface waters because it varies so widely with sampling location and depth, temperature, etc., and in most rivers, unless depleted by pollution, it is always near saturation. A survey of the dissolved oxygen content of streams requires detailed and specially designed study; such a study has been carried out on several rivers in New Brunswick for the New Brunswick Water Authority.[1] [2]

[1] See reference, page 3

[2] Preliminary Survey of Pollution in the North Shore and East Coast Areas of New Brunswick – An interim report to The New Brunswick Water Authority – James, F. MacLaren Associates, Saint John, N.B., January, 1959.

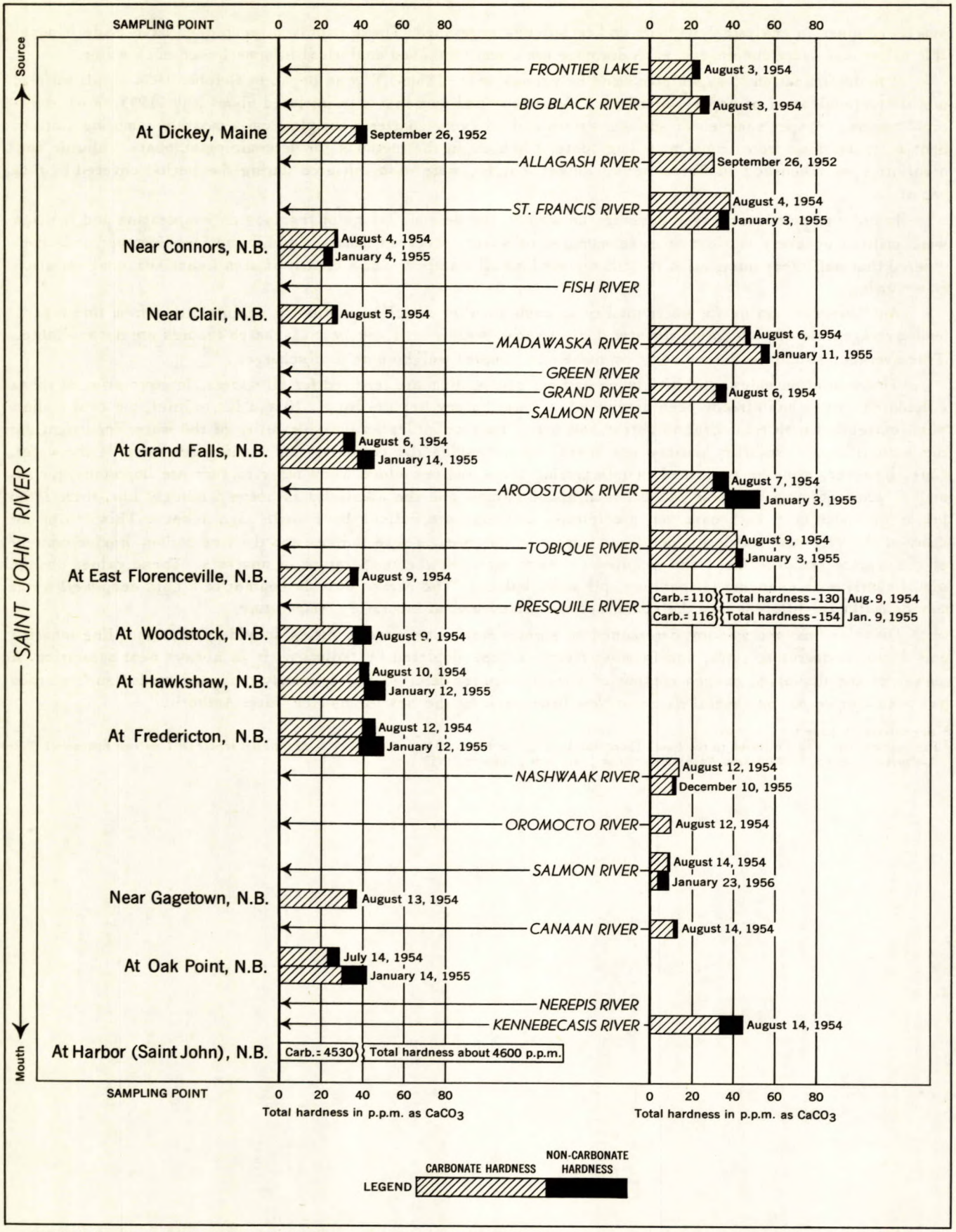


FIGURE 3. GRAPH SHOWING VARIATION IN WATER HARDNESS IN THE SAINT JOHN RIVER SYSTEM IN CANADA

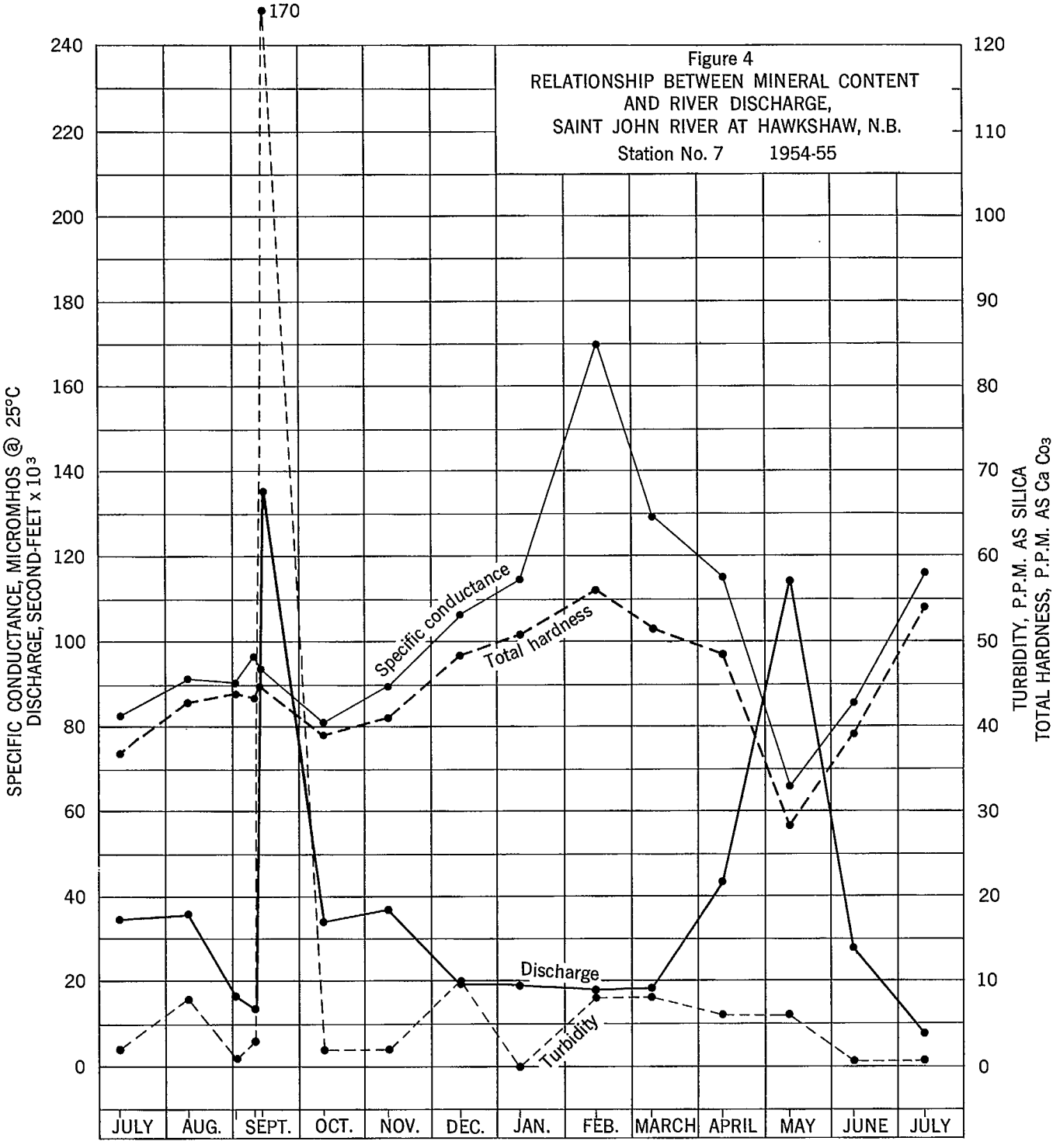


Figure 4
RELATIONSHIP BETWEEN MINERAL CONTENT
AND RIVER DISCHARGE,
SAINT JOHN RIVER AT HAWKSHAW, N.B.
Station No. 7 1954-55
SPECIFIC CONDUCTANCE, MICROMHOS @ 25°C
DISCHARGE, SECOND-FEET x 10³
TURBIDITY, P.P.M. AS SILICA
TOTAL HARDNESS, P.P.M. AS Ca Co₃
170
240
220
200
180
160
140
120
100
80
60
40
20
0
120
110
100
90
80
70
60
50
40
30
20
10
0
Specific conductance
Total hardness
Discharge
Turbidity
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MARCH
APRIL
MAY
JUNE
JULY

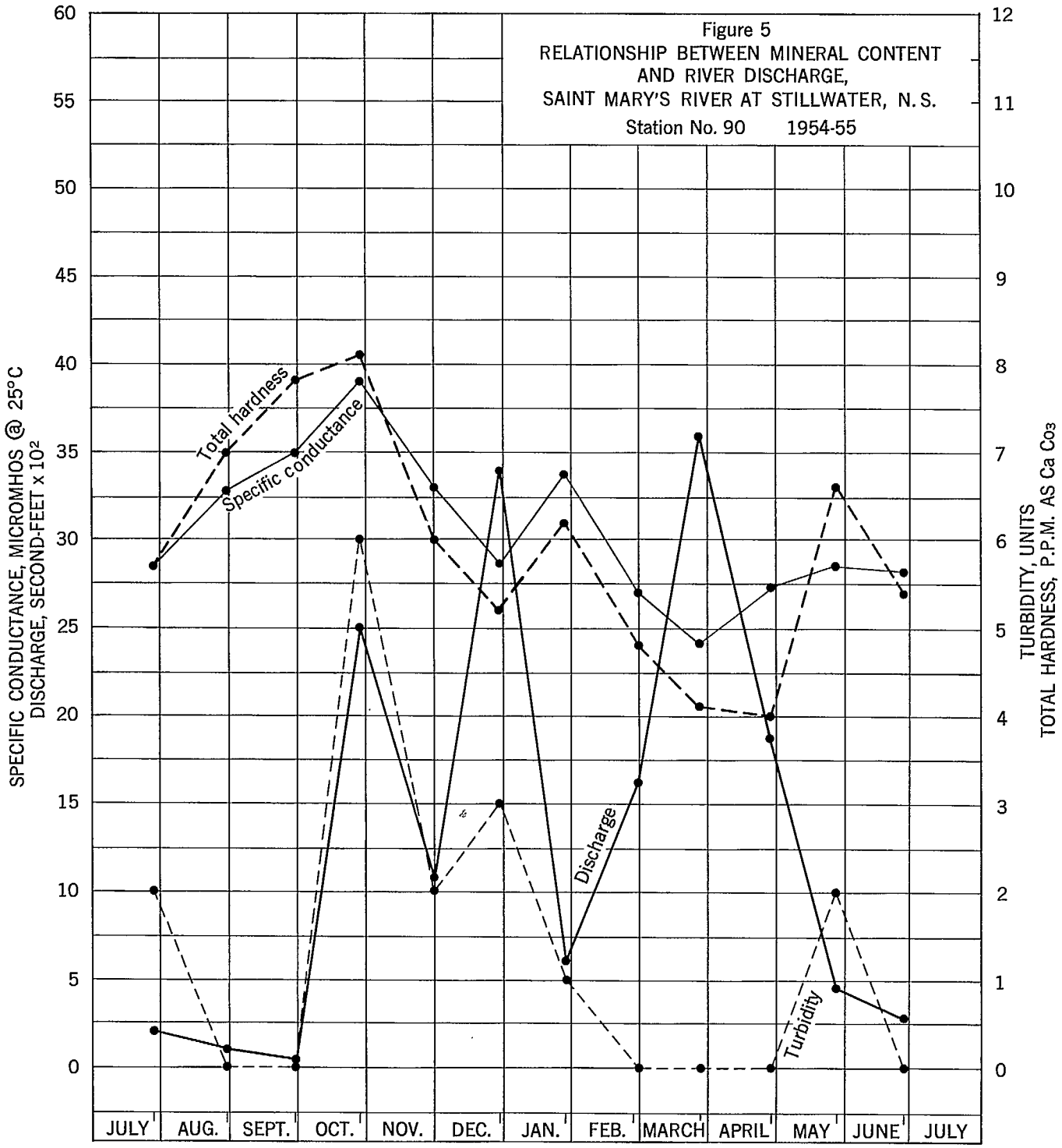


Figure 5
RELATIONSHIP BETWEEN MINERAL CONTENT
AND RIVER DISCHARGE,
SAINT MARY'S RIVER AT STILLWATER, N.S.
Station No. 90 1954-55
SPECIFIC CONDUCTANCE, MICROMHOS @ 25°C
DISCHARGE, SECOND-FEET x 10²
TURBIDITY, UNITS
TOTAL HARDNESS, P.P.M. AS Ca Co₃
Total hardness
Specific conductance
Discharge
Turbidity
60
55
50
45
40
35
30
25
20
15
10
5
0
12
11
10
9
8
7
6
5
4
3
2
1
0
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MARCH
APRIL
MAY
JUNE
JULY

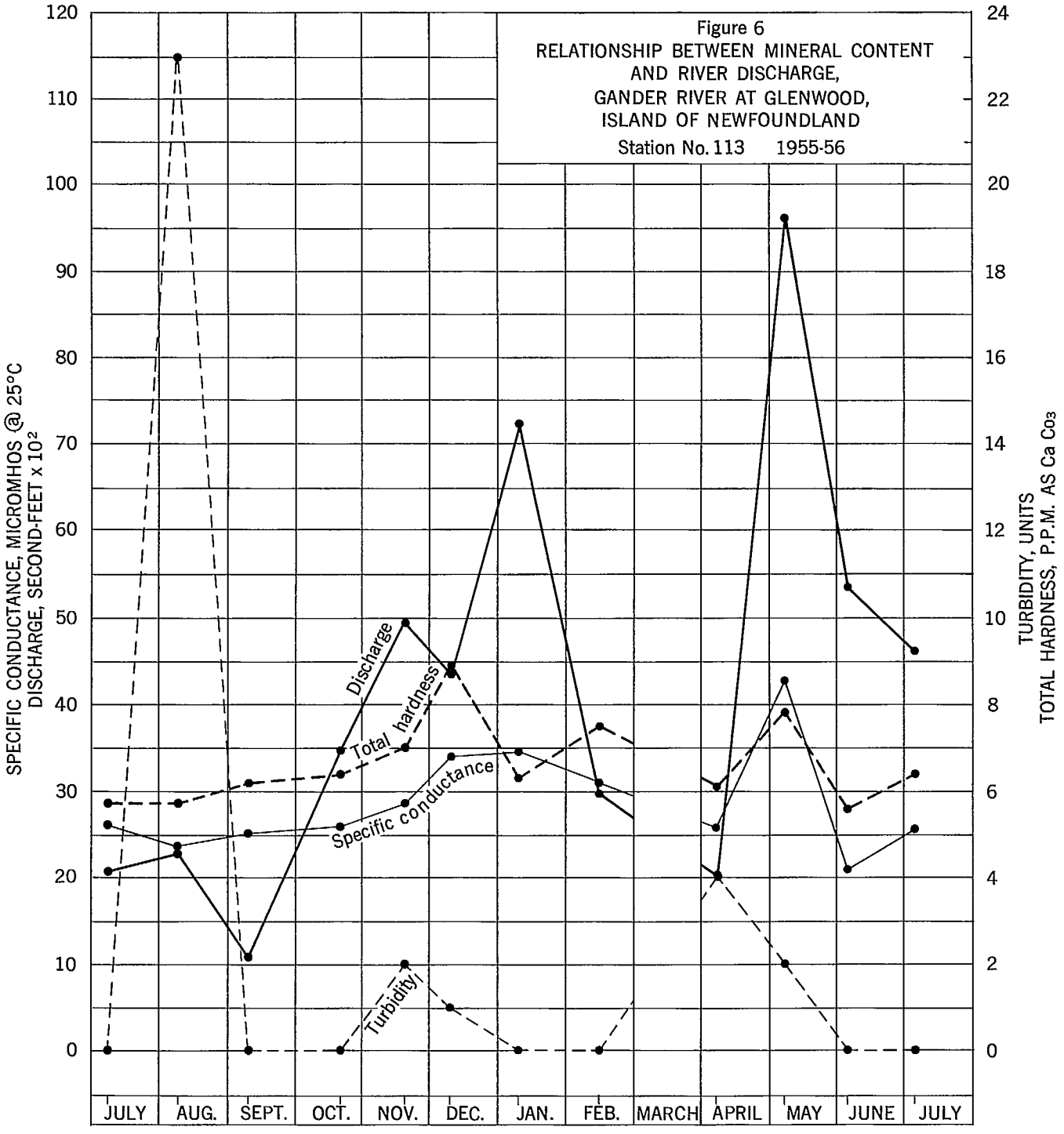


Figure 6
RELATIONSHIP BETWEEN MINERAL CONTENT
AND RIVER DISCHARGE,
GANDER RIVER AT GLENWOOD,
ISLAND OF NEWFOUNDLAND
Station No. 113 1955-56
SPECIFIC CONDUCTANCE, MICROMHOS @ 25°C
DISCHARGE, SECOND-FEET x 10²
TURBIDITY, UNITS
TOTAL HARDNESS, P.P.M. AS Ca Co3
Discharge
Total hardness
Specific conductance
Turbidity
120
110
100
90
80
70
60
50
40
30
20
10
0
24
22
20
18
16
14
12
10
8
6
4
2
0
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN.
FEB.
MARCH
APRIL
MAY
JUNE
JULY

TABLE II

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly meaa	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
SAINT JOHN RIVER DRAINAGE																		
STATION NO. 1 – SAINT JOHN RIVER																		
			Gauge height in feet															
1	Sept. 26/52	.....	3.07	.....	.....	.....	4.5	7.2	35	.....	.....	.....	60**	0.082	.....	.....	81.8	14
2	Apr. 10/53	.....	9.32	.....	.....	.....	7.9	6.4	55	.....	.....	.....	48**	0.065	.....	.....	33.4	5.4
STATION NO. 2 – SAINT JOHN RIVER																		
3	July 3/54	9:47	30,300†	14,800†	61	.....	4.2	7.0	120	1	.....	.....	67.0	0.091	5,475	28.4	85.4	6.9
4	Aug. 4	12:15	8,840	15,500	65	.....	0.8	7.8	60	3	.....	.....	.....	.....	.....	.....	55.5	9.1
5	Sept. 2	6:50	7,250	14,700	63	.....	2.2	7.4	25	0	.....	.....	.....	.....	.....	.....	79.5	6.2
6	Oct. 2	10:32	23,900	17,600	65	.....	1.0	7.5	130	2	.....	.....	65.2	0.089	4,202	29.0	.....	7.5
7	Nov. 3	13:41	8,860	11,500	40	11	2.3	7.4	65	1	.....	.....	.....	.....	.....	.....	51.3	8.5
8	Dec.	No sample taken††		6,820††	.....	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Jan. 4/55	9:36	5,700	4,340	33	9.1	2.7	7.2	50	0.2	.....	.....	54.8	0.075	842	22.8	55.6	8.2
10	Feb. 5	3:27	2,940e	2,720	33	.....	4.3	7.1	40	0.3	.....	.....	.....	.....	.....	.....	62.8	9.0
11	Mar. 3	15:53	3,090	3,620	32	.....	3.3	7.2	35	0	.....	.....	.....	.....	.....	.....	65.7	9.6
12	Apr. 1	12:54	3,600	30,900	32	8.4	4.1	7.0	35	0	.....	.....	56.0	0.076	542	22.0	59.7	8.4
13	May 2	11:23	73,200	42,800	40	.....	1.8	7.4	35	2	.....	.....	.....	.....	.....	.....	58.7	9.4
14	June 13	12:24	7,890	9,330	55	.....	3.0	7.0	60	0.8	.....	.....	.....	.....	.....	.....	44.2	7.5
15	July 3	22:37	3,470	3,230	74	16	1.2	7.6	45	0.8	.....	.....	56.8	0.077	530	24.8	63.1	9.9
STATION NO. 3 – SAINT JOHN RIVER																		
16	Aug. 5/54	7:117	14,200	15,500	62	.....	4.1	7.1 (7.4)	70 (70)	3	3.6	0.8	57.6	0.078	2,197	19.6	58.6	9.5
STATION NO. 4 – SAINT JOHN RIVER																		
17	July 6/54	6:42	28,000†	18,900†	62.5	.....	3.2	7.2	75	1	.....	.....	66.4	0.090	4,997	12.4	60.3	9.0
18	Aug. 6	4:13	28,000	24,300	60.5	.....	1.2	7.7	60	6	.....	.....	.....	.....	.....	.....	71.8	11.4
19	Aug. 6*	10:45	28,000	24,300	64	.....	1.9	7.5 (7.9)	60 (90)	8	.....	.....	.....	.....	.....	.....	75.9	11.7
20	Sept. 7	6:45	11,000	21,800	59.5	18	3.2	7.3	50	3	.....	.....	.....	.....	.....	.....	70.9	12.6
21	Oct. 6	8:28	32,200	26,400	50	17	2.1	7.4	95	2	.....	.....	81.2	0.111	7,092	27.0	64.7	10.1
22	Nov. 6	4:34	19,800	18,900	50	13	1.1	7.7	45	5	.....	.....	.....	.....	.....	.....	78.2	11.2
23	Dec. 7	4:84	8,910	10,900	34	15	3.2	7.3	40	1	.....	.....	.....	.....	.....	.....	88.4	12.1
24	Jan. 14/55	10:32	7,400	7,280	32	18	6.0	7.0	40	0.2	.....	.....	80.4	0.109	1,600	38.4	90.9	12.8
25	Feb. 7	4:52	4,630	5,510	32	.....	7.8	7.0	40	2	.....	.....	.....	.....	.....	.....	108.2	15.2
26	Mar. 8	7:48	6,800	6,930	32	.....	5.8	7.1	40	0.8	.....	.....	.....	.....	.....	.....	105.9	14.7
27	Apr. 9	6:46	10,300	47,400	41	16	3.6	7.2	35	3	.....	.....	87.6	0.120	2,432	36.8	92.0	12.6
28	May 9	4:9	87,100	62,600	48	.....	1.6	7.4	40	4	.....	.....	.....	.....	.....	.....	55.0	9.1
29	June 9	18:26	14,800	14,900	58	18	3.4	7.2	40	2	.....	.....	66.4	0.089	2,610	30.8	72.8	10.9
30	July 7	13:20	6,050	5,150	73	14	1.3	7.7	30	5	9.5	5.3	68.4	0.093	1,117	21.6	87.0	13.6
STATION NO. 5 – SAINT JOHN RIVER																		
31	July 9/54	7:41	32,600	32,200	62	16	1.7	7.5	70	3	4.5	3.5	69.6	0.095	6,149	29.8	76.5	11.2
32	Aug. 9	9:42	35,400	36,200	63	.....	2.2	7.5 (7.6)	60	8	.....	.....	.....	.....	.....	.....	85.7	12.8
33	Sept. 10	5:42	11,700	36,200	59	15	2.3	7.5	55	2	.....	.....	.....	.....	.....	.....	91.9	14.8
34	Oct. 12	10:31	33,400	39,100	49	13	1.1	7.8	60	6	10.6	9.0	74.4	0.101	6,691	24.0	83.4	13.5

* Data supplied by Quality of Waters Branch, Water Resources Division, United States Geological Survey, Washington, D.C.
** Dried at 180°C.

e estimated.
† Discharge records, ¼ mile below mouth of Fish River at Fort Kent, Maine, U.S.A.; total drainage area, 5,690 square miles.
†† Ice conditions December 21, 1954 to April 17, 1955.

* Sampled from ferry, 7 miles downstream from Grand Falls, N.B.
† Discharge records 1,800 feet downstream from generating station of the Gatineau Power Company.

* Sampled at highway No. 6 bridge.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
BASIN IN CANADA																								
at DICKEY, AROOSTOOK CO., MAINE, U.S.A.*																								
1.6	0.02	0.0	0.04	0.1	0.0	0.0	1.3	0.3	.....	0.0	45	2.2	0.0	0.2	3.7	4.7	....	5	42	50	6.2	−1.5	10.2	1
0.4	0.07	0.07	0.0	0.3	0.0	0.0	0.9	0.8	.....	0.0	12	6.2	1.6	0.2	0.9	3.3	....	7	17	25	9.8	−3.2	12.8	2
near CONNORS, N.B.																								
1.5	.....	0.12	0.0	.....	.....	.....	6.1	0.4	.....	0.0	26.3	5.6	8.2	....	0.4	4.7	....	1.7	23.3	46.9	3.6	−2.2	11.4	3
1.3	.....	.....	.....	.....	.....	.....	1.5	0.4	.....	0.0	33.2	4.5	0.6	0.0	0.1	3.8	....	0.9	28.1	37.7	10.2	−1.2	10.2	4
3.4	.....	.....	.....	.....	.....	.....	1.1	0.3	.....	0.0	33.4	2.8	0.5	....	0.4	4.2	....	2.1	29.5	35.4	7.4	−1.8	11.0	5
1.0	.....	0.09	.....	0.08	0.0	.....	1.0	0.5	.....	0.0	21.0	4.0	1.4	....	4.0	4.2	....	5.6	22.8	34.1	8.5	−1.7	10.9	6
1.0	.....	.....	.....	.....	.....	.....	0.9	0.2	.....	0.0	23.9	5.4	0.7	....	0.6	4.8	0.0	5.7	25.3	33.9	7.1	−1.7	10.8	7
....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
1.3	.....	0.05	0.0	0.0	0.0	.....	1.0	0.2	.....	0.0	25.7	6.4	0.3	0.12	0.6	5.3	....	4.7	25.8	36.2	7.6	−1.9	11.0	9
1.5	.....	.....	.....	.....	.....	.....	1.2	0.2	.....	0.0	31.7	4.1	0.9	....	0.6	3.7	....	2.6	28.6	36.8	8.3	−2.0	11.1	10
1.2	.....	.....	.....	.....	.....	.....	1.2	0.2	.....	0.0	30.6	4.5	0.3	....	1.2	5.9	....	3.8	28.9	39.2	8.2	−1.8	10.8	11
1.2	.....	0.04	0.0	0.03	0.0	.....	1.0	0.5	.....	0.0	26.8	4.4	0.7	0.0	0.6	6.1	....	3.9	25.9	36.2	7.5	−2.1	11.2	12
0.8	.....	.....	.....	.....	.....	.....	0.9	0.4	.....	0.0	26.8	3.8	0.6	....	0.4	4.1	....	2.3	24.3	33.6	7.3	−1.7	10.8	13
0.5	.....	.....	.....	.....	.....	.....	0.7	0.3	0.2	0.0	18.9	4.4	0.5	....	0.8	3.2	....	5.3	20.8	27.2	6.7	−2.2	11.4	14
0.9	.....	0.04	0.0	0.02	Trace	.....	0.8	0.4	0.1	0.0	29.6	4.9	0.6	0.0	1.2	3.4	....	4.1	28.4	36.9	5.6	−1.3	10.2	15
near CLAIR, N.B.																								
1.0	.....	0.07	0.0	0.0	.....	.....	1.2	0.3	.....	0.0 (0)	31.0 (30.3)	3.9	1.0	....	0.7	4.4	....	2.4	27.8	37.4	8.4	−1.9	10.9	16
at GRAND FALLS, N.B. – Drainage area, 8,450 square miles.																								
1.6	0.13	0.13	0.0	.....	.....	.....	2.1	0.3	.....	0.0	28.5	6.0	1.1	0.04	4.0	4.9	....	5.7	29.1	39.5	13.4	−1.9	11.0	17
1.5	.....	.....	.....	.....	.....	.....	2.4	0.5	.....	0.0	38.0	3.5	1.7	....	3.0	3.6	....	3.6	34.8	43.6	12.8	−1.1	9.9	18
1.8	.....	.....	.....	.....	.....	.....	1.6	0.4	.....	0.0 (0)	38.0 (40.5)	3.2	1.8	....	1.4	4.4	....	5.2 (2.9)	36.4 (36.1)	44.9	8.6	−0.8	9.6	19
0.7	.....	.....	.....	.....	.....	.....	1.5	0.3	.....	0.0	35.7	3.5	1.0	....	1.2	4.4	....	5.0	34.3	42.8	8.6	−1.6	10.5	20
1.3	.....	0.07	0.0	0.28	0.0	.....	1.4	0.6	.....	0.0	31.5	4.0	1.7	....	2.8	4.4	....	4.8	30.6	42.2	8.8	−1.6	10.6	21
1.6	.....	.....	.....	.....	.....	.....	1.2	0.4	.....	0.0	34.7	5.4	1.9	.....	1.6	5.0	0.0	6.0	34.5	45.4	6.9	−1.2	10.1	22
1.6	.....	0.08	.....	Trace	.....	.....	1.3	0.3	0.0	0.0	37.5	9.1	1.5	....	0.8	4.8	....	6.0	36.8	50.0	7.0	−1.5	10.3	23
1.6	.....	0.06	0.0	0.0	0.0	.....	1.3	0.4	.....	0.0	35.8	12.5	2.1	0.0	0.6	4.8	....	9.1	38.5	53.8	6.7	−1.8	10.6	24
2.0	.....	.....	.....	.....	.....	.....	1.8	0.5	.....	0.0	46.9	12.6	2.7	....	Trace	3.7	....	7.7	46.2	61.6	7.7	−1.6	10.2	25
2.1	.....	.....	.....	.....	.....	.....	1.7	0.4	.....	0.0	42.9	12.5	2.2	....	0.4	5.2	....	10.1	45.3	60.4	7.5	−1.6	10.3	26
1.6	.....	0.04	0.0	0.03	0.0	.....	1.6	0.6	.....	0.0	34.1	10.9	2.2	0.0	1.2	5.4	....	10.0	38.0	53.0	8.2	−1.7	10.6	27
0.4	.....	.....	.....	.....	.....	.....	0.8	0.4	0.15	0.0	24.4	2.9	0.4	....	1.6	3.6	....	4.4	24.4	31.2	6.5	−1.8	11.0	28
1.3	.....	0.03	0.0	0.0	0.0	.....	1.0	0.4	0.4	0.0	31.5	7.8	1.0	0.0	1.6	3.9	....	6.7	32.5	43.4	6.2	−1.8	10.8	29
1.4	.....	0.03	0.0	0.04	0.0	.....	1.3	0.4	0.0	0.0	42.8	5.0	1.1	0.0	0.8	3.5	....	4.6	39.7	48.3	6.5	−0.9	9.5	30
at EAST FLORENCEVILLE, N.B.* – Drainage area, 13,430 square miles.																								
1.7	.....	0.12	0.0	.....	....	.....	1.8	0.6	.....	0.0	33.9	7.6	1.3	....	1.2	4.8	....	7.0	34.8	47.0	9.9	−1.4	10.3	31
1.5	.....	.....	....	.....	....	.....	1.9	0.4	.....	0.0 (0)	41.4 (40.3)	5.8	1.5	0.2	1.2	4.7	....	4.1	38.1	49.7	7.3	−1.3	10.1	32
0.9	.....	.....	....	.....	....	.....	1.7	0.4	.....	0.0	44.2	5.4	1.6	....	1.2	4.5	....	4.4	40.7	52.3	8.0	−1.2	9.9	33
1.4	.....	0.32	0.0	0.0	....	.....	1.5	0.4	.....	0.0	41.8	4.5	1.2	0.2	1.0	5.2	....	5.1	39.4	49.8	7.5	−0.9	9.6	34

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105°C.	Suspended matter Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids) Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids) Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids) Tons per day	Loss on ignition at 550°C.	Specific conductance K × 10⁶ at 25°C.	Calcium (Ca)
																		STATION NO. 6 – SAINT JOHN RIVER
1	Aug. 9/54	9:42	.....	.....	66	.....	1.4	7.7 (7.0)	35 (80)	10	.....	.....	.....	.....	.....	.....	92.2	14.8
																		STATION NO. 7 – SAINT JOHN RIVER
2	July 9/54	7:41	34,400†	33,800†	62	16	6.1	7.0	70	3	.....	.....	72.2	0.098	6,690	27.4	82.5	12.1
3	Aug. 10	8:41	35,900	34,200	63	.....	1.6	7.7 (7.4)	40	8	.....	.....	.....	.....	.....	.....	91.3	14.3
4	Sept. 1	8:21	16,300	37,300	62	.....	2.6	7.5	60	1	.....	.....	.....	.....	.....	.....	90.2	14.3
5	Sept. 10	5:42	13,400	37,300	58	13	2.9	7.5	45	3	.....	.....	.....	.....	.....	.....	96.3	15.7
6	Sept. 13	4:30	135,000	37,300	55	10.5	1.1	7.9	.....	175	.....	.....	85.8	0.117	31,670	27.6	93.4	16.1
7	Oct. 11	4:50	33,900	42,100	50	17	1.6	7.6	65	2	.....	.....	.....	.....	.....	.....	81.1	13.1
8	Nov. 10	7:54	36,900	34,400	40	9.7	1.4	7.7	55	2	.....	.....	.....	.....	.....	.....	89.5	14.1
9	Dec. 13	3:49	19,500	26,000	34	14	3.2	7.4	40	10	15	10	88.0	0.120	4,640	36.0	106.3	16.7
10	Jan. 10/55	3:25	19,100	18,000	34	8.5	2.7	7.5	35	0	.....	.....	.....	.....	.....	.....	114.6	17.8
11	Feb. 14	7:38	17,900	21,600	32	12	2.6	7.5	35	8	.....	.....	.....	.....	.....	.....	169.4	19.0
12	Mar. 9	6:47	18,300	21,300	33	9.4	3.0	7.4	40	8	10.1	8.5	91.2	0.124	4,500	22.8	129.9	17.9
13	Apr. 11	4:25	43,300	88,200	32	.....	1.2	7.8	30	6	.....	.....	.....	.....	.....	.....	114.9	16.6
14	May 11	6:14	114,000	90,100	43	.....	3.8	7.1	40	6	.....	.....	.....	.....	.....	.....	65.6	9.7
15	June 10	17:25	27,900	26,300	64	15	3.2	7.3	40	0.8	.....	.....	70.0	0.095	5,252	28.8	85.5	13.6
16	July 12	13:28	7,520	8,940	75	14	1.8	7.7	25	0.8	.....	.....	82.4	0.112	1,672	16.0	116.0	19.0

† Discharge records at highway bridge at Pokiok, N.B.; ice conditions December 29, 1954 to April 19, 1955.

			Gauge height in feet															STATION NO. 8 – SAINT JOHN RIVER
17	July 12/54	4:38	6.1†	.....	64	16	3.2	7.3	65	1	.....	.....	75.8	0.103	.....	30.0	87.0	13.3
18	Aug. 12*	13:50	.....	.....	63	.....	1.6	7.3 (6.9)	45 (70)	8	.....	.....	.....	.....	.....	.....	111.3	14.1
19	Aug. 12	5:20	.....	.....	62	.....	8.0	7.0	50	0	.....	.....	.....	.....	.....	.....	91.0	14.9
20	Sept. 13	4:39	15.2†	.....	58	17	1.1	7.9	.....	35	.....	.....	.....	.....	.....	.....	106.3	18.1
21	Oct. 12	3:41	7.0†	.....	54	15	2.1	7.5	60	10	11.1	9.6	74.6	0.102	.....	23.8	85.3	13.8
22	Nov. 13	5:53	7.1†	.....	41	10	1.4	7.7	50	4	.....	.....	.....	.....	.....	.....	96.8	15.2
23	Dec. 13	6:43	7.6†	.....	33	13	2.4	7.5	40	40	.....	.....	.....	.....	.....	.....	107.2	16.7
24	Jan. 12/55	5:34	8.6†	.....	32	9.6	2.4	7.5	40	0.3	.....	.....	88.8	0.121	.....	27.2	110.8	16.6
25	Feb. 14	7:38	7.7†	.....	32	10	3.4	7.3	30	3	.....	.....	.....	.....	.....	.....	111.5	14.7
26	March	No sample taken																
27	Apr. 12	6:25	10.0†	.....	33	.....	2.7	7.4	30	9	.....	.....	.....	.....	.....	.....	104.1	15.5
28	May 12	5:28	15.9†	.....	45	9.6	1.9	7.4	40	4	9.6	6.9	61.6	0.084	.....	31.2	66.2	10.0
29	June 16	20:76	5.9†	.....	62	17	2.1	7.5	35	3	.....	.....	78.4	0.107	.....	23.6	108.5	14.6

* Sampled after chlorination.
† Collector's estimate of discharge records

																		STATION NO. 9 – SAINT JOHN RIVER
30	Aug. 13/54	13:169	High	.....	63	.....	0	9.5 (7.6)	70 (70)	4	8.8	2.6	73.2	0.099	.....	31.2	78.7	12.2
																		STATION NO. 10 – SAINT JOHN RIVER
			Gauge height in feet															
31	July 14/54	12:55	4.0†	.....	70	.....	3.5	7.2	60	2	.....	.....	65.6	0.089	.....	28.8	70.9	9.3
32	Aug.	No sample taken																
33	Sept.	No sample taken																
34	Oct. 14	8:56	3.5	.....	52	14	1.4	7.6	70	1	.....	.....	83.6	0.114	.....	28.4	96.8	11.8

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at WOODSTOCK, N.B.																								
1.7	.....	.....	.....	.....	.....	.....	1.4	0.6	.....	0.0 (0)	42.8 (42.9)	10.3	1.7	.....	1.0	4.4	.....	8.8	43.9	57.0	6.4	−1.0	9.9	1
at HAWKSHAW, N.B. – Drainage area at Pokiok, 14,950 square miles																								
1.6	.....	0.12	0.0	.....	.....	.....	2.0	0.6	.....	0.0	37.8	7.8	1.4	.....	1.6	4.7	.....	5.7	36.7	50.5	10.4	−1.8	10.6	2
1.7	.....	.....	.....	.....	.....	.....	1.4	0.3	.....	0.0	46.4	6.5	1.7	.....	0.4	4.6	.....	4.6	42.7	53.8	6.6	−1.0	9.7	3
2.0	.....	.....	.....	.....	.....	.....	2.9	0.5	.....	0.0	46.7	6.9	1.6	.....	1.2	4.8	.....	5.4	43.7	57.2	11.4	−1.2	10.1	4
1.0	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0	47.7	5.9	1.6	.....	1.2	4.3	.....	4.7	43.3	55.0	6.5	−0.2	8.0	5
1.1	.....	0.10	.....	0.11	.....	.....	1.5	1.2	.....	0.0	50.8	6.8	2.0	.....	1.6	4.9	.....	3.0	44.7	60.7	6.3	−0.7	9.3	6
1.5	.....	.....	.....	.....	.....	.....	1.2	0.3	.....	0.0	39.0	4.0	1.8	....	1.5	4.9	.....	6.9	38.9	47.5	6.2	−1.1	9.8	7
1.4	.....	.....	.....	.....	.....	.....	1.3	0.3	.....	0.0	41.7	5.3	1.5	.....	1.2	5.3	0.00	6.7	40.9	50.9	6.4	−1.0	9.7	8
1.6	0.05	0.05	0.0	0 0	0.0	.....	1.8	0.5	.....	0.0	46.7	8.7	3.2	0.0	2.8	4.2	.....	10.0	48.3	62.6	7.4	−1.2	9.8	9
1.5	.....	.....	.....	.....	.....	.....	1.5	0.5	.....	0.0	49.2	10.3	2.6	.....	1.6	5.2	.....	10.2	50.6	65.3	6.0	−1.0	9.5	10
2.1	.....	.....	.....	.....	.....	.....	9.2	1.1	.....	0.0	50.2	13.1	14.8	.....	3.6	4.3	.....	14.8	56.0	92.0	25.8	−1.0	9.5	11
1.6	.....	0.05	0.0	0.05	0.0	.....	4.1	0.6	.....	0.0	46.7	10.4	6.3	0.1	3.2	5.7	.....	12.9	51.2	73.5	14.4	−1.2	9.8	12
1.7	.....	.....	.....	.....	.....	.....	1.4	0.7	.....	0.0	47.4	7.3	2.8	.....	1.6	5.3	.....	9.5	48.4	60.8	5.8	−0.8	9.4	13
0.9	.....	.....	.....	.....	.....	.....	1.0	0.6	0.1	0.0	28.6	3.4	1.0	.....	0.8	4.1	.....	4.8	27.9	35.4	7.1	−1.9	10.9	14
1.2	.....	Trace	0.0	0.22	0.0	.....	1.0	0.5	0.2	0.0	38.3	8.5	1.0	0.0	1.2	3.8	.....	7.5	38.9	49.9	5.1	−1.5	10.3	15
1.6	.....	0.01	0.0	0.03	Trace	.....	1.3	0.5	0.0	0.0	57.4	5.8	1.9	0.0	1.2	4.0	.....	6.9	54.0	63.6	4.9	−0.7	9.1	16
at FREDERICTON, N.B.																								
1.3	.....	.....	.....	.....	.....	.....	2.9	0.6	.....	0.0	39.5	8.5	1.6	.....	2.0	5.0	.....	6.4	38.8	54.8	13.9	−1.5	10.3	17
2.1	.....	.....	.....	.....	.....	.....	1.5	0.9	.....	0.0 (0)	18.8 (22.7)	24.8	3.9	.....	0.6	3.9	.....	28.6	44.0 (43.5)	60.6	5.8	−1.8	10.9	18
2.1	.....	.....	.....	.....	.....	.....	2.6	0.6	.....	0.0	48.9	8.4	1.3	.....	1.6	4.3	.....	5.8	45.9	59.9	10.8	−1.6	10.2	19
1.6	.....	.....	.....	.....	.....	.....	1.6	1.3	.....	0.0	52.3	7.2	2.1	.....	2.4	3.7	.....	8.8	51.7	63.8	6.1	−0.6	9.1	20
1.4	.....	0.17	0.0	0.17	.....	.....	1.6	0.4	.....	0.0	41.4	7.9	1.3	.....	1.6	5.2	.....	6.2	40.2	54.1	7.5	−1.2	9.9	21
1.8	.....	.....	.....	.....	.....	.....	1.3	0.4	.....	0.0	45.0	8.0	2.0	.....	2.4	4.9	0.0	8.4	45.3	58.2	5.8	−1.0	9.7	22
1.7	.....	.....	.....	.....	.....	.....	1.4	0.5	.....	0.0	47.2	9.7	2.5	.....	2.4	6.2	.....	10.0	48.7	63.4	5.8	−1.0	9.5	23
2.1	.....	0.06	0.0	0.08	0.0	.....	1.4	0.5	.....	0.0	46.3	11.0	2.3	0.04	3.6	5.1	.....	12.0	50.0	65.6	5.6	−1.1	9.7	24
2.1	.....	.....	.....	.....	.....	.....	1.8	0.7	.....	0.0	40.8	10.6	2.8	.....	3.4	3.7	.....	11.8	45.3	59.9	7.8	−1.4	10.1	25
																								26
1.9	.....	.....	.....	.....	.....	.....	1.3	0.5	.....	0.0	43.0	8.1	2.5	.....	0.6	5.7	....	11.2	46.5	57.3	5.6	−1.2	9.8	27
1.1	.....	0.04	0.0	0.07	0.0	.....	1.0	0.4	0.1	0.0	28.6	5.9	1.6	0.0	1.2	3.8	.....	6.0	29.5	39.2	6.7	−1.6	10.6	28
1.9	.....	0.06	0.0	0.03	0.0	.....	1.4	0.5	0.0	0.0	44.0	6.9	1.5	0.0	1.6	4.0	.....	8.1	44.2	54.2	6.3	−1.1	9.7	29
near GAGETOWN, N.B.																								
1.6	.....	0.09	0.0	0.0	0.02	.....	1.5	0.3	.....	1.2 (0)	37.7 (40.3)	5.3	1.7	0.0	1.2	5.6	.....	4.1 (5.1)	37.0 (38.2)	49.3	8.0	+0.7	8.1	30
at OAK POINT, N.B.																								
1.4	.....	0.22	0.0	.....	.....	.....	3.0	0.9	.....	0.0	28.3	7.4	3.5	.....	4.0	3.7	.....	5.9	29.1	47.9	17.7	−1.8	10.8	31
																								32
1.8	.....	0.12	0.0	0.0	0.0	.....	4.6	0.6	.....	0.0	35.8	7.3	7.1	0.1	1.2	4.8	.....	7.4	36.8	57.1	21.6	−1.2	10.0	33 34

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 10 – SAINT JOHN RIVER
			Gauge height in feet															
1	Nov. 15/54	9:49	4.5	.....	34	9.6	2.1	7.4	50	6	.....	.....	.....	.....	.....	.....	84.7	11.2
2	Dec. 14	7:48	4.5	.....	34	11	3.8	7.2	40	2	.....	.....	73.6	0.100	.....	27.6	99.9	11.7
3	Jan. 14/55	14:55	3.1	.....	32	8.2	3.4	7.3	40	0	.....	.....	.....	.....	.....	.....	104	13.7
4	Feb. 14*	7:44	3.3	.....	33	8.6	3.3	7.3	35	0	.....	.....	.....	.....	.....	.....	724	16.7
5	Mar. 14	8:42	2.7	.....	35	8.8	5.7	7.0	35	3	.....	.....	65.2	0.089	.....	19.2	91.8	12.3
6	Apr. 14	6:32	3.7	.....	37	.....	1.5	7.5	30	4	.....	.....	.....	.....	.....	.....	79.6	11.1
7	May 14	3:8	9.8	.....	48	.....	2.5	7.2	40	3	.....	.....	.....	.....	.....	.....	56.1	7.6
8	June 14	22:28	3.8	.....	62	17	2.1	7.3	45	2	.....	.....	62.4	0.085	.....	27.2	70.1	9.9

† Collectors reading of gauge.
* Tidal influence due to northwest wind.

																		STATION NO. 11 – SAINT JOHN RIVER and BAY OF FUNDY
9	(Composite sample) June /50	.....	.....	.....	.....	.....	.....	7.6	.....	.....	.....	.....	25,200	34.28	.....	.....	.....	740

* Sampled from harbour.

																		STATION NO. 12 – FRONTIER LAKE (SAINT JOHN RIVER)
10	Aug. 3/54	7:50	.....	.....	66	.....	.....	4.6 (6.8)	140 (180)	5	.....	.....	61.2	0.083	.....	28.2	.....	7.0
																		STATION NO. 13 – BIG BLACK RIVER
11	Aug. 3/54	7:50	Low	.....	70	.....	1.0	7.7 (7.2)	150 (180)	4	.....	.....	70.2	0.095	.....	28.0	81.3	9.2

* Sampled from highway No. 24 bridge.

																		STATION NO. 14 – ALLAGASH RIVER
			Gauge height in feet*															
12	Sept. 26/52	.....	1.88	.....	.....	.....	2.6	7.4	29	.....	.....	.....	56**	0.076	.....	.....	73.8	11.0
13	Apr. 10/53	.....	6.74	.....	.....	.....	8.9	6.5	25	.....	.....	.....	47**	0.064	.....	23	41.0	6.1

* Data supplied by Quality of Waters Branch, Water Resources Division, United States Geological Survey, Washington, D.C., U.S.A.
** Dried at 180°C.

																		STATION NO. 15 – ST. FRANCIS RIVER
14	July 1/54	6:14	High†	.....	61	.....	1.3	7.5	40	2	.....	.....	52.0	0.071	.....	17.4	64.7	9.1
15	Aug. 4	6:47	Low	.....	64	.....	0.8	7.8 (6.5)	40 (45)	3	.....	.....	.....	.....	.....	.....	60.2	9.6
16	Sept. 3	5:40	High	.....	61	.....	2.3	7.3	45	0	.....	.....	.....	.....	.....	.....	78.6	9.7
17	Oct.	No sample taken																
18	Nov. 2	8:36	High	.....	46	8.2	1.3	7.6	35	1	.....	.....	.....	.....	.....	.....	63.4	9.7
19	Dec.	No sample taken																
20	Jan. 4/55	3:36	High	.....	35	11	2.2	7.3	50	0.2	.....	.....	51.6	0.070	.....	26.6	59.0	9.7
21	Feb.	No. sample taken																
22	Mar. 5	6:51	Low	.....	34	8.0	2.6	7.3	45	0.2	.....	.....	55.6	0.076	.....	22.0	66.6	10.7
23	Apr.	No sample taken																
24	May 17	8:15	High	.....	41	.....	1.6	7.4	40	2	.....	.....	.....	.....	.....	.....	58.9	9.1
25	June 6	12:40	12 ft. above normal		50	.....	2.3	7.3	35	2	.....	.....	.....	.....	.....	.....	59.0	10.1
26	July 8	10:19	Low	.....	75	15	1.1	7.6	45	0.2	.....	.....	52.4	0.071	.....	16.8	67.3	9.1

† No records; collector's estimate of discharge or river level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at OAK POINT, N.B. – (Continued)																								
1.4	.....	.....	.....	.....	.....	.....	2.5	0.5	.....	0.0	33.0	5.6	3.4	.....	1.2	4.5	0.0	6.6	33.7	46.6	13.6	-1.5	10.4	1
1.6	.....	0.07	0.0	0.0	0.0	.....	2.0	0.6	.....	0.0	35.6	6.9	2.9	0.0	4.0	2.6	.....	6.6	35.8	49.9	10.6	-1.7	10.6	2
1.8	.....	.....	.....	.....	.....	.....	3.4	0.5	.....	0.0	36.2	9.8	5.7	.....	1.8	3.6	.....	11.9	41.6	58.1	14.9	-1.6	10.5	3
13.0	.....	.....	.....	.....	.....	.....	97.0	4.5	.....	0.0	37.5	33.8	17.6	.....	0.6	4.1	.....	64.3	95.1	364	67.8	-1.5	10.3	4
1.6	.....	0.06	0.0	Trace	0.0	.....	2.1	0.5	.....	0.0	33.9	8.8	3.3	0.1	2.2	5.7	.....	9.5	37.3	53.4	10.7	-1.0	10.8	5
1.3	.....	.....	.....	.....	.....	.....	1.3	0.6	.....	0.0	30.0	7.6	2.0	.....	1.2	4.3	.....	8.4	33.0	44.2	7.7	-1.6	10.7	6
1.3	.....	.....	.....	.....	.....	.....	0.9	0.4	0.2	0.0	23.6	2.8	1.3	.....	0.4	2.7	.....	4.9	24.3	29.1	7.3	-2.0	11.2	7
1.1	.....	0.15	0.0	0.01	0.0	.....	1.4	0.5	0.1	0.0	27.3	7.3	1.5	0.0	1.6	3.5	.....	6.8	29.2	40.5	9.2	-1.6	10.5	8
at SAINT JOHN, N.B.*																								
675	0.37	.....	.....	.....	.....	.....	7,600	360	Bromide 80 ppm	0.0	115	1,926	13,840	.....	.....	5.4	.....	4,530	4,625	.....	.....	.....	.....	9
at FRONTIER LAKE, QUE.																								
1.6	.....	0.12	.....	.....	.....	.....	1.0	0.2	.....	0.0 (0)	24.6 (17.7)	3.5	1.0	.....	0.4	4.2	.....	3.7 (7.7)	23.9 (22.2)	31.1	8.3	-4.6	13.8	10
near ST. PAMPHILE, QUE.*																								
1.3	.....	0.12	.....	.....	.....	.....	1.1	0.2	.....	0.0 (0)	29.5 (25.5)	3.8	1.2	.....	1.0	4.7	.....	4.3 (6.9)	28.5 (27.6)	37.1	7.8	-1.3	10.3	11
near ALLAGASH, MAINE, U.S.A.*																								
0.9	0.02	0.0	0.0	0.1	0.0	0.0	1.2	0.4	.....	0.0	41.0	1.2	0.1	0.1	0.8	4.6	.....	0.0	31.0	40.6	7.5	-1.4	6.0	12
0.6	0.08	0.01	0.0	0.0	0.02	0.1	0.7	0.0	.....	0.0	17.0	2.4	0.3	0.0	0.2	3.4	.....	4.0	18.0	22.2	7.8	-2.9	12.3	13
near ESTCOURT, QUE.																								
0.8	.....	0.05	.....	0.02	.....	.....	2.4	1.1	.....	0.0	26.6	6.3	1.2	.....	0.8	3.1	.....	4.1	25.9	38.0	16.1	-1.6	9.7	14
0.8	.....	.....	.....	.....	.....	.....	1.2	0.4	.....	0.0 (0)	29.5 (25.2)	5.1	0.9	.....	0.8	2.9	.....	3.0	27.2	36.2	8.6	-1.2	10.2	15
0.6	.....	.....	.....	.....	.....	.....	1.4	0.5	.....	0.0	27.3	5.7	0.8	.....	0.6	3.9	.....	4.3	26.7	36.6	10.0	-2.2	10.9	16
																								17
0.7	.....	.....	.....	.....	.....	.....	1.1	0.3	.....	0.0	28.0	4.5	0.9	.....	0.8	3.8	0.00	4.1	27.1	35.6	8.0	-1.5	10.4	18
																								19
0.9	.....	0.03	0.0	0.0	0.0	.....	1.1	0.3	.....	0.0	27.7	5.5	1.1	0.08	0.8	3.8	.....	5.2	27.9	36.9	7.8	-1.7	10.7	20
																								21
0.6	.....	0.04	0.0	Trace	0.0	.....	1.2	0.3	.....	0.0	30.5	4.6	1.0	0.1	0.8	4.0	.....	4.2	29.2	38.3	8.1	-1.7	10.7	22
																								23
0.5	.....	.....	.....	.....	.....	.....	0.9	0.5	0.1	0.0	24.4	4.4	1.2	.....	0.8	3.7	.....	4.8	24.8	33.1	7.1	-1.7	10.8	24
0.6	.....	.....	.....	.....	.....	.....	0.8	0.4	.....	0.0	29.1	4.1	0.6	.....	0.8	3.3	.....	3.8	27.7	35.1	5.8	-1.3	10.7	25
0.6	.....	0.02	0.0	0.03	0.0	.....	1.1	0.4	0.1	0.0	25.2	4.6	0.9	0.0	0.6	3.2	.....	4.5	25.2	33.0	8.5	-1.4	10.4	26

88095-5—2½

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105°C.	Suspended matter Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids) Parts per million	Tons per acre-foot	Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 16 – ST. FRANCIS RIVER
1	July 3/54	9:47	915†	708†	65	9.2	2.5	7.4	40	1	.....	.....	63.2	0.086	156	19.6	75.1	11.2
2	Aug. 4	12:15	895	1,780	65	.....	1.3	7.8	35	3	.....	.....	.....	.....	.....	.....	79.3	13.8
3	Aug. 5	6:46	1,140	1,780	65	.....	0.9	8.0 (7.5)	40	4	.....	.....	.....	.....	.....	.....	79.3	13.1
4	Sept. 2	6:50	652	1,160	63	.....	1.1	7.8	50	0.7	.....	.....	.....	.....	.....	.....	88.8	12.5
5	Oct. 2	13:32	1,790	1,650	53	10.	2.1	7.5	45	0.7	.....	.....	65.8	0.090	320	16.6	79.2	12.9
6	Nov. 3	13:41	831	1,100	45	8.4	2.1	7.5	45	1	.....	.....	.....	.....	.....	.....	82.6	13.1
7	Dec. 5	10:50	929	743	38	9.2	1.5	7.6	40	10	.....	.....	.....	.....	.....	.....	77.7	13.1
8	Jan. 3/55	10:37	543	418	34	7.8	1.7	7.6	45	0.2	.....	.....	63.6	0.088	94.8	22.0	79.1	13.3
9	Feb. 5	3:27	260	251	31	.....	1.9	7.6	40	2	.....	.....	.....	.....	.....	.....	85.3	14.3
10	Mar. 2	15:33	308	351	33	.....	2.9	7.4	35	0	.....	.....	.....	.....	.....	.....	88.2	14.6
11	Apr. 1	12:54	372	2,970	35	7.5	6.3	7.1	30	0	.....	.....	70.8	0.096	70.9	27.2	90.8	15.1
12	May 2	11:22	7,810	4,510	38	.....	1.7	7.5	35	2	.....	.....	.....	.....	.....	.....	69.9	11.5
13	June 1	12:40	2,280	1,350	50	.....	2.3	7.3	35	2	.....	.....	.....	.....	.....	.....	59.0	10.1
14	July 5	20:35	469	345	72	15	1.1	7.7	35	0	.....	.....	58.4	0.079	73.5	20.0	71.5	12.1

† Discharge records near Connors, at outlet of Glazier Lake, Maine – New Brunswick border – drainage area, 496 square miles.

STATION NO. 17 – FISH RIVER

			Gauge height in feet															
15	Oct. 13/53	.....	2.47*	.....	.....	.....	.....	7.4	15	.....	.....	.....	51**	0.069	.....	16	.....	11

* Data supplied by Quality of Waters Branch, Water Resources Divisioa, U.S. Geological Survey, Washington, D.C., U.S.A.
** Dried at 180°C.

STATION NO. 18 – CABANO RIVER

16	Aug. 4/54	7:118	.....	.....	64	.....	2.5	7.6 (7.4)	30 (40)	5	4.7	3.4	71.6	0.097	.....	3.6	103.2	15.8

STATION NO. 19 – LAC TEMISCOUATA

17	Aug. 5/54	6:117	.....	.....	64	.....	1.4	7.9 (7.5)	25 (25)	4	3.2	0.8	86.0	0.117	.....	5.8	120.2	19.4

STATION NO. 20 – MADAWASKA RIVER

18	July 2/54	6:13	1,940	1,850	65	.....	2.2	7.7	10	2	.....	.....	78.4	0.106	407	13.4	113.7	17.4
19	Aug. 4	6:49	1,700	3,460	65	.....	0.7	8.2	25	5	.....	.....	77.6	0.105	354	15.8	115.5	18.5
20	Aug. 5	6:46	2,490	3,460	62	.....	1.1	8.0 (7.4)	40 (40)	5	.....	.....	.....	.....	.....	.....	110.0	17.6
21	Sept. 2	6:41	1,710	2,370	61	22	1.4	7.9	25	1	.....	.....	.....	.....	.....	.....	120.1	19.1
22	Oct. 28	7:67	2,710	3,060	50	7.2	1.4	7.9	25	6	6.3	4.7	88.0	0.119	639	23.6	122.5	19.2
23	Nov. 29	8:56	2,420	2,370	45	5.6	4.4	7.4	20	3	.....	.....	.....	.....	.....	.....	121.2	18.7
24	Dec.	No sample taken		1,710														
25	Jan. 11/55	13:72	1,190*	983	35	5.5	1.4	7.9	30	0	.....	.....	.....	.....	.....	.....	124.4	20.2
26	Feb. 2	5:77	2,020*	546	35	4.6	2.4	7.7	25	0	.....	.....	83.2	0.113	453	16.8	121.7	20.0
27	Mar. 4	7:41	1,530*	674	35	5.4	1.8	7.8	30	0.2	.....	.....	.....	.....	.....	.....	127.3	20.2
28	Apr. 7	13:29	1,070	5,980	40	.....	1.7	7.8	20	0	.....	.....	.....	.....	.....	.....	130.7	21.1
29	May 9	10:39	11,900	7,580	41	6.5	1.4	7.9	30	0	.....	.....	82.4	0.112	2,641	39.2	120.7	20.1
30	June 2	11:33	4,350	2,510	45	14	1.7	7.8	25	2	.....	.....	86.0	0.117	1,011	22.0	116.9	19.0
31	July 3	31:43	1,270	608	70	.....	9.8	7.0	30	.....	.....	.....	.....	.....	.....	.....	117.5	18.8

* Ice conditions, January 1, 1955 to March 31, 1955.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at mouth near CONNORS, N.B.																								
1.2	.....	0.09	0.0	.....	.....	.....	1.6	0.3	.....	0.0	36.8	5.5	0.6	.....	0.6	3.8	.....	2.8	33.0	43.0	9.4	−1.5	10.4	1
0.9	.....	.....	.....	.....	.....	.....	2.2	0.5	.....	0.0	47.9	4.3	1.7	0.1	0.2	3.5	.....	0.0	38.3	50.8	10.9	−0.9	9.6	2
1.2	.....	.....	.....	.....	.....	.....	1.3	0.3	.....	0.0	41.4	5.5	0.7	.....	0.6	3.9	.....	3.7	37.7 (37.8)	47.0	6.9	−0.8	9.6	3
1.6	.....	.....	.....	.....	.....	.....	1.3	0.4	.....	0.0	39.6	3.9	0.7	.....	1.0	4.1	.....	5.3	37.8	44.9	6.8	−1.0	9.8	4
1.1	.....	0.03	0.0	0.12	0.0	.....	1.8	0.7	.....	0.0	41.3	4.0	1.0	.....	2.8	4.3	.....	2.8	36.7	49.1	9.4	−1.3	10.1	5
1.0	.....	.....	.....	.....	.....	.....	1.0	0.3	.....	0.0	41.4	5.0	0.5	.....	0.6	4.8	0.00	2.8	36.8	46.7	5.5	−1.2	9.9	6
0.8	.....	.....	.....	.....	.....	.....	1.0	0.3	.....	0.0	37.9	5.0	1.0	.....	0.4	5.9	.....	4.9	36.0	46.2	5.6	−1.1	9.8	7
1.2	.....	0.04	0.0	0.0	0.0	.....	1.0	0.4	.....	0.0	40.8	5.3	0.8	0.0	0.6	4.4	.....	4.6	38.1	47.1	5.3	−1.1	9.8	8
1.1	.....	.....	.....	.....	.....	.....	1.2	0.3	.....	0.0	44.2	5.8	1.0	.....	0.4	3.3	.....	3.9	40.2	49.2	6.0	−1.1	9.8	9
1.0	.....	.....	.....	.....	.....	.....	1.3	0.3	.....	0.0	43.6	5.6	0.5	.....	0.6	4.8	.....	4.7	40.5	50.2	6.5	−1.3	10.0	10
1.1	.....	0.08	0.0	0.01	0.0	.....	1.3	0.4	.....	0.0	49.9	4.4	0.8	0.0	0.2	4.5	.....	1.3	42.2	52.5	6.2	−1.5	10.1	11
0.9	.....	.....	.....	.....	.....	.....	0.9	0.4	0.1	0.0	33.2	3.4	0.9	.....	0.8	2.7	.....	2.7	29.9	37.8	6.0	−1.4	10.3	12
0.6	.....	.....	.....	.....	.....	.....	0.8	0.4	0.1	0.0	29.1	4.1	0.6	.....	0.8	3.3	.....	3.8	27.7	35.1	5.8	−1.3	10.7	13
0.6	.....	0.02	0.0	0.03	Trace	.....	0.9	0.4	0.1	0.0	35.1	4.5	0.7	0.0	0.6	4.7	.....	3.9	32.7	42.0	5.5	−1.1	9.9	14
near FORT KENT, MAINE, U.S.A.*																								
									Lithium															
1.8	0.02	0.0	0.0	0.0	0.02	0.0	1.6	0.4	0.0	0.0	36.0	3.4	2.9	0.1	0.4	3.3	.....	5	35.0	43	9.0	−1.5	10.4	15
at CABANO, QUE.																								
2.2	.....	0.06	0.0	0.0	.....	.....	1.8	0.5	.....	0.0 (0)	55.6 (55.6)	6.8	1.3	.....	1.0	4.1	.....	2.9 (2.4)	48.5 (48.0)	61.2	7.4	−1.0	9.6	16
at NOTRE-DAME-DU-LAC, QUE.																								
2.2	.....	0.01	0.0	0.0	.....	.....	1.7	0.5	.....	0.0 (0)	66.3 (65.5)	6.0	1.5	.....	1.2	3.9	.....	3.0	57.4	69.3	6.0	−0.5	8.8	17
at highway bridge at STE. ROSE-DU-DÉGELÉ, QUE.–Drainage area, 1,910 square miles.																								
3.0	.....	0.04	.....	0.0	.....	.....	2.8	1.2	.....	0.0	63.6	6.3	1.6	.....	0.6	3.5	.....	3.4	55.6	67.7	9.6	−0.8	9.3	18
2.7	.....	0.03	.....	.....	.....	.....	1.7	0.4	.....	0.0	68.8	5.0	1.0	.....	0.8	4.2	.....	0.9	57.3	68.5	6.0	−0.3	8.8	19
2.5	.....	.....	.....	.....	.....	.....	1.4	0.5	.....	0.0 (0)	62.2 (60.6)	5.0	1.1	.....	0.2	3.5	.....	3.2 (4.4)	54.2 (54.1)	62.4	5.3	−0.5	9.0	20
2.3	.....	.....	.....	.....	.....	.....	1.6	0.5	.....	0.0	66.6	5.3	1.1	.....	0.6	4.1	.....	2.5	57.1	67.4	5.7	−0.5	10.9	21
2.5	.....	0.0	.....	Trace	0.0	.....	1.6	0.4	.....	0.0	66.2	4.4	1.5	0.0	0.8	5.1	.....	3.9	58.2	68.1	5.6	−0.5	8.9	22
2.6	.....	.....	.....	.....	.....	.....	2.0	0.7	.....	0.0	66.3	5.9	1.7	.....	1.2	3.5	0.05	3.0	57.4	69.0	6.9	−1.0	9.4	23
																								24
1.9	.....	.....	.....	.....	.....	.....	1.8	0.4	.....	0.0	67.5	4.9	1.0	.....	0.6	3.1	.....	2.8	58.2	67.2	6.3	−0.6	9.1	25
2.5	.....	Trace	Trace	0.0	0.0	.....	1.7	0.5	.....	0.0	68.6	6.6	0.8	Trace	0.7	3.9	.....	3.9	60.2	70.5	5.7	−0.7	9.1	26
2.4	.....	.....	.....	.....	.....	.....	2.6	0.4	0.3	0.0	69.1	6.6	1.1	.....	0.6	3.9	.....	3.6	60.3	71.9	8.5	−0.5	8.8	27
2.3	.....	.....	.....	.....	.....	.....	1.4	0.6	.....	0.0	71.7	4.6	0.9	.....	0.8	4.8	.....	3.3	62.1	71.8	4.6	−0.5	8.8	28
2.0	.....	0.02	0.0	0.0	0.0	.....	1.5	0.5	0.0	0.0	66.3	4.8	1.1	0.0	0.8	3.9	.....	4.0	58.4	67.4	5.2	−0.5	8.9	29
1.9	.....	0.0	0.0	0.09	0.0	.....	1.3	0.6	0.0	0.0	61.1	4.8	0.9	0.0	0.8	5.1	.....	2.6	52.7	64.6	5.0	−0.6	9.0	30
1.8	.....	.....	.....	.....	.....	.....	1.4	0.4	0.2	0.0	62.5	4.3	0.6	.....	0.8	3.5	.....	3.0	54.3	62.6	5.3	−1.3	9.6	31

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105° C.	Suspended matter: Ignited at 550° C.	Residue on evaporation dried at 105° C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per day	Loss on ignition at 550° C.	Specific conductance $K \times 10^6$ at 25° C.	Calcium (Ca)
STATION NO. 21 – MADAWASKA RIVER																		
			Gauge height in feet															
1	July 7/54	5:41	471.3†	.....	63	.....	3.4	7.5	25	1	.....	.....	84.0	0.114	.....	22.0	116.8	17.6
2	Aug. 6	6:45	471.3	.....	61	.....	7.7	7.0	75	4	.....	.....	.....	.....	.....	.....	111.8	16.4
3	Aug. 6**	4:47	471.3	.....	60.5	.....	.....	7.9	60	4	.....	.....	77.2	0.105	.....	22.2	97.4	15.8
4	Sept. 7	6:45	471.1	.....	58	11	2.9	7.6	15	0	.....	.....	.....	.....	.....	.....	114.8	21.4
5	Oct. 7	7:39	471.1	.....	48.5	6.8	1.7	7.8	25	0	.....	.....	.....	.....	.....	.....	113.9	18.5
6	Nov. 8	7:84	471.1	.....	44.5	5.9	1.7	7.8	10	1	.....	.....	87.6	0.119	.....	19.6	118.9	18.8
7	Dec. 7	4:34	471.1	.....	36	6.8	2.1	7.7	30	0.8	.....	.....	.....	.....	.....	.....	126.2	13.5
8	Jan. 11/55	3:24	471.1	.....	32.5	5.3	2.2	7.7	35	0.2	.....	.....	.....	.....	.....	.....	111.8	19.4
9	Feb. 7	4:72	471.1	.....	32	6.1	2.8	7.6	25	0	.....	.....	81.6	0.111	.....	16.4	125.3	20.0
10	Mar. 7	8:49	471.1	.....	32	.....	2.3	7.7	30	0	.....	.....	.....	.....	.....	.....	124.7	20.3
11	Apr. 7	6:25	471.1	.....	35.5	6.2	6.9	7.2	20	0.9	.....	.....	.....	.....	.....	.....	127.5	20.1
12	May 9	4:31	471.3	.....	37	5.3	2.1	7.7	20	2	.....	.....	89.2	0.122	.....	42.8	114.3	18.4
13	June 7	8:20	471.3	.....	54	13	1.6	7.8	20	25	.....	.....	105	0.143	.....	68.8	112.1	18.3
14	Nov. 26††	13:13	Low flow	.....	44	14	3.6	6.3	30	.....	19.1	7.6	136	0.185	.....	31.0	125.7	19.0
15	June 4/56†††	6:14	.....	.....	.....	6.4	2.7	7.6	40	.....	.....	.....	86.4	0.117	.....	9.6	122.5	20.8
16	Nov. 7††	6:35	.....	.....	.....	14	4.8	7.4	20	.....	.....	.....	.....	.....	.....	.....	151.7	19.5

* Sampled at civic plant intake pump.
** Probably some admixture with an industrial plant effluent.
† Level controlled by dam.
†† Sampled opposite civic well No. 2, from middle of river.
††† Sampled near civic wells, 50 feet from shore.

STATION NO. 21A – IROQUOIS RIVER

17	Oct. 23/58	7:13	.....	.....	.....	.....	5.0	7.1	20	.....	.....	.....	.....	.....	.....	.....	82.0	11.5

STATION NO. 22 – GREEN RIVER

18	Aug. 6/54	6:116	.....	.....	58	.....	1.4	7.8 (7.6)	30 (30)	4	5.2	3.8	59.2	0.080	.....	10.4	81.7	11.6

STATION NO. 23 – GRAND RIVER

19	Aug. 6/54	6:130	.....	.....	58	.....	2.6	7.4 (7.4)	240 (160)	11	27	22	86.0	0.117	.....	39.2	66.9	13.0

* Sampled at No. 2 highway bridge.

STATION NO. 24 – SALMON RIVER

20	Aug. 6/54	6:130	.....	.....	64	.....	1.5	8.0 (8.4)	40 (50)	5	4.5	1.8	104	0.141	.....	17.2	154.6	27.4

* Sampled at No. 21 highway bridge.

STATION NO. 25 – AROOSTOOK RIVER

			Gauge height in feet															
21	Sept. 27/52	.....	1.51	.....	.....	.....	2.3	7.5	20	.....	.....	.....	61.0**	0.083	.....	.....	93.9	13.0
22	Apr. 12/53	.....	8.07	.....	.....	.....	5.2	6.6	37	.....	.....	.....	48.0**	0.065	.....	.....	37.4	4.4

* Data supplied by Quality of Waters Branch, Water Resources Division, U.S. Geological Survey, Washington, D.C., U.S.A.
** Dried at 180° C.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at EDMUNDSTON, N.B.*																								
2.7	.....	0.09	0.0	.....	.....	.....	2.4	0.8	.....	0.0	64.6	7.4	1.3	0.0	1.2	4.0	.....	2.2	55.2	69.3	8.5	−1.0	9.5	1
2.3	.....	.....	.....	.....	.....	.....	2.5	0.8	.....	0.0	45.5	10.0	4.1	.....	1.2	3.9	.....	13.0	50.3	63.6	9.6	−1.7	10.4	2
2.3	.....	0.03	.....	.....	.....	.....	2.6	0.5	.....	0.0	56.5	5.6	1.2	.....	0.7	4.2	.....	2.4	48.8	61.4	10.4	−0.6	9.1	3
0.9	.....	.....	.....	.....	.....	.....	1.6	0.5	.....	0.0	64.0	5.6	1.1	.....	0.8	3.9	.....	4.6	57.1	67.3	5.5	−0.8	9.2	4
2.1	.....	.....	.....	.....	.....	.....	1.6	0.4	.....	0.0	62.8	5.6	1.0	0.1	0.4	4.2	.....	3.3	54.8	64.8	5.9	−0.7	9.2	5
2.1	.....	0.03	0.0	Trace	0.0	.....	1.6	0.4	.....	0.0	62.5	5.3	1.1	0.0	0.6	4.3	.....	4.2	55.5	65.0	5.8	−0.8	9.4	6
2.4	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0	64.2	6.1	0.9	.....	1.2	3.9	.....	3.3	56.0	66.5	5.1	−0.8	9.3	7
2.3	.....	.....	.....	.....	.....	.....	1.6	0.4	.....	0.0	65.1	6.9	1.2	.....	0.4	4.9	.....	4.5	57.9	69.2	5.6	−0.8	9.3	8
2.2	.....	0.02	0.0	0.0	0.0	.....	1.5	0.4	.....	0.0	66.4	6.2	0.8	0.0	0.6	4.0	.....	4.5	59.0	68.5	5.2	−0.8	9.2	9
2.1	.....	.....	.....	.....	.....	.....	1.5	0.4	.....	0.0	68.4	5.6	0.8	.....	0.6	4.8	.....	3.2	59.3	69.8	5.2	−0.6	8.9	10
2.2	.....	.....	.....	.....	.....	.....	1.7	0.6	.....	0.0	69.5	5.0	1.5	.....	0.8	2.8	.....	2.2	59.2	69.0	5.8	−1.1	9.4	11
2.1	.....	Trace	0.0	0.07	0.0	.....	1.4	0.5	0.2	0.0	62.2	4.3	1.0	0.0	0.6	3.9	.....	3.6	54.6	66.0	5.2	−0.8	9.3	12
1.9	.....	0.0	0.0	0.0	Trace	.....	1.0	0.4	0.0	0.0	58.5	5.1	1.5	0.0	1.2	4.2	.....	5.5	53.5	62.4	3.9	−0.7	9.2	13
2.3	0.63	0.45	0.01	0.0	Trace	0.0	2.1	0.7	0.4	0.0	44.5	20.8	1.4	0.0	Trace	3.9	.....	20.4	56.9	72.6	7.3	−2.3	10.9	14
1.7	.....	0.19	0.0	0.0	0.0	0.4	1.9	0.6	0.1	0.0	65.1	6.2	1.2	0.0	2.4	3.9	.....	5.5	58.9	71.0	6.4	−0.7	9.0	15
2.2	0.18	0.04	0.0	0.40	0.0	0.05	4.6	0.5	0.0	0.0	73.6	6.7	1.1	0.0	0.8	2.5	.....	0.0	57.7	74.7	14.2	−1.0	9.4	16
near EDMUNDSTON, N.B.																								
2.1	0.15	0.06	0.0	0.03	0.0	0.0	2.8	0.4	0.1	0.0	40.5	5.1	1.2	.....	.....	.....	.....	4.1	37.3	49.5	13.8	−1.7	10.5	17
at GREEN RIVER, N.B.																								
2.4	.....	0.03	0.0	0.04	.....	.....	1.6	0.4	.....	0.0 (0)	47.3 (47.9)	3.1	0.8	0.2	1.2	6.6	.....	0.0 (0)	38.8 (36.1)	51.2	8.2	−1.0	9.8	18
near ST. LEONARD, N.B.*																								
0.9	.....	0.09	0.0	0.0	0.0	.....	1.2	0.3	.....	0.0 (0)	38.2 (40.4)	2.4	0.8	.....	0.8	4.7	.....	5.3 (5.0)	36.6 (38.2)	42.9	6.7	−1.4	10.2	19
near ORTONVILLE, N.B.*																								
1.9	.....	0.03	Trace	0.0	0.07	.....	1.4	0.4	.....	0.0 (0)	89.3 (90.8)	4.2	1.0	0.0	0.8	6.0	.....	3.0 (1.8)	76.2 (76.4)	87.2	3.8	−0.1	8.2	20
near WASHBURN, MAINE, U.S.A.*																								
2.6	0.18	0.0	0.01	0.0	0.0	0.0	2.0	0.4	.....	0.0	47	7.3	2.4	0.2	0.5	4.4	.....	5	43	55.8	9.1	−1.2	9.9	21
1.0	0.06	0.06	0.0	0.3	0.0	0.07	1.3	0.8	Lithium 0.0	0.0	14	5.0	3.9	0.1	0.7	3.6	.....	6	17	27.9	13.5	−3.1	12.8	22

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (° F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105° C.	Suspended matter: Ignited at 550° C.	Residue on evaporation dried at 105° C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per day	Loss on ignition at 550° C.	Specific conductance $K \times 10^6$ at 25° C.	Calcium (Ca)
STATION NO. 26 – AROOSTOOK RIVER																		
			Gauge height in feet†															
1	July 7/54	5:41	20	.....	61	.....	3.4	7.2	75	2	.....	.....	76.0	0.103	.....	32.8	75.4	10.5
2	Aug. 7	10:129	.....	.....	63	.....	3.7	7.2 (7.2)	120 (140)	0	.....	.....	78.4	0.107	.....	36.4	77.8	12.9
3	Aug. 9	7:10	10	.....	65	.....	1.9	7.5	100	4	.....	.....	.....	.....	.....	.....	80.1	12.6
4	Sept. 13	4:51	71	.....	55	.....	4.0	7.0	65	12	.....	.....	.....	.....	.....	.....	55.1	9.1
5	Oct. 4	8:30	15	.....	53	.....	1.7	7.6	80	1	.....	.....	83.6	0.114	.....	27.8	96.9	15.4
6	Nov. 10	6:40	22	.....	44	10	1.9	7.6	55	12	.....	.....	.....	.....	.....	.....	117.7	16.8
7	Dec. 6	4:56	20	.....	32	10	2.6	7.5	40	0.2	.....	.....	.....	.....	.....	.....	140.6	19.2
8	Jan. 3/55	4:37	15	.....	32	8.5	3.5	7.3	40	0.3	.....	.....	81.2	0.110	.....	25.6	112.1	16.6
9	Feb. 6	51:53	15	.....	32	7.0	5.1	7.2	35	0	.....	.....	.....	.....	.....	.....	126.4	17.9
10	Mar. 5	6:40	15	.....	33	7.1	4.1	7.3	40	0.2	.....	.....	.....	.....	.....	.....	129.4	18.9
11	Apr. 4	9:51	12	.....	41	9.7	8.1	7.0	30	2	.....	.....	88.8	0.121	.....	37.6	119.5	17.0
12	May 3	7:15	20	.....	45	.....	1.7	7.4	35	10	.....	.....	.....	.....	.....	.....	54.9	8.8
13	June 3	8:19	20	.....	57	17	2.4	7.4	55	25	19	12	85.2	0.116	.....	40.4	92.0	14.1

* Sampled at No. 2 highway bridge.
† Water level reported by sample collector.

STATION NO. 27 – TOBIQUE RIVER

14	Aug. 7/54	11:135	1,950	2,160	66	.....	1.3	7.8 (8.2)	40 (55)	2	.....	.....	64.4	0.088	340	29.2	81.8	12.5

* Sampled at town tap.

STATION NO. 28 – TOBIQUE RIVER

15	Aug. 7/54	10:135	.....	.....	64	.....	3.6	7.3 (7.9)	50 (55)	0.6	.....	.....	64.4	0.088	.....	23.6	80.5	12.7

* Sampled at No. 2 highway bridge.

STATION NO. 29 – TOBIQUE RIVER

16	July 7/54	5:41	2,030†	2,090†	63	.....	2.9	7.3	75	2	.....	.....	77.0	0.105	422	30.4	83.5	11.8
17	Aug. 9	7:10	2,170	2,390	64	.....	1.1	7.9	30	6	.....	.....	.....	.....	.....	.....	88.0	13.8
18	Sept. 13	4:51	18,300	4,030	55	.....	3.8	7.0	65	12	.....	.....	.....	.....	.....	.....	49.7	8.0
19	Oct. 4	8:30	.....	4,400	53	.....	1.4	7.7	45	1	.....	.....	66.6	0.091	.....	16.0	83.6	13.7
20	Nov. 4	6:40	.....	4,700	45	8	1.1	7.7	50	3	.....	.....	.....	.....	.....	.....	71.9	10.6
21	Dec. 6	4:56	.....	2,640	32	4.7	2.9	7.4	40	4	.....	.....	.....	.....	.....	.....	87.1	12.8
22	Jan. 3/55	4:37	.....	1,410	32	6.1	2.6	7.5	30	4	5.4	2.4	72.0	0.098	.....	19.2	97.0	15.5
23	Feb. 6	5:21	.....	1,670	33	4.6	2.7	7.5	28	0.3	.....	.....	.....	.....	.....	.....	105.3	16.7
24	Mar. 4	7:91	.....	2,090	35	5.3	3.4	7.2	35	0.2	.....	.....	.....	.....	.....	.....	75.0	11.1
25	Apr. 4	9:51	.....	10,400	40	4.7	6.2	7.1	20	0.8	.....	.....	62.0	0.084	.....	21.2	87.5	13.9
26	May 3	7:15	.....	11,100	43	.....	2.0	7.3	40	10	.....	.....	.....	.....	.....	.....	60.2	9.2
27	June 8	9:19	.....	4,950	57	14	1.4	7.5	35	4	4.3	0.6	64.4	0.088	.....	27.6	60.3	9.4

* Sampled at head pond of power plant.
† Discharge records at Narrows, at power plant of New Brunswick Electric Power Commission.

STATION NO. 30 – PRESQU'ILE RIVER

28	July 9/54	12:54	Normal†	.....	65	13	2.5	7.9	25	1	.....	.....	208	0.282	.....	34.0	324.8	54.3
29	Aug. 9	9:133	High	.....	59.5	.....	8.5	7.4 (8.4)	35 (35)	4	0.3	0.0	202	0.275	.....	39.2	259.6	47.1
30	Sept. 14	7:50	High	.....	53	.....	2.9	7.8	55	3	.....	.....	.....	.....	.....	.....	217.6	40.1
31	Oct. 11	11:84	High	.....	50	9.6	1.3	8.2	40	4	13.0	7.6	164	0.223	.....	36.0	235.1	42.4

† Collector's estimate of water level or discharge.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near AROOSTOOK, N.B.*																								
2.4	.....	0.12	0.0	.....	.....	.....	2.7	0.5	.....	0.0	31.2	8.1	2.0	0.08	2.4	5.3	.....	10.3	35.9	49.5	13.8	−1.8	10.8	1
1.3	.....	0.07	0.0	0.04	0.0	.....	1.5	0.3	.....	0.0	36.1	6.8	2.3	0.0	1.6	5.1	.....	7.9	37.5	49.6	7.9	−2.3	11.8	2
										(0)	(35.3)							(8.1)	(37.1)					
2.0	.....	.....	.....	.....	.....	.....	2.7	1.8	.....	0.0	39.1	7.8	2.8	0.0	1.2	4.9	.....	7.7	39.8	55.1	12.3	−1.3	10.1	3
0.7	.....	.....	.....	.....	.....	.....	1.0	0.6	.....	0.0	23.9	3.9	2.1	.....	1.6	3.7	.....	6.0	25.6	34.5	7.6	−2.2	11.4	4
1.7	.....	0.09	0.0	0.0	0.0	.....	1.5	0.5	.....	0.0	42.4	7.4	3.1	.....	4.0	5.4	.....	10.6	45.4	59.9	6.6	−1.1	9.8	5
2.5	.....	.....	.....	.....	.....	.....	1.7	0.8	.....	0.0	45.3	10.0	3.5	.....	3.2	5.8	0.00	15.0	52.2	66.6	6.5	−1.1	9.8	6
2.5	.....	.....	.....	.....	.....	.....	1.7	0.6	.....	0.0	47.9	12.2	4.4	.....	6.0	5.5	.....	6.9	58.2	75.7	5.9	−1.0	9.5	7
2.4	.....	0.03	0.0	Trace	0.0	.....	1.5	0.4	.....	0.0	43.3	12.6	3.7	0.0	4.8	5.8	.....	17.4	52.9	69.1	5.7	−1.3	9.9	8
2.2	.....	.....	.....	.....	.....	.....	2.0	1.0	.....	0.0	49.5	9.1	3.9	.....	5.2	3.8	.....	13.1	53.7	69.5	7.3	−1.4	10.0	9
2.3	.....	.....	.....	.....	.....	.....	2.0	0.6	.....	0.0	48.9	12.1	4.0	.....	4.0	5.9	.....	16.5	56.6	72.9	7.0	−1.2	9.7	10
2.4	.....	0.03	0.0	0.01	0.0	.....	1.8	0.9	.....	0.0	51.2	10.3	3.6	0.0	0.8	5.0	.....	10.3	52.3	67.0	6.8	−1.5	10.0	11
0.6	.....	.....	.....	.....	.....	.....	0.9	0.4	0.15	0.0	24.5	1.1	0.4	.....	6.0	5.1	.....	4.3	24.4	35.4	7.3	−1.0	11.0	12
1.6	.....	0.06	0.0	0.05	0.02	.....	1.2	0.4	0.3	0.0	37.1	8.9	2.0	0.0	3.2	4.3	.....	11.4	41.8	54.1	5.8	−1.3	10.0	13
at PLASTER ROCK, N.B.* – Drainage area, 1,210 square miles.																								
1.4	.....	0.08	0.0	0.05	.....	.....	1.5	0.3	.....	0.0	46.9	3.6	0.6	0.10	0.6	5.1	.....	0.0	36.9	49.0	7.9	−0.9	9.6	14
										(0)	(47.9)							(0)	(37.2)					
at ARTHURETTE, N.B.*																								
1.7	.....	0.03	0.0	0.0	.....	.....	1.6	0.3	.....	0.0	44.2	7.1	0.5	0.10	0.6	5.3	.....	2.5	38.8	51.7	8.2	−1.3	10.3	15
										(0)	(42.9)							(2.4)	(37.6)					
near ANDOVER, N.B.* – Drainage area at Narrows, 1,670 square miles.																								
2.0	.....	0.12	0.0	.....	.....	.....	2.5	0.6	.....	0.0	34.1	8.1	2.3	0.08	2.4	5.4	.....	9.8	37.8	52.1	12.3	−1.6	10.5	16
1.8	.....	.....	.....	.....	.....	.....	2.4	0.6	.....	0.0	51.3	6.2	0.6	.....	0.1	4.8	.....	0.0	41.8	55.8	10.9	−0.7	9.3	17
0.9	.....	.....	.....	.....	.....	.....	1.1	0.6	.....	0.0	22.1	3.8	0.9	.....	2.0	4.9	.....	5.7	23.8	33.1	8.9	−2.2	11.4	18
1.3	.....	0.05	0.0	0.01	0.0	.....	1.5	0.7	.....	0.0	44.4	4.7	0.8	.....	0.6	5.9	.....	2.9	39.3	51.0	7.2	−1.0	9.7	19
1.1	.....	.....	.....	.....	.....	.....	1.1	0.3	.....	0.0	33.4	4.5	0.6	.....	1.2	5.5	0.00	3.6	31.8	41.4	7.1	−1.3	10.3	20
1.1	.....	.....	.....	.....	.....	.....	1.2	0.2	.....	0.0	43.6	3.1	0.7	.....	0.6	5.8	.....	0.7	36.5	47.0	6.6	−1.3	10.0	21
1.4	.....	0.05	0.0	0.0	0.0	.....	1.1	0.4	.....	0.0	49.9	6.5	0.4	0.04	1.2	5.9	.....	3.5	44.4	57.1	5.0	−1.0	9.5	22
1.6	.....	.....	.....	.....	.....	.....	1.3	0.4	.....	0.0	52.4	7.0	0.8	.....	.....	3.9	.....	5.3	48.3	58.3	5.5	−1.1	9.7	23
1.2	.....	.....	.....	.....	.....	.....	1.2	0.3	0.1	0.0	32.7	6.0	1.0	.....	1.2	4.4	.....	5.8	32.6	42.5	7.3	−1.7	10.6	24
1.1	.....	0.11	Trace	Trace	0.0	.....	1.6	0.7	.....	0.0	47.5	2.9	1.1	0.05	0.8	6.7	.....	0.1	39.1	52.4	7.9	−1.5	10.1	25
0.8	.....	.....	.....	.....	.....	.....	1.0	0.4	0.2	0.0	22.6	2.0	1.2	.....	8.0	4.1	.....	7.7	26.2	37.8	7.5	−1.9	11.1	26
1.0	.....	0.04	0.0	0.04	Trace	.....	0.9	0.3	0.2	0.0	29.6	4.6	0.1	0.0	0.8	4.6	.....	3.3	27.6	36.4	6.5	−1.4	10.3	27
at CENTREVILLE, N.B.																								
4.5	.....	0.11	0.0	.....	.....	.....	4.4	2.9	.....	0.0	147	22.2	13.4	0.05	6.0	5.6	.....	33.5	154	186	5.7	+0.3	7.3	28
3.0	.....	0.03	0.0	0.03	.....	.....	2.0	0.6	.....	0.0	136	16.8	5.4	0.0	3.2	5.5	.....	20.6	130	151	3.2	−0.3	8.0	29
										(0)	(136)							(19.8)	(132)					
2.0	.....	.....	.....	.....	.....	.....	1.8	0.8	.....	0.0	108	13.1	5.5	.....	1.6	5.6	.....	20.0	108	123	3.5	−0.2	8.2	30
2.5	.....	0.01	0.0	0.0	Trace	.....	1.8	1.0	.....	0.0	116	14.5	6.4	0.0	4.0	5.3	.....	20.9	116	135	3.2	+0.4	7.4	31

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance K × 10⁶ at 25°C.	Calcium (Ca)
																		STATION NO. 30 – PRESQU'ILE RIVER
1	Nov. 9/54	8:55	High †	.....	37	5.9	1.7	8.1	25	2	.....	.....	.....	.....	.....	.....	264.7	46.2
2	Dec. 9	6:46	High	.....	32	4.4	2.0	8.0	10	9	.....	.....	.....	.....	.....	.....	289.2	50.8
3	Jan. 9/55	15:37	Normal	.....	32	2.5	1.8	8.1	10	0	.....	.....	222	0.301	.....	40.8	323.1	55.8
4	Feb. 9	12:43	Normal	.....	32	2.7	2.9	7.9	10	0	.....	.....	.....	.....	.....	.....	358.5	60.4
5	Mar. 10	15:46	Normal	.....	32	.....	4.7	7.7	10	0	.....	.....	.....	.....	.....	.....	278.2	46.8
6	Apr. 9	11:46	High	.....	38	3.9	3.0	7.8	15	6	13.3	10.5	177	0.240	.....	36.8	262.2	44.7
7	May 16	9:16	Spring high	.....	57	.....	1.5	8.1	15	1	.....	.....	.....	.....	.....	.....	246.8	42.8
8	June 7	8:26	Normal	.....	66	12	1.0	8.3	15	0.8	.....	.....	170	0.230	.....	23.6	265.8	47.2
																		STATION NO. 31 – NASHWAAK RIVER
9	Aug. 16/54	11:172	.....	.....	63	.....	1.3	7.4 (7.0)	70 (70)	2	.....	.....	43.6	0.059	.....	20.8	45.1	5.1
																		STATION NO. 32 – NASHWAAK RIVER
			Gauge height in feet †															
10	July 12/54	4:38	2.0	.....	64	7	2.8	7.1	35	0.8	.....	.....	37.4	0.051	.....	14.2	42.8	5.5
11	Aug. 12	5:20	4.5	.....	58	.....	1.8	7.2	50	1	.....	.....	.....	.....	.....	.....	36.5	4.5
12	Sept. 11	4:41	1.5	.....	59	12	1.8	7.4	35	0	.....	.....	.....	.....	.....	.....	47.7	6.4
13	Oct. 18	4:64	4.5	.....	53	13	1.4	7.2	85	0	3.1	1.4	42.4	0.058	.....	24.0	30.8	3.9
14	Nov. 3	12:41	3.4	.....	45	6.0	1.4	7.2	35	2	.....	.....	.....	.....	.....	.....	33.8	3.8
15	Dec. 10	5:45	4.0	.....	33	6.7	1.9	7.0	40	10	.....	.....	.....	.....	.....	.....	36.7	4.0
16	Jan. /55	No sample taken																
17	Feb.	No sample taken																
18	Mar.	No sample taken																
19	Apr. 13	7:49	3.0	.....	35	5.0	1.2	7.2	30	5	9.0	1.9	42.0	0.057	.....	18.8	33.1	3.9
20	May 17	8:15	4.5	.....	46	.....	1.3	7.1	35	2	.....	.....	.....	.....	.....	.....	27.6	3.4
21	June 13	14:22	2.0	.....	57	14	1.4	7.2	30	0.2	.....	.....	42.0	0.057	.....	18.8	35.1	4.5
																		STATION NO. 33 – OROMOCTO RIVER
22	Aug. 12/54	12:152	High	.....	66	.....	1.4	7.2 (6.9)	100 (140)	3	6.1	4.0	37.4	0.051	.....	23.0	29.2	3.0
23	June 3/57	16:36	.....	.....	.....	12	3.9	6.8	65	20	16.0	9.5	46.4	0.063	.....	21.2	45.9	4.8
24	Sept. 5/57*	.....	.....	.....	.....	.....	.....	7.1	2	6	.....	.....	.....	.....	.....	.....	.....	14.4
25	Oct. 7*	.....	.....	.....	.....	.....	.....	7.9	.....	3	.....	.....	.....	.....	.....	.....	.....	13.6
26	Nov. 5*	.....	.....	.....	.....	.....	.....	6.6	.....	5	.....	.....	.....	.....	.....	.....	.....	5.6
																		STATION NO. 34 – SALMON RIVER
27	Aug. 14/54	13:163	Low †	.....	60	.....	4.5	6.6 (7.4)	180 (200)	2	.....	.....	50.0	0.068	.....	26.8	29.0	2.8
28	May 12/55	5:28	High	.....	40.5	11	3.0	6.6	80	0.2	.....	.....	36.8	0.050	.....	20.0	23.1	2.0
29	June 13	23:28	.....	.....	60	.....	1.9	7.0	100	0.8	.....	.....	.....	.....	.....	.....	32.4	3.5
30	July 13	12:14	.....	.....	58	.....	2.1	7.3	45	2	.....	.....	.....	.....	.....	.....	66.0	7.4
31	Aug.	No sample taken																
32	Sept. 13	6:12	Low	.....	55	16	1.4	7.6	25	2	.....	.....	68.4	0.093	.....	15.2	89.5	11.3
33	Oct. 19	8:13	Summer level	.....	40	.....	1.7	7.5	20	4	.....	.....	.....	.....	.....	.....	91.1	10.5

† Collector's estimate of water level or discharge.

† Collector's report of river level.

* Analyses supplied by Betz Laboratories Limited, Montreal, Que.

† Collector's estimate of river level or discharge.

* Sampled at highway bridge.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at CENTREVILLE, N.B. – (Concluded)																								
3.7	.....	.....	.....	.....	.....	.....	2.0	0.8	.....	0.0	124	19.0	6.9	....	6.0	6.3	0.00	29.1	131	152	3.2	+0.3	7.5	1
3.8	.....	.....	.....	.....	.....	.....	2.0	0.7	.....	0.0	132	21.2	8.7	....	8.0	8.4	.....	34.3	142	169	2.9	+0.4	7.2	2
3.7	.....	Trace	0.0	0.03	0.0	.....	2.2	0.9	.....	0.0	141	24.6	8.9	0.0	14	6.5	.....	38.7	154	186	3.0	+0.4	7.3	3
4.4	.....	.....	.....	.....	.....	.....	2.5	1.3	.....	0.0	158	26.5	10.0	....	11	3.3	.....	39.4	169	197	3.1	+0.4	7.1	4
3.7	.....	.....	.....	.....	.....	.....	2.1	1.2	.....	0.0	124	20.7	6.7	....	6.0	5.5	.....	30.0	132	154	3.3	−0.2	8.1	5
3.1	.....	0.01	0.0	0.05	0.0	.....	1.9	0.9	.....	0.0	117	18.6	6.9	0.0	12	5.1	.....	28.3	124	151	3.2	0.0	7.8	6
3.2	.....	.....	.....	.....	.....	.....	1.7	0.8	0.0	0.0	116	16.9	6.0	....	8.0	5.5	.....	24.5	120	148	3.0	+0.3	8.4	7
3.1	.....	Trace	Trace	0.09	0.0	.....	1.6	1.3	0.1	0.0	130	17.9	5.1	0.0	6.0	5.0	.....	23.7	131	152	2.6	+0.6	7.1	8
near TAYMOUTH, N.B.																								
0.7	.....	0.07	0.0	0.05	Trace	.....	1.4	0.3	.....	0.0 (0)	19.6 (17.7)	2.5	0.8	0.15	0.4	5.5	.....	0.0 (2.5)	15.6 (17.0)	26.7	15.7	−2.1	11.6	9
near MARYSVILLE, N.B.																								
0.7	.....	0.1	0.0	.....	.....	.....	1.9	0.3	.....	0.0	21.2	1.8	1.1	....	0.3	6.0	.....	0.0	16.6	28.1	19.5	−2.3	11.7	10
0.7	.....	.....	.....	.....	.....	.....	1.9	0.4	.....	0.0	17.9	1.9	0.8	....	0.8	5.1	.....	0.0	14.1	24.9	22.0	−2.3	11.8	11
0.6	.....	.....	.....	.....	.....	.....	1.9	0.4	.....	0.0	24.1	1.5	0.9	....	0.4	6.1	.....	0.0	18.4	30.1	17.9	−1.9	11.2	12
0.6	.....	0.08	0.0	Trace	0.0	.....	1.0	0.3	.....	0.0	13.0	3.1	1.0	0.0	0.6	5.2	.....	2.0	12.2	22.2	14.6	−2.5	12.2	13
0.8	.....	.....	.....	.....	.....	.....	1.2	0.3	.....	0.0	14.1	3.1	0.9	....	0.4	5.8	.....	1.2	12.8	23.2	16.5	−2.5	12.2	14
0.6	.....	.....	.....	.....	.....	.....	1.0	0.2	.....	0.0	13.0	3.4	1.0	....	0.4	5.5	.....	1.8	12.5	22.5	14.6	−2.6	12.2	15
																								16
																								17
																								18
0.6	.....	0.01	0.0	0.05	0.0	.....	1.1	0.4	.....	0.0	11.6	3.4	0.9	0.0	1.2	4.4	.....	2.7	12.2	21.7	15.5	−2.6	12.4	19
0.4	.....	.....	.....	.....	.....	.....	1.0	0.3	0.2	0.0	10.6	2.4	0.7	....	0.8	4.4	.....	1.4	10.1	18.6	17.1	−2.7	12.5	20
0.4	.....	0.03	.....	0.01	0.0	.....	1.1	0.3	0.1	0.0	13.9	4.3	0.6	0.0	0.4	4.9	.....	1.5	12.9	23.4	15.2	−2.5	12.2	21
at OROMOCTO or near Camp Gagetown, N.B.																								
0.7	.....	0.02	0.0	0.0	0.0	.....	1.8	0.2	.....	0.0 (0)	15.2 (10.1)	0.5	0.9	....	0.8	3.6	.....	0.0	10.4 (10.6)	19.2	26.3	−2.5	12.2	22
1.2	0.34	0.19	0.0	0.01	0.0	0.0	1.6	0.4	0.5	0.0	16.9	3.4	2.0	0.0	0.8	2.3	.....	3.0	16.9	25.3	16.0	−2.6	12.0	23
2.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	51.2	8	4.0	.....	.....	2.5	.....	6	48	.....	.....	.....	.....	24
3.4	0.02	.....	.....	.....	.....	.....	.....	.....	.....	0	48.8	12	3.0	.....	.....	1.4	.....	8	48	.....	.....	.....	.....	25
1.0	0.01	.....	.....	.....	.....	.....	.....	.....	.....	0	24.4	.....	4.0	.....	.....	0.9	.....	0	18	.....	.....	.....	.....	26
at CHIPMAN, N.B.*																								
0.6	.....	0.2	0.0	0.0	0.0	.....	1.5	0.2	.....	0.0 (0)	10.5 (10.1)	2.0	1.4	0.0	0.6	5.0	.....	1.0	9.6 (10.6)	19.5	24.4	−3.4	13.4	27
0.6	.....	0.09	0.0	0.07	0.0	.....	1.4	0.3	0.3	0.0	7.1	2.8	1.7	0.0	0.2	4.1	.....	1.7	7.5	16.8	26.6	−3.7	14.0	28
0.5	.....	.....	.....	.....	.....	.....	1.8	0.3	0.3	0.0	11.7	3.5	1.0	.....	0.4	4.5	.....	1.2	10.8	21.3	25.9	−2.7	12.4	29
0.7	.....	.....	.....	.....	.....	.....	3.9	0.5	0.1	0.0	26.2	6.1	2.0	.....	0.2	5.7	.....	0.0	21.4	39.4	27.8	−1.8	10.9	30
																								31
0.3	.....	0.06	Trace	0.0	0.0	0.0	5.5	0.6	0.0	0.0	36.6	6.6	3.4	0.0	0.2	4.9	Li=0**	0.0	29.4	50.6	28.3	−1.2	10.0	32
1.2	.....	.....	.....	.....	.....	.....	5.1	0.5	0.0	0.0	35.1	10.8	2.7	.....	0.6	6.4	Li=0**	2.3	31.1	55.1	24.7	−1.4	10.3	33

** Lithium.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 34 – SALMON RIVER
1	Nov. 19/55	5:26	Low †	.....	45	8.7	2.1	7.2	80	0.2	.....	.....	70.8	0.096	.....	24.8	68.0	7.7
2	Dec.	No sample taken																
3	Jan. 23/56	17:24	.....	.....	.....	.....	7.8	5.9	100	3	.....	.....	.....	.....	.....	.....	28.7	2.5
4	Feb.	No sample taken																
5	Mar.	No sample taken																
6	Apr. 19	28:47	High	.....	40	13	5.2	5.9	70	2	.....	.....	34.4	0.047	.....	21.6	17.3	1.6
																		STATION NO. 35 – GRAND LAKE
7	May 1/50*	19	.....	.....	.....	.....	5.0	6.2	60	8	.....	.....	.....	.....	.....	.....	.....	3.2
8	May 20**	.....	.....	.....	.....	.....	8.6	6.1	.....	.....	.....	.....	70.1	0.095	.....	.....	.....	8.9
																		STATION NO. 36 – CANAAN RIVER
9	July 14/54	12:49	High†	.....	70	26	3.5	6.9	110	2	.....	.....	59.6	0.081	.....	28.2	40.6	4.4
10	Aug. 14	13:48	.....	.....	66.5	.....	2.2	2.0 (7.7)	165 (200)	2	.....	.....	.....	.....	.....	.....	38.3	3.9
11	Aug. 16	8:16	High	.....	.....	.....	1.7	7.1	200	4	.....	.....	.....	.....	.....	.....	37.4	4.7
12	Sept. 18	13:93	High	.....	61	.....	2.2	7.2	90	2	.....	.....	.....	.....	.....	.....	67.9	8.2
13	Oct. 18	8:52	High	.....	53	19	3.9	6.7	110	4	5.3	3.2	60.8	0.083	.....	29.6	43.1	4.8
14	Nov. 17	7:47	High	.....	35	13	4.1	6.6	75	2	.....	.....	.....	.....	.....	.....	41.8	4.1
15	Dec. 1954 to April 1955 No samples taken																	
16	May 27/55	5:21	High	.....	63	13	2.4	6.9	100	2	.....	.....	52.4	0.071	.....	34.8	39.6	4.7
17	June 21	17:20	Low	.....	71	.....	4.9	6.6	130	2	.....	.....	.....	.....	.....	.....	39.3	4.6
18	July	No sample taken																
19	Aug. 8	4:29	Low	.....	75	14	1.9	7.4	25	0.2	.....	.....	65.6	0.089	.....	7.6	106.6	12.2
																		STATION NO. 37 – NEREPIS RIVER
20	Aug. 13/54*	12:169	.....	.....	62	.....	0.5	7.8 (7.6)	75 (70)	5	10.9	3.9	50.0	0.068	.....	30.4	43.9	5.6
																		STATION NO. 38 – WARD'S CREEK
21	Aug. 14/54	13:163	.....	.....	66	.....	1.6	7.8 (7.3)	10 (10)	0.6	.....	.....	82.4	0.112	.....	10.4	126.0	13.9
																		STATION NO. 39 – KENNEBECASIS RIVER
			Gauge height in feet †															
22	July 14/54	7:49	5	.....	62	13	2.4	7.4	10	2	.....	.....	105	0.144	.....	0.6	168.8	15.3
23	Aug. 14	10:18	4	.....	72	.....	1.6	7.7	25	0.7	.....	.....	.....	.....	.....	.....	191.6	17.3
24	Sept. 14	3:29	3	.....	59	6.2	0.7	8.1	20	0.8	.....	.....	.....	.....	.....	.....	212.3	19.7
25	Oct. 14	8:31	5	.....	56	7.7	1.3	7.7	40	1	.....	.....	113	0.154	.....	16.0	172.5	17.3
26	Nov. 15	9:49	5	.....	52	3.4	1.6	7.5	15	3	.....	.....	.....	.....	.....	.....	134.2	12.2
27	Dec. 12	7:41	5	.....	38	3.5	2.6	7.1	20	3	.....	.....	.....	.....	.....	.....	72.4	7.8
28	Jan. 14/55	10:32	5	.....	39	3.0	1.4	7.5	20	0	.....	.....	90.4	0.123	.....	25.2	132.8	13.0
29	Feb. 14	7:38	8	.....	33	4.6	2.6	6.8	30	7	.....	.....	.....	.....	.....	.....	48.3	4.6

† Collector's estimate of river level or discharge.
* Sampled at highway bridge.

* Analysis supplied by The Permutit Co. of Canada Limited, Montreal, Que.
** Analysis supplied by Alchem Limited, Burlington, Ontario.

* Sampled at highway No. 9 bridge.
† Collector's estimate of river level or discharge.

* Sampled at period of slack tide.

† Collector's report of water level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at CHIPMAN, N.B.* – (Concluded)																								
1.3	.....	0.16	0.0	0.0	0.0	0.01	4.0	0.5	0.01	0.0	20.7	7.3	3.2	.....	2.4	7.8	0.00	2.6	19.6	44.6	29.8	−2.0	11.2	1
																								2
0.7	.....	.....	.....	.....	.....	.....	1.5	0.4	0.2	0.0	4.0	6.0	1.9	.....	0.4	4.5	.....	5.8	9.1	19.9	25.3	−4.6	15.1	3
																								4
																								5
0.4	.....	0.06	0.0	0.06	Trace	.....	0.9	0.3	.....	0.0	2.4	2.6	1.1	0.0	1.6	3.2	.....	3.6	5.6	13.1	23.2	−5.0	15.9	6
near DOUGLAS HARBOUR, N.B.																								
0.9	0.3	.....	.....	.....	.....	.....	1.8 as Na		.....	0	4.9	8.6	1.4	.....	.....	3.2	.....	7.8	11.8	23.8	25.1	−4.1	14.2	7
0.0	.....	.....	.....	0.01	.....	.....	.....		.....	0	2.1	3.0	0.7	.....	.....	3.4	.....	20.1	22.2	.....	.....	−4.1	14.3	8
at COLES ISLAND, N.B.*																								
1.1	.....	0.4	0.0	.....	.....	.....	2.6	0.4	.....	0.0	15.8	5.4	2.2	.....	0.8	4.3	.....	2.3	15.3	29.4	26.3	−2.7	12.1	9
0.8	.....	.....	.....	.....	.....	.....	2.3	0.6	.....	0.0	13.3	3.3	2.5	.....	0.6	4.0	.....	2.1	13.0	23.6	26.6	−2.7	12.4	10
										(0)	(15.1)								(13.8)					
0.4	.....	.....	.....	.....	.....	.....	2.2	0.6	.....	0.0	13.5	3.0	1.9	.....	0.8	4.4	.....	2.3	13.4	24.7	25.1	−2.5	12.1	11
0.7	.....	.....	.....	.....	.....	.....	4.0	0.4	.....	0.0	22.4	8.7	3.4	.....	0.6	5.1	.....	4.9	23.3	42.2	26.7	−2.0	11.2	12
0.6	.....	0.52	0.0	0.0	0.0	.....	2.5	0.6	.....	0.0	12.2	5.6	3.1	.....	0.8	5.1	.....	4.4	14.4	29.5	26.4	−3.0	12.7	13
0.9	.....	.....	.....	.....	.....	.....	2.3	0.4	.....	0.0	10.1	6.3	2.5	.....	0.8	4.7	0.00	5.6	13.9	27.0	25.7	−3.2	13.0	14
																								15
0.4	.....	0.21	0.0	0.0	0.0	.....	1.9	0.6	0.2	0.0	11.1	4.6	2.0	0.0	0.6	2.7	.....	4.3	13.4	23.2	22.2	−2.8	12.5	16
0.3	.....	.....	.....	.....	.....	.....	2.1	0.4	0.4	0.0	12.9	4.4	1.7	.....	0.6	2.5	.....	2.1	12.7	23.0	25.7	−3.0	12.6	17
																								18
0.8	.....	0.04	0.0	0.0	0.0	.....	6.0	0.6	0.1	0.0	30.8	12.5	5.0	0.0	0.8	1.9	Li=0**	8.4	33.7	55.0	27.4	−1.4	10.2	19

** Lithium = Li.

near NEREPIS RIVER, N.B.

0.9	.....	0.07	0.0	0.03	0.0	.....	1.7	0.3	.....	0.0	21.7	2.8	1.6	0.0	0.8	5.5	.....	0.0	17.7	30.0	16.8	−1.5	10.8	20
										(0)	(22.7)							(0)	(18.0)					

at SUSSEX, N.B.

2.4	.....	Trace	Trace	0.0	0.0	.....	6.8	0.8	0.0	0.0	59.2	7.0	4.4	0.0	1.2	9.3	.....	0.0	45.6	75.0	24.5	−0.8	9.4	21
										(0)	(60.6)							(0)	(44.6)					

at NORTON, N.B.

2.9	.....	0.12	0.0	.....	.....	.....	13.7	1.4	.....	0.0	38.3	17.6	18.5	0.15	0.6	6.9	.....	13.8	45.2	96.1	38.8	−1.3	10.0	22
2.3	.....	.....	.....	.....	.....	.....	16.2	1.4	.....	0.0	47.4	19.3	20.4	.....	0.6	5.3	.....	13.8	52.7	106	39.3	−0.9	10.5	23
2.1	.....	.....	.....	.....	.....	.....	17.6	2.2	.....	0.0	51.1	23.8	23.6	.....	Trace	6.1	.....	15.9	57.8	120	38.7	−0.5	9.1	24
1.8	.....	0.19	0.0	0.0	.....	.....	12.7	1.4	.....	0.0	41.2	17.8	16.6	0.3	0.4	6.4	.....	16.8	50.6	95.2	34.5	−1.0	9.7	25
1.2	.....	.....	.....	.....	.....	.....	8.9	0.9	.....	0.0	30.0	14.1	12.0	.....	0.8	6.5	.....	10.7	35.4	71.4	34.6	−1.4	10.3	26
1.0	.....	.....	.....	.....	.....	.....	3.6	0.6	.....	0.0	20.0	8.8	5.5	.....	0.4	5.0	.....	7.2	23.6	42.6	24.3	−2.2	11.5	27
1.2	.....	0.06	0.0	0.24	0.0	.....	7.6	0.8	.....	0.0	27.9	15.0	11.8	0.24	0.8	7.3	.....	14.5	37.4	71.7	29.3	−1.5	10.5	28
0.8	.....	.....	.....	.....	.....	.....	2.3	0.7	.....	0.0	9.9	6.5	3.4	.....	1.4	2.8	.....	6.7	14.8	27.4	24.2	−3.0	12.8	29

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105°C.	Suspended matter Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids) Parts per million	Tons per acre-foot	Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 39 – KENNEBECASIS RIVER
			Gauge height in feet†															
1	Mar. 14/55	4:42	5.5	.....	38	.....	2.0	7.2	25	3	.....	.....	.....	.....	.....	.....	80.2	8.1
2	Apr. 17	8:45	8	.....	42	5.3	1.6	7.1	35	20	18.0	11.8	49.6	0.068	.....	24.0	48.3	5.2
3	May 16	9:16	4	.....	54	.....	1.4	7.5	15	4	.....	.....	.....	.....	.....	.....	119.2	11.5
4	June 15	13:27	4	.....	58	12	1.7	7.5	20	0.3	.....	.....	90.8	0.124	.....	17.6	135.7	14.0
																		STATION NO. 40 – KENNEBECASIS RIVER
5	Aug. 14/54*	13:163	.....	.....	65	.....	2.1	7.5 (7.2)	35 (40)	2	.....	.....	103	0.140	.....	12.8	181.6	15.4
																		STATION NO. 41 – SPRUCE LAKE
6	Nov. 16/50*	.....	.....	.....	.....	.....	3.9	3	6.5	10	5	.....	.....	.....	.....	.....	.....	.....	2.4
7	Jan. 14/54**	5:5	.....	.....	.....	.....	1.8	6.7	.....	3	.....	.....	32.0	0.043	.....	.....	.....	.....	3.2
																		STATION NO. 42 – LAUZIER CREEK
8	July 8/55	17:159	.....	.....	63	.....	1.2	8.3 (8.1)	10	0	.....	.....	160	0.218	.....	65.2	279.7	45.0
																		STATION NO. 42A – MATAPEDIA RIVER
9	July 8/55	19:159	.....	.....	74	.....	.....	8.3 (8.3)	20	0.9	.....	.....	111	0.151	.....	49.2	188.1	30.5
																		STATION NO. 43 – MATAPEDIA RIVER
10	July 26/55	8:20	Very low†	.....	71	12	0.9	8.3	15	2	.....	.....	59.4	0.081	.....	8.0	200.5	31.5
11	Aug. 22	4:24	Low	.....	67	.....	1.0	8.2	15	0	.....	.....	.....	.....	.....	.....	208.3	34.2
12	Sept. 20	13:49	Normal	.....	54	.....	2.5	7.9	15	0.3	.....	.....	.....	.....	.....	.....	204.3	36.6
13	Oct. 19	8:167	Low	.....	50	11	1.2	8.2	20	0.8	.....	.....	122	0.160	.....	27.2	195.4	31.7
14	Nov. 19	11:26	Normal	.....	37	.....	1.2	8.2	15	5	.....	.....	.....	.....	.....	.....	201.5	33.8
15	Dec. 19	15:65	Low	.....	34	.....	1.8	8.1	15	0	.....	.....	.....	.....	.....	.....	217.4	35.3
16	Jan. 20/56	20:104	.....	.....	35	3.2	1.3	8.2	15	0.3	.....	.....	132	0.179	.....	19.2	219.9	36.1
17	Feb. 28	18:82	Normal	.....	33	.....	1.1	8.3	15	0	.....	.....	.....	.....	.....	.....	211.8	35.0
18	Mar. 19	35:58	Normal	.....	34	.....	1.1	8.3	10	0.3	.....	.....	.....	.....	.....	.....	224.1	36.8
19	Apr. 19	28:47	Normal	.....	36	7.1	1.7	8.1	10	2	.....	.....	138	0.188	.....	53.2	225.1	37.2
20	May 19	6:15	Medium high	.....	56	.....	2.4	7.8	20	4	.....	.....	.....	.....	.....	.....	169.5	27.3
21	May 20	10:16	Very high	.....	39	.....	1.2	8.1	20	3	.....	.....	.....	.....	.....	.....	162.5	26.8
																		STATION NO. 44 – MATAPEDIA RIVER
22	July 19/54	7:50	Medium†	.....	60	.....	1.6	8.0	10	1	.....	.....	94.2	0.128	.....	18.4	146.8	23.6
23	Aug. 20	4:12	High	.....	62	.....	1.6	8.1	25	2	.....	.....	.....	.....	.....	.....	157.6	25.0
24	Sept. 15	23:245	.....	.....	47	6.9	1.3	8.0 (7.9)	15	4	10.6	7.9	98.4	0.134	.....	14.8	136.3	20.7
25	Sept. 22	5:42	Season's high	.....	54	4.8	2.1	7.8	25	0	.....	.....	.....	.....	.....	.....	155.4	23.3

† Collector's report of water level.

* Sampled at period of high tide.

* Analyses supplied by The Permutit Co. of Canada Limited, Montreal, Que.
** Analyses supplied by Alchem Limited, Burlington, Ontario.

† Collector's estimate of river level.

† Collector's estimate of river level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at NORTON, N.B. – (Concluded)																								
0.9	.....	.....	.....	.....	.....	.....	4.4	0.6	.....	0.0	19.4	8.6	5.9	.....	0.8	5.5	.....	8.0	23.9	44.4	27.9	–2.1	11.4	1
0.6	.....	0.01	0.0	0.04	0.0	.....	2.6	0.7	.....	0.0	11.9	5.9	3.2	0.0	0.8	5.3	.....	5.6	15.4	30.3	25.4	–2.5	12.1	2
1.3	.....	.....	.....	.....	.....	.....	7.3	0.8	0.0	0.0	28.4	12.0	10.8	.....	0.4	9.4	.....	10.7	34.0	67.5	31.2	–1.4	10.3	3
1.1	.....	0.06	Trace	0.01	0.0	.....	9.1	0.9	0.0	0.0	35.1	13.7	12.0	0.0	0.4	5.2	.....	10.7	39.5	73.8	32.7	–1.2	9.9	4
near HAMPTON, N.B.																								
1.5	.....	0.07	Trace	0.0	0.0	.....	11.9	1.1	.....	0.0 (0)	40.6 (43.0)	16.9	15.6	0.0	0.6	6.6	.....	11.3 (10.0)	44.6 (45.2)	89.7	35.9	–1.2	9.9	5
near LANCASTER (FAIRVILLE), N.B.																								
0.2	0.2	.....	.....	.....	.....	.....	3.7 as Na		.....	0	6.1	1.9	6.4	.....	.....	1.3	.....	2.6	7.6	18.2	55.5	–3.8	14.1	6
0.0	0.2	.....	.....	0.0	.....	.....	.....	.....	0.0	0	4.9	6.8	3.9	.....	.....	1.9	.....	4.0	8.0	.....	.....	–3.5	13.7	7
near VAL-BRILLANT, QUE.																								
7.6	.....	0.01	0.0	0.07	0.02	.....	1.7	0.5	0.15	0.0	170	3.7	1.3	0.0	1.6	6.6	.....	3.8	144	152	2.5	+0.7	6.9	8
at LAC-AU-SAUMON, QUE.																								
4.1	.....	0.18	0.0	0.0	0.04	.....	2.1	0.6	0.0	0.0	108	4.7	1.5	0.0	1.6	6.7	.....	4.2 (0)	93.0 (84.3)	105	4.6	+0.4	7.5	9
at CAUSAPSCAL, QUE.																								
5.0	.....	0.0	0.0	0.03	0.0	.....	1.4	0.5	0.15	0.0	118	6.0	1.5	0.0	0.0	8.1	.....	2.7	99.2	112	3.0	+0.5	7.3	10
4.1	.....	.....	.....	.....	0.0	.....	1.8	0.5	0.0	0.0	121	4.8	1.8	0.0	0.8	3.4	0.00	2.8	102	107	3.7	+0.3	7.6	11
3.1	.....	.....	.....	.....	.....	.....	1.4	0.5	0.0	0.0	121	5.4	0.6	.....	2.4	5.2	0.00	5.1	104	115	2.8	0.0	7.9	12
4.6	.....	0.02	0.0	0.01	.....	.....	1.9	0.6	0.0	0.0	116	5.9	1.5	0.0	0.8	5.9	.....	3.0	98.0	110	4.0	+0.3	7.6	13
5.0	.....	.....	.....	.....	.....	.....	1.7	0.5	0.0	0.0	121	6.5	1.2	....	1.2	3.5	.....	5.7	105	113	3.4	+0.3	7.6	14
6.0	.....	.....	.....	.....	.....	.....	1.8	0.5	0.0	0.0	132	6.3	1.5	....	2.4	4.7	.....	4.7	113	123	3.3	+0.2	7.7	15
5.5	.....	Trace	0.0	0.0	0.0	0.0	1.8	0.5	0.0	0.0	127	7.4	1.3	0.0	3.2	4.6	.....	8.5	113	123	3.3	+0.3	7.6	16
4.9	.....	.....	.....	.....	.....	.....	1.7	0.5	0.0	0.0	122	3.9	1.8	.....	6.0	4.8	0.00	7.5	108	119	3.3	+0.4	7.5	17
5.3	.....	.....	.....	.....	.....	.....	1.9	0.6	.....	0.0	128	7.7	1.8	.....	6.0	4.8	.....	8.4	114	128	3.5	+0.4	7.5	18
5.7	.....	Trace	0.0	0.05	0.0	0.0	1.7	0.6	0.0	0.0	130	7.1	1.9	0.0	2.4	4.5	.....	9.9	116	125	3.1	+0.2	7.7	19
4.1	.....	.....	.....	.....	0.0	0.0	1.5	0.5	0.1	0.0	94.7	4.8	1.5	.....	1.6	3.0	.....	7.2	85.0	91.4	3.7	–0.3	8.4	20
3.6	.....	.....	.....	.....	.....	.....	1.3	0.4	0.0	0.0	91.5	5.6	1.3	.....	1.2	3.5	.....	6.6	81.7	88.8	3.3	0.0	8.1	21
near MATAPEDIA, QUE.																								
3.8	0.08	.....	0.0	.....	.....	.....	2.0	0.7	.....	0.0	87.3	5.0	1.0	0.05	1.2	6.3	.....	2.9	74.5	86.7	5.5	–0.1	8.2	22
3.4	.....	.....	.....	.....	.....	.....	13.6	0.9	.....	0.0	124	5.0	0.8	.....	0.8	5.5	.....	0.0	76.5	116	2.8	+0.1	7.9	23
3.1	.....	0.01	0.0	0.03	0.0	.....	2.4	0.5	.....	0.0 (0)	76.3 (75.9)	1.4	2.2	0.05	2.4	7.8	.....	1.8 (1.5)	64.4 (63.6)	72.2	7.4	–0.3	8.6	24
3.3	.....	.....	.....	.....	.....	.....	1.6	0.5	.....	0.0	84.2	4.4	0.6	.....	0.4	5.3	.....	2.6	71.7	80.9	4.6	–0.4	8.6	25

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (° F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105° C.	Suspended matter Ignited at 550° C.	Residue on evaporation dried at 105° C. (Dissolved solids) P.P.M.	Residue on evaporation dried at 105° C. (Dissolved solids) Tons per acre-foot	Residue on evaporation dried at 105° C. (Dissolved solids) Tons per day	Loss on ignition at 550° C.	Specific conductance $K \times 10^6$ at 25° C.	Calcium (Ca)
STATION NO. 44 – MATAPEDIA RIVER																		
1	Oct. 25/54	4:45	High	.....	44	5.3	1.6	8.0	10	1	.....	.....	106	0.145	.....	12.4	153.8	24.5
2	Nov. 24	6:58	High	.....	40	5.3	3.4	7.6	20	4	.....	.....	.....	.....	.....	.....	138.5	22.7
3	Dec. 16	5:39	High	.....	37	3.2	1.9	7.9	5	2	.....	.....	.....	.....	.....	.....	156.9	25.0
4	Jan. 15/55	9:31	Seasnn high	.....	39	2.6	1.4	8.1	10	0	.....	.....	108	0.147	.....	17.6	171.2	27.8
5	Feb. 22	7:87	High	.....	34	2.7	1.7	8.0	10	0	.....	.....	.....	.....	.....	.....	178.4	27.7
6	Mar. 26	6:41	High	.....	38	.....	2.2	7.9	10	0	.....	.....	104	0.141	.....	12.8	183.8	28.5
7	Apr. 20	5:42	Spring high	.....	34	3.2	2.3	7.8	10	17	23.8	14.3	103	0.141	.....	16.8	159.4	25.5
8	May 19	11:29	High	.....	43	.....	1.1	8.0	15	9	.....	.....	.....	.....	.....	.....	118.9	19.2
9	June 19	17:30	Normal	.....	64	12	1.0	8.4	15	0	.....	.....	89.2	0.121	.....	12.8	151.3	22.3
STATION NO. 45 – RESTIGOUCHE RIVER																		
10	July 19/54	7:50	..... †	.....	62	12	1.6	7.9	10	1	.....	.....	85.2	0.116	.....	12.8	136.1	21.9
11	Aug. 20	4:12	High	.....	64	.....	1.3	8.1	15	2	.....	.....	.....	.....	.....	.....	146.5	22.5
12	Sept. 15	23:245	.....	.....	47	7.2	1.4	7.9 (7.8)	25	6	9.4	7.3	92.0	0.125	.....	2.8	119.8	19.7
13	Sept. 22	5:54	Seasons high	.....	52	3.6	1.3	8.0	20	0	.....	.....	.....	.....	.....	.....	144.3	23.0
14	Oct. 25	4:45	High	.....	44	4.7	1.8	7.9	15	2	.....	.....	92.0	0.125	.....	11.2	137.8	22.3
15	Nov. 24	6:58	High	.....	38	5.1	3.3	7.5	20	5	.....	.....	.....	.....	.....	.....	114.7	19.0
16	Dec. 16/54	5:39	High†	.....	36	2.7	2.2	7.8	5	2	.....	.....	.....	.....	.....	.....	141.6	23.1
17	Jan. 14/55	14:32	Seasons high	.....	40	1.3	2.1	8.2	5	0	.....	.....	211	0.287	.....	26.4	167.8	55.2
18	Feb. 22	7:37	High	.....	38	2.2	1.9	7.9	10	0	.....	.....	.....	.....	.....	.....	168.6	27.4
19	Mar. 26	6:41	High	.....	38	.....	1.4	8.1	5	0	.....	.....	106	0.144	.....	46.0	181.6	30.1
20	Apr. 20	5:42	Spring high	.....	38	4.4	2.8	7.6	25	50	34.1	24.7	86.4	0.118	.....	18.0	123.9	20.4
21	May 19	11:29	High	.....	44	.....	1.1	7.9	15	15	.....	.....	.....	.....	.....	.....	102.9	17.1
22	June 19	17:30	Normal	.....	65	11	0.8	8.2	10	0	.....	.....	80.4	0.109	.....	11.6	130.4	21.3
STATION NO. 46 – RESTIGOUCHE RIVER																		
23	Nov. 14/46	.....	.....	12.9**	40	3.2	.....	8.0	13	4	.....	.....	105	0.143	.....	52.7	.....	28.0
24	Jan. 22/47	.....	.....	12.4**	33	0.6	4.4	7.7	5	<5	.....	.....	131	0.179	.....	.....	.....	19.2
STATION NO. 46A – DUFF'S LAKE																		
25	June /57	.....	.....	.....	.....	.....	2.3	7.4	15	.....	.....	.....	.....	.....	.....	.....	95.2	10.9
STATION NO. 47 – UPSALQUITCH RIVER																		
26	July 19/54	16:56	1,699	1,130	63	.....	1.0	8.2	10	1	.....	.....	101	0.138	3,175	12.0	153.9	25.6
27	Oct. 8	14:39	1,420	2,270	56	5.3	1.1	8.1	20	2	.....	.....	.....	.....	.....	.....	135.1	22.4
28	Nov. 20	4:49	1,720	2,600	41	2.4	1.7	7.9	7	2	.....	.....	.....	.....	.....	.....	145.8	23.3
29	Dec.	No sample taken		916†														
30	Jan. 31/55	7:79	374	504	35	1.3	1.7	8.0	5	0	.....	.....	100	0.136	101	17.6	161.7	27.4
31	Feb.	No sample taken		598														
32	Mar.	No sample taken		760														

† Collector's estimate of river level.

† Collector's estimate of river discharge or level.

* Sample taken near a pulp and paper plant.
** Dissolved oxygen.

* Sampled from railway bridge.
† Ice conditions December 15, 1954 to April 10, 1955.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near MATAPEDIA, QUE.–(Concluded)																								
3.5	.....	0.01	0.0	0.0	0.0	.....	1.7	0.4	.....	0.0	92.2	4.3	0.4	0.05	0.8	8.3	.....	0.0	75.5	89.4	4.6	−0.2	8.4	1
3.3	.....	.....	.....	.....	.....	.....	1.2	0.4	.....	0.0	79.2	4.6	0.9	.....	1.2	3.0	0.0	5.2	70.2	76.4	3.6	−0.6	8.8	2
4.1	.....	.....	.....	.....	.....	.....	1.4	0.5	.....	0.0	89.7	6.3	1.3	.....	1.2	3.9	.....	5.7	79.3	87.9	3.7	−0.3	8.5	3
3.9	.....	Trace	0.0	0.0	0.0	.....	1.2	0.4	.....	0.0	99.3	5.0	1.1	0.02	0.6	5.3	.....	3.9	85.4	94.2	2.9	0.0	8.1	4
3.9	.....	.....	.....	.....	.....	.....	2.0	0.5	0.3	0.0	98.7	4.6	1.3	.....	1.2	3.4	.....	4.2	85.2	93.3	4.8	−0.2	8.4	5
4.4	.....	Trace	0.0	0.08	0.0	.....	1.5	0.5	.....	0.0	106	5.4	0.9	0.0	1.2	5.6	.....	2.5	89.2	100	3.5	−0.2	8.3	6
3.4	.....	0.0	0.0	0.04	0.0	.....	1.3	0.5	.....	0.0	90.9	3.8	1.1	0.0	1.6	5.2	.....	3.0	77.6	87.2	3.5	−0.3	8.4	7
2.5	.....	.....	.....	.....	.....	.....	1.2	0.7	0.0	0.0	65.5	5.6	0.8	.....	0.8	5.2	.....	4.5	58.2	68.2	4.2	−0.4	8.8	8
3.5	.....	Trace	0.0	0.0	0.0	.....	1.5	0.4	0.0	0.0	83.7	4.0	0.9	0.05	0.4	6.5	.....	1.3	70.0	80.9	4.4	0.0	8.1	9
near MATAPEDIA, QUE.																								
3.0	.....	0.08	0.0	0.0	.....	.....	1.9	0.7	.....	0.0	81.4	5.1	0.7	0.1	1.2	6.4	.....	0.3	67.1	81.2	5.7	−0.3	8.5	10
3.1	.....	.....	.....	.....	.....	.....	4.5	0.7	.....	0.0	90.7	5.4	0.2	.....	0.4	7.1	.....	0.0	69.1	88.5	12.1	−0.1	8.3	11
1.9	.....	0.01	0.0	0.01	Trace	.....	1.7	0.4	.....	0.0	68.1	2.5	0.7	0.05	1.2	9.9	.....	1.1	57.0	69.2	6.0	−0.5	8.9	12
										(0)	(68.1)								(58.3)					
2.5	.....	.....	.....	.....	.....	.....	1.6	0.3	.....	0.0	80.8	4.1	0.8	0.1	0.4	8.2	.....	0.0	17.7	80.8	4.9	−0.3	8.6	13
2.7	.....	0.06	0.0	0.0	0.0	.....	1.9	0.4	.....	0.0	81.2	4.1	0.6	0.1	0.6	10.6	.....	0.1	66.7	83.4	5.8	−0.4	8.7	14
2.4	.....	.....	.....	.....	.....	.....	1.1	0.3	.....	0.0	63.9	5.6	0.6	.....	0.4	3.5	0.00	4.9	57.3	64.4	4.0	−0.9	9.3	15
2.8	.....	.....	.....	.....	.....	.....	1.4	0.5	.....	0.0	82.6	4.5	0.9	.....	0.8	6.2	.....	0.9	68.7	80.9	4.2	−0.5	8.8	16
7.3	.....	0.06	0.0	0.07	0.0	.....	6.7	0.9	.....	0.0	194	16.1	5.8	0.0	3.2	6.7	.....	8.7	168	198	7.9	+0.6	8.2	17
3.0	.....	.....	.....	.....	.....	.....	1.8	0.3	0.0	0.0	93.1	6.5	0.7	.....	0.6	4.1	.....	4.3	80.7	90.3	4.6	−0.2	8.3	18
3.0	.....	Trace	0.0	0.06	Trace	.....	1.5	0.4	.....	0.0	103	6.9	0.2	0.0	Trace	1.2	.....	3.3	87.4	101	3.6	0.0	8.1	19
2.3	.....	Trace	0.0	0.02	0.0	.....	1.1	0.5	.....	0.0	69.8	4.0	0.3	0.0	1.6	5.7	.....	3.1	60.4	70.3	3.8	−0.7	9.0	20
1.4	.....	.....	.....	.....	.....	.....	1.2	0.5	0.0	0.0	54.7	6.0	0.5	.....	0.4	5.9	.....	3.5	48.4	60.0	5.1	−0.6	9.1	21
2.2	.....	Trace	0.0	0.0	0.0	.....	1.6	0.4	0.0	0.0	73.5	4.9	0.5	0.0	0.2	7.5	.....	1.9	62.2	74.8	5.3	0.0	8.2	22
near TIDEHEAD, N.B.*																								
1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	60.0	33.4	5.0	.....	.....	11.6	.....	25.3	75.3	.....	.....	.....	.....	23
3.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	115	33.3	5.9	.....	.....	11.8	.....	0.0	62.8	.....	.....	.....	.....	24
near TIDEHEAD, N.B.																								
1.6	.....	0.02	.....	.....	.....	.....	2.5	0.2	0.05	0.0	36.3	7.4	1.4	0.0	0.0	6.1	.....	4.0	33.8	48.0	13.8	−1.5	10.4	25
at UPSALQUITCH, N.B.*–Drainage area, 870 square miles.																								
3.7	.....	0.11	0.0	.....	.....	.....	2.1	0.6	.....	0.0	92.6	6.2	0.4	0.1	0.0	11.2	.....	3.2	79.2	95.6	5.4	0.0	8.2	26
2.5	.....	.....	.....	.....	.....	.....	1.6	0.4	.....	0.0	79.6	5.4	0.6	.....	0.3	8.0	.....	1.1	66.4	80.4	5.0	−0.1	8.3	27
2.4	.....	.....	.....	.....	.....	.....	1.5	0.3	.....	0.0	78.7	5.4	0.5	.....	0.6	7.7	0.00	3.4	68.0	80.5	4.6	−0.4	8.7	28
																								29
2.8	.....	Trace	0.0	0.02	0.0	.....	1.9	0.6	.....	0.0	94.7	7.0	0.8	Trace	1.6	7.4	.....	2.2	79.9	96.2	4.9	−0.2	8.4	30
																								31
																								32

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 47 – UPSALQUITCH RIVER
1	Apr. 2/55	.....	989	5,020	34	2.2	4.2	7.5	5	2	.....	.....	94.4	0.128	251	16.8	155.0	25.5
2	May	No sample taken		6,950														
3	June 13	15:30	2,410	2,480	58	13	1.2	8.0	10	0	.....	.....	82.4	0.112	535	6.8	128.9	20.7
																		STATION NO. 48 – UPSALQUITCH RIVER
4	Sept. 15/54	23:245	4,980†	3,070†	46	7.1	1.5	7.9 (7.6)	20	3	20.0	15.7	175	0.238	2,346	39.2	275.0	21.8
																		STATION NO. 49 – MAIN SOUTHWEST MIRAMICHI RIVER
5	Aug. 16/54	14:200	.....	.....	63	.....	0.9	7.5 (7.1)	60 (70)	0	.....	.....	53.6	0.073	.....	11.6	30.9	3.9
6	Sept. 25	20:66	2 ft above summer low†	.....	51	15	1.9	7.0	60	1	.....	.....	47.6	0.065	.....	13.2	28.7	3.6
7	Oct. 25	16:113	3 ft above summer low	.....	43	9.5	3.6	6.7	45	2	.....	.....	44.0	0.060	.....	29.4	28.7	3.0
8	Nov. 29	11:42	1 ft above summer low	.....	33	7.1	1.7	7.1	30	0.2	.....	.....	.....	.....	.....	.....	34.1	3.6
9	Dec. 24	11:47	2 ft above summer low	.....	37	6.9	2.4	6.9	30	2	.....	.....	34.4	0.047	.....	14.8	30.1	3.2
10	Jan. 28/55	10:35	1 ft above summer low	.....	33	8.5	2.5	7.0	30	2	.....	.....	.....	.....	.....	.....	44.6	4.7
11	Feb. 26	24:58	1 ft above summer low	.....	33	.....	2.3	7.0	30	0.2	.....	.....	.....	.....	.....	.....	43.0	4.5
12	Mar. 20	18:60	1 ft above summer low	.....	34	4.5	2.1	7.0	20	0.2	.....	.....	62.0	0.084	.....	37.6	47.2	4.9
13	Apr.	No sample taken																
14	May 25	12:33	3 ft above summer low	.....	50	.....	1.6	7.0	40	0.8	.....	.....	.....	.....	.....	.....	27.0	3.4
15	June	No sample taken																
16	July 30	24:38	1 ft above summer low	.....	65	.....	2.1	7.1	85	0.3	.....	.....	.....	.....	.....	.....	44.6	5.4
17	Aug.	No sample taken																
18	Sept. 15	18:32	Summer low	.....	55	4.3	1.2	7.4	25	0	.....	.....	41.6	0.057	.....	17.6	46.1	5.3
																		STATION NO. 50 – MAIN SOUTHWEST MIRAMICHI RIVER
19	Jan. 21/47	.....	.....	.....	32	3.2	.....	7.6	13	<5	.....	.....	.....	.....	.....	.....	.....	.....
20	Aug. 16/54	14:177	.....	.....	63	.....	0.9	7.4 (7.2)	80 (110)	0	.....	.....	52.4	0.071	.....	24.0	31.05	3.6
																		STATION NO. 51 – MAIN SOUTHWEST MIRAMICHI RIVER
21	Aug. 22/57	.....	.....	.....	.....	9.3	2.0	7.1	65	2	.....	.....	1,524	2.08	.....	250	2,593	18.9
																		STATION NO. 51A – CHARLO RIVER (LAKE)
22	Sept. 14/54	24:239	.....	.....	52.5	16	2.3	7.5 (7.4)	70 (120)	6	13.3	11.8	88.8	0.121	.....	34.0	81.0	14.2

* Sampled from railway bridge.

† Discharge records at Upsalquitch, N.B.

* Sampled at No. 8 highway bridge.
† Collector's estimate of river level or discharge

* Tidal – sampled below outlet of the Fraser Co. Ltd. pulp mill.

* Sampled at dam.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at UPSALQUITCH, N.B.* – (Concluded)																								
2.6	.....	Trace	Trace	0.05	0.0	.....	1.4	0.4	.....	0.0	86.5	5.1	0.7	0.05	0.6	7.0	.....	3.3	74.3	86.1	3.9	−0.8	9.1	1
																								2
2.3	.....	0.02	Trace	0.01	0.0	.....	1.4	0.4	0.0	0.0	72.0	5.1	0.4	0.0	0.4	6.4	.....	2.0	61.1	72.2	4.7	−0.3	8.6	3
at ROBINSONVILLE, N.B.																								
4.4	.....	0.01	0.0	0.06	0.0	.....	25.3	1.6	.....	0.0 (0)	71.6 (74.6)	12.0	41.7	0.0	0.4	9.0	.....	13.8 (10.0)	72.5 (71.1)	152	42.5	−0.5	8.9	4
at DOAKTOWN, N.B.*																								
0.6	.....	0.06	0.0	0.0	0.0	.....	1.8	0.2	.....	0.0 (0)	16.0 (16.4)	2.1	0.9	0.12	0.02	3.0	.....	0.0 (0.0)	12.2 (12.7)	20.6	25.7	−2.2	11.9	5
0.6	.....	0.12	0.0	0.02	.....	.....	1.3	0.4	.....	0.0	11.8	3.9	1.3	0.20	Trace	6.5	.....	1.8	11.5	23.7	20.3	−2.8	12.6	6
0.9	.....	0.06	0.0	Trace	.....	.....	1.2	0.4	.....	0.0	10.6	2.8	1.1	0.0	0.8	4.6	.....	2.5	11.2	20.1	18.1	−3.3	13.3	7
0.6	.....	.....	.....	.....	.....	.....	1.4	0.3	.....	0.0	13.5	3.1	0.7	.....	0.6	8.5	.....	0.4	11.5	25.5	20.5	−2.7	12.5	8
0.7	.....	0.03	0.0	0.02	0.0	.....	1.3	0.3	.....	0.0	11.8	3.6	0.7	0.0	0.8	6.5	.....	1.2	10.9	23.0	19.8	−2.9	12.7	9
0.7	.....	.....	.....	.....	.....	.....	2.0	0.5	.....	0.0	15.7	.....	1.6	.....	.....	0.9	.....	1.7	14.6	.....	22.2	−1.7	11.4	10
0.5	.....	.....	.....	.....	.....	.....	2.1	0.3	.....	0.0	13.4	3.1	2.3	.....	0.8	8.0	.....	2.3	13.3	28.2	25.1	−2.7	12.4	11
0.5	.....	0.02	0.0	0.01	0.0	.....	2.7	0.6	.....	0.0	13.9	2.9	3.8	0.0	0.4	7.6	.....	2.9	14.3	30.3	27.9	−2.6	12.2	12
																								13
0.5	.....	.....	.....	.....	.....	.....	1.1	0.3	0.3	0.0	9.3	2.4	0.6	.....	1.2	5.1	.....	2.9	10.5	19.2	17.9	−2.9	12.8	14
																								15
1.0	.....	.....	.....	.....	.....	.....	1.8	0.4	0.2	0.0	16.5	2.9	1.5	.....	1.2	6.0	.....	4.1	17.6	28.5	17.8	−2.3	11.7	16
																								17
0.4	.....	0.03	0.0	0.0	0.0	0.0	2.1	0.4	0.0	0.0	17.8	4.3	1.1	0.0	0.4	6.2	.....	0.3	14.9	29.0	22.8	−2.1	11.6	18
at QUARRYVILLE, N.B.																								
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	33.6	.....	3.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
0.5	.....	0.05	0.0	0.02	0.0	.....	1.9	0.2	.....	0.0 (0.0)	13.4 (13.9)	2.8	1.0	.....	0.2	4.5	.....	0.0 (0.3)	11.0 (11.7)	21.9	26.4	−2.4	12.2	20
near NEWCASTLE, N.B.*																								
49.8	.....	0.11	0.0	0.0	0.0	0.0	41.4	15.5	.....	0.0	21.3	109	71.8	0.0	0.2	4.0	.....	234	252	1,340	76.6	−1.9	10.9	21
near DALHOUSIE, N.B.*																								
1.2	.....	Trace	0.0	0.0	0.0	.....	1.6	0.4	.....	0.0 (0)	45.4 (49.2)	3.5	1.0	0.0	1.2	7.3	.....	3.2 (0)	40.4 (40.3)	52.8	7.9	−1.2	9.9	22

88095-5—3½

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
STATION NO. 51A – CHARLO RIVER (LAKE)																		
1	Jan. 24/56†	3:	.....	.....	.....	.....	2.6	7.8	0	2	Trace	.....	75	.....	.....	.....	.....	24
2	July 10†	13:	.....	.....	.....	.....	.....	8.2	10	2	Trace	.....	.....	.....	.....	.....	110	19
STATION NO. 52 – RENOUS RIVER																		
3	Aug. 16/54	14:172	.....	.....	65	.....	3.9	7.0 (7.2)	80 (75)	0	.....	.....	49.2	0.064	.....	27.6	32.4	4.2
STATION NO. 53 – LITTLE SOUTHWEST MIRAMICHI RIVER																		
4	July 22/54	13:47	750†	783†	69	.....	1.2	7.4	30	2	.....	.....	37.8	0.051	76.2	15.4	34.4	3.9
5	Aug. 16	14:32	1,640	1,380	62	.....	0.9	7.4 (7.2)	80 (80)	0.7	.....	.....	.....	.....	.....	.....	30.4	4.0
6	Sept. 22	5:21	1,030	1,520	60	11	1.6	7.1	60	0	.....	.....	.....	.....	.....	.....	30.2	3.4
7	Nov. 23	3:48	2,300	2,140	39	8.2	2.5	6.8	65	2	.....	.....	.....	.....	.....	.....	22.1	2.5
8	Jan. 24/55	4:80	349*	499	35	4.2	2.1	7.0	30	0	.....	.....	30.8	0.042	29.1	10.8	27.2	3.1
9	Mar. 24	7:43	533	946	.....	4.4	1.9	7.0	20	0.2	.....	.....	33.6	0.046	48.6	11.6	29.8	3.3
10	May 25	7:23	5,050	5,180	50	.....	2.8	6.4	45	2	.....	.....	.....	.....	.....	.....	17.5	2.1
11	July 22	4:18	396	474	69	14	0.9	7.3	40	0	.....	.....	34.4	0.047	36.8	16.4	28.2	3.2
STATION NO. 54 – NORTHWEST MIRAMICHI RIVER																		
			Gauge height in feet†															
12	Jan. 23/47	.....	.....	.....	32	5.7	.....	6.9	30	<5	.....	.....	.....	.....	.....	.....	.....	.....
13	July 22/54	13:47	8 ft 2 in.	.....	67	.....	1.0	7.5	30	2	.....	.....	41.2	0.056	.....	14.6	40.4	5.2
14	Aug. 16	14:32	.....	.....	62.5	.....	0.9	7.5 (7.3)	75 (90)	0.7	.....	.....	.....	.....	.....	.....	30.6	4.1
15	Sept. 22	5:89	7 ft 3 in.	.....	55	8.0	1.3	7.2	50	0	.....	.....	.....	.....	.....	.....	37.1	4.8
16	Nov. 23	3:48	9 ft	.....	40	10	1.9	7.0	65	2	.....	.....	.....	.....	.....	.....	26.7	3.3
17	Jan. /55	No sample taken																
18	Mar. 24	7:43	8 ft	.....	.....	4.6	2.0	7.1	30	0	.....	.....	35.2	0.048	.....	12.0	38.2	4.5
19	May 25	7:23	11 ft	.....	51	.....	1.6	6.9	40	2	.....	.....	.....	.....	.....	.....	22.3	3.1
20	July 22	4:18	5 ft 9 in.	.....	71	14	1.3	7.4	40	0	.....	.....	43.2	0.059	.....	19.6	44.8	5.8
STATION NO. 55 – NIPISIGUIT RIVER																		
21	July 21/54	5:48	674†	976†	61	13	2.0	7.2	20	1	.....	.....	36.6	0.050	66.5	12.8	40.7	4.3
22	Aug. 20	4:28	1,510	1,700	60	.....	1.3	7.4	10	2	.....	.....	.....	.....	.....	.....	39.9	4.2
23	Sept. 21	6:90	1,640	1,740	56	6.6	1.2	7.4	40	0	.....	.....	.....	.....	.....	.....	39.2	4.9
24	Oct. 20	6:50	1,680	1,650	43	11	1.6	7.2	65	0.7	.....	.....	43.6	0.059	197	18.0	33.3	3.6
25	Nov. 20	6:51	1,500	1,950	45	6.2	1.4	7.2	35	2	.....	.....	.....	.....	.....	.....	34.9	3.6
26	Dec. 20	8:42	1,840	1,250	34	6.3	2.6	6.9	40	0.9	.....	.....	.....	.....	.....	.....	33.0	3.6
27	Jan. 24/55	9:80	665	772	34	5.0	1.5	7.2	35	0	.....	.....	36.4	0.050	66.0	14.0	37.4	4.2
28	Feb. 21	4:38	740	712	33	5.7	1.9	7.1	40	0.3	.....	.....	.....	.....	.....	.....	38.7	4.2
29	Mar. 24	7:39	605	677	33	.....	1.8	7.1	30	0	.....	.....	.....	.....	.....	.....	37.8	4.3
30	Apr. 20	6:42	3,550	2,340	33	9.4	1.7	7.0	50	12	28.5	16.0	41.2	0.056	394	22.4	39.4	3.2
31	May 25	5:23	6,740	5,610	47	.....	1.2	7.1	40	4	.....	.....	.....	.....	.....	.....	25.0	3.2
32	June 21	15:28	1,670	2,560	58	13	0.9	7.4	25	0	.....	.....	34.4	0.047	156	13.6	37.0	4.0

* Sampled at dam.
† Analyses supplied by Alchem Limited, Burlington, Ont.

† Discharge records at No. 11 highway bridge at Lyttleton; drainage area 556 square miles.
* Ice conditions, December 6, 1954 to April 22, 1955.

* Sampled from highway bridge.
† Collector's report of river level.

* Sampled at intake to pulp mill.
† Discharge records at Great Falls, at powerhouse of Bathurst Power and Paper Company, Limited, – drainage area, 700 square miles.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near DALHOUSIE, N.B.* – (Concluded)																								
2.4	Trace	.....	.....	0.1	.....	.....	.....	.....	0.0	0	63.4	6.8	7.3	.....	.....	5.0	....	18	70	.....	.....	-0.5	8.8	1
1.5	0.0	.....	.....	0.0	.....	.....	.....	.....	0.2	0	65.9	4.1	3.6	.....	.....	3.9	....	0	54	.....	.....	-0.2	8.6	2
near RENOUS, N.B.																								
0.5	.....	0.07	0.0	0.0	0.0	.....	1.5	0.3	.....	0.0 (0)	18.4 (18.9)	1.1	0.3	.....	0.6	5.9	.....	0.0	12.5	23.8	20.0	-2.5	12.0	3
at RED BANK, N.B.																								
0.7	.....	0.11	0.0	.....	.....	.....	2.0	0.4	.....	0.0	18.0	1.2	0.6	0.2	0.8	5.7	.....	0.0	12.6	24.5	24.9	-2.3	11.5	4
0.5	.....	.....	.....	.....	.....	.....	1.5	0.4	.....	0.0 (0)	16.7 (16.4)	0.5	0.8	.....	0.2	4.4	.....	0.0 (0.0)	11.8 (13.1)	20.5	20.9	-2.2	11.8	5
0.2	.....	.....	.....	.....	.....	.....	1.5	0.5	.....	0.0	13.2	2.2	0.8	.....	Trace	7.7	.....	0.0	9.6	22.9	24.9	-2.7	12.5	6
0.5	.....	.....	.....	.....	.....	.....	1.2	0.3	.....	0.0	9.6	2.2	0.6	.....	0.4	6.9	0.00	0.4	8.3	19.3	23.2	-3.3	13.4	7
0.5	.....	0.0	0.0	0.10	0.0	.....	1.6	0.3	.....	0.0	11.7	3.3	0.8	0.1	0.8	8.2	.....	0.2	9.8	24.6	24.5	-3.0	13.0	8
0.4	.....	0.04	Trace	0.04	0.0	.....	1.3	0.3	.....	0.0	12.2	0.9	0.5	0.2	0.4	9.0	.....	0.0	9.9	22.3	21.2	-2.8	12.6	9
0.0	.....	.....	.....	.....	.....	.....	1.0	0.3	0.2	0.0	4.3	2.8	0.6	.....	0.2	4.6	.....	1.7	5.2	13.7	27.9	-4.1	14.6	10
0.4	.....	0.04	0.0	0.02	0.0	.....	1.2	0.4	0.2	0.0	11.0	3.4	0.7	0.0	0.4	7.8	.....	0.6	9.6	23.2	20.2	-2.5	12.3	11
near RED BANK, N.B.*																								
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	26.9	.....	5.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
0.9	.....	0.11	.....	.....	.....	.....	1.9	0.4	.....	0.0	21.2	2.2	0.9	0.1	8.4	5.4	.....	0.0	16.5	27.9	19.6	-1.9	11.3	13
0.5	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0 (0)	17.2 (17.7)	0.4	0.8	.....	0.2	5.2	.....	0.0	12.1	21.5	19.1	-2.1	11.7	14
0.2	.....	.....	.....	.....	.....	.....	1.3	0.3	.....	0.0	15.7	3.1	0.6	.....	0.6	6.9	.....	0.0	12.8	25.5	17.6	-2.4	12.0	15
0.6	.....	.....	.....	.....	.....	.....	1.0	0.3	.....	0.0	11.1	2.1	1.0	.....	0.6	5.8	0.03	1.6	10.7	20.2	16.5	-2.9	12.8	16
																								17
0.7	.....	0.04	0.0	0.04	0.0	.....	1.6	0.4	.....	0.0	16.0	1.9	0.7	0.1	2.0	7.8	.....	1.0	14.1	27.7	19.0	-2.4	11.9	18
0.1	.....	.....	.....	.....	.....	.....	1.0	0.3	0.1	0.0	7.4	2.5	0.7	.....	0.4	4.0	.....	2.1	8.2	15.8	20.3	-3.2	13.3	19
0.7	.....	0.08	0.0	0.02	0.0	.....	1.5	0.4	0.1	0.0	19.6	2.8	1.3	0.0	0.8	5.6	.....	1.3	17.4	28.7	15.3	-1.9	11.2	20
near BATHURST, N.B.*																								
1.1	.....	0.12	0.0	.....	.....	.....	2.0	0.6	.....	0.0	21.1	1.6	0.6	0.1	0.6	7.2	.....	0.0	15.3	28.6	21.4	-2.2	11.2	21
1.1	.....	.....	.....	.....	.....	.....	1.6	0.4	.....	0.0	21.8	0.8	0.8	.....	0.2	6.2	.....	0.0	15.0	26.0	18.3	-2.1	10.6	22
0.4	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0	17.9	1.8	0.6	.....	0.6	8.6	.....	0.0	13.9	26.8	17.5	-2.1	11.6	23
1.0	.....	0.09	0.0	0.0	0.0	.....	1.3	0.5	.....	0.0	16.6	1.6	1.0	.....	0.6	7.1	.....	0.0	13.1	25.1	17.1	-2.5	12.2	24
1.0	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0	14.5	2.8	0.9	.....	0.8	6.9	0.11	1.2	13.1	25.5	18.3	-2.6	12.4	25
0.8	.....	.....	.....	.....	.....	.....	1.4	0.4	.....	0.0	13.8	3.8	1.2	.....	1.2	6.6	.....	1.0	12.3	25.8	19.2	-3.4	13.1	26
0.8	.....	0.07	0.0	0.23	0.0	.....	1.6	0.4	.....	0.0	15.4	3.3	1.0	0.2	0.8	7.7	.....	1.2	13.8	27.9	18.1	-2.5	12.2	27
0.8	.....	.....	.....	.....	.....	.....	1.6	0.5	.....	0.0	14.6	2.8	1.1	.....	0.8	5.6	.....	1.8	13.8	24.6	19.4	-2.3	12.3	28
0.9	.....	.....	.....	.....	.....	.....	1.3	0.5	.....	0.0	16.8	2.0	0.8	.....	0.6	8.3	.....	0.6	14.4	27.0	15.8	-2.4	11.9	29
0.5	.....	0.04	0.0	0.03	0.0	.....	1.0	0.5	.....	0.0	9.3	2.5	0.8	0.0	1.4	7.3	.....	2.4	10.0	21.9	16.6	-2.9	12.8	30
0.3	.....	.....	.....	.....	.....	.....	1.2	0.6	0.2	0 0	8.9	3.6	0.7	.....	0.8	4.8	.....	1.9	9.2	19.6	20.7	-2.9	12.9	31
0.6	.....	0.04	0.0	0.0	0.0	.....	1.4	0.4	0.1	0.0	15.0	2.8	0.5	0.0	0.1	6.1	.....	0.2	12.5	23.3	18.9	-2.2	11.8	32

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
STATION NO. 56 – RICHIBUCTO RIVER																		
1	Aug. 17/54	16:171	.....	.....	57	.....	2.7	7.0 (7.6)	170 (180)	0.7	.....	.....	62.0	0.084	.....	33.5	35.3	5.2
STATION NO. 57 – PETITCODIAC RIVER																		
			Water level †															
2	July 23/54	12:52	Low	.....	68	.....	1.4	7.6	20	0.7	.....	.....	110	0.150	.....	15.2	170.5	13.5
3	Aug. 18	15:44	Low	.....	59	.....	1.9	7.6 (6.9)	30	460	.....	.....	.....	.....	.....	.....	310.3	20.3
4	Aug. 23	4:25	Very low	.....	60	.....	1.4	7.7	20	16	.....	.....	.....	.....	.....	.....	345.6	21.8
5	Sept. 23	.....	Low	.....	60	.....	2.3	7.5	25	190	.....	.....	.....	.....	.....	.....	426.3	27.0
6	Oct.	No sample taken																
7	Nov.	No sample taken																
8	Dec. 1	7:61	Medium high	.....	33	5.9	2.2	7.2	30	2	.....	.....	94.8	0.129	.....	26.4	101.3	10.7
9	Jan. 24/55	9:80	High	.....	33	4.4	3.2	7.1	35	10	131	127	91.2	0.124	.....	14.0	142.2	11.6
10	Feb.	No sample taken																
11	Mar. 23	9:44	Medium	.....	36	4.2	2.7	6.9	30	4	32	26	51.2	0.070	.....	24.0	64.8	5.9
12	Apr.	No sample taken																
13	May 24	6:16	High	.....	70	4.5	1.2	7.5	20	35	30	25	96.0	0.131	.....	22.8	135.8	10.7
14	June 25	13:16	High	.....	65	.....	1.5	7.5	15	30	.....	.....	.....	.....	.....	.....	258.2	17.7

* Sampled from highway bridge.
† Collector's estimate of river level.

STATION NO. 58 – MEMRAMCOOK RIVER

15	Aug. 18/54	16:205	.....	.....	60	.....	2.5	7.9 (7.4)	35	925	1,151	1,092	233,830	318	.....	24,450	36,593	38.1

* Sampled from No. 2 highway bridge at low tide.

STATION NO. 59 – ST. CROIX RIVER

			Gauge height †															
16	July 15/54	6:48	5 ft 2in.	.....	70	19	7.5	6.3	35	1	.....	.....	31.8	0.043	.....	16.6	29.0	3.1
17	Aug. 10	10:120	.....	.....	70	.....	1.7	7.0 (6.6)	45 (25)	2	.....	.....	.....	.....	.....	.....	26.5	3.0
18	Sept. 16	5:48	3 ft 6 in.	.....	63	.....	2.8	6.8	45	0	.....	.....	.....	.....	.....	.....	30.0	3.1
19	Oct. 7	7:27	6 ft	.....	52	8.1	1.7	7.0	40	0.7	.....	.....	31.6	0.043	.....	13.6	26.4	3.1
20	Nov. 15	9:49	8 ft 2 in.	.....	35	7.7	1.6	7.0	45	2	.....	.....	.....	.....	.....	.....	29.2	3.1
21	Dec.	No sample taken																
22	Jan. 15/55	9:31	6 ft	.....	35	7.3	2.8	6.8	45	0	.....	.....	34.8	0.047	.....	18.4	27.9	3.1
23	Feb.	No sample taken																
24	Mar. 15	3:41	7 ft	.....	38	7.4	0.9	6.9	40	0	.....	.....	30.8	0.042	.....	14.0	31.3	3.6
25	Apr. 28	7:20	10 ft 3 in.	.....	40	.....	2.7	6.6	45	2	.....	.....	.....	.....	.....	.....	22.3	2.5
26	May 16	3:24	6 ft 6 in.	.....	54	6.8	1.5	6.9	40	0	.....	.....	42.0	0.057	.....	23.0	26.3	2.5
27	June	No sample taken																
28	July 12	8:15	6 ft 7 in.	.....	75	14	0.9	7.2	30	0	.....	.....	36.0	0.049	.....	21.6	27.6	3.2

* Sampled at bridge at Custom's House.
† Collector's record of river level.

STATION NO. 60 – ST. CROIX RIVER

29	Sept. 23/52	.....	1,210	.....	.....	.....	3.2	6.7	35	.....	.....	.....	26.0**	0.035	.....	.....	27.1	3.4
30	May 7/53	.....	2,120	2,990	.....	.....	9.8	6.2	38	.....	.....	.....	40.0**	0.054	2,287	26	26.6	3.0

* Data supplied by Quality of Waters Branch, Water Resources Division, U.S. Geological Survey, Washington, D.C.; samples collected at gauge below the powerhouse at Grand Falls.
** Dried at 180°C.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near HARCOURT, N.B.																								
0.5	.....	0.20	0.0	0.08	0.0	.....	1.9	0.2	.....	0.0 (0)	16.7 (21.5)	2.8	15	0.0	0.4	6.8	.....	1.3 (0)	15.0 (17.0)	27.8	20.9	-2.5	12.0	1
at SALISBURY, N.B.*																								
1.9	.....	0.19	0.0	.....	.....	.....	19.0	0.6	.....	0.0	34.6	22.0	21.0	0.2	0.0	.....	.....	13.1	41.5	95.4	49.4	-1.2	10.0	2
3.7	.....	.....	.....	.....	.....	.....	34.0	1.8	.....	0.0 (0)	44.2 (45.6)	38.8	44.7	.....	0.4	5.9	.....	29.6	65.9	171	51.7	-1.0	9.6	3
2.5	.....	.....	.....	.....	.....	.....	32.4	1.2	.....	0.0	40.5	37.0	44.5	.....	0.2	4.0	.....	31.4	64.7	164	51.6	-0.9	9.5	4
3.9	.....	.....	.....	.....	.....	.....	48.6	1.8	.....	0.0	46.8	57.5	65.9	.....	0.4	2.6	0.04	45.0	83.4	231	55.1	-0.9	9.3	5
																								6
																								7
1.4	.....	0.07	0.0	0.0	0.0	.....	9.3	0.6	.....	0.0	21.7	17.5	13.3	0.1	0.8	4.5	.....	14.8	32.6	69.0	37.7	-2.1	11.4	8
1.4	.....	0.02	0.0	0.13	0.0	.....	10.6	0.7	.....	0.0	21.9	19.0	14.4	0.1	1.2	5.6	.....	16.7	34.7	75.6	38.8	-2.1	11.3	9
																								10
0.8	.....	0.04	0.0	0.08	0.0	.....	3.4	0.8	.....	0.0	12.6	9.0	4.6	0.0	0.6	4.5	.....	7.7	18.0	35.9	27.7	-2.7	12.3	11
																								12
1.1	.....	0.06	0.0	Trace	0.0	.....	11.2	0.8	0.01	0.0	21.9	16.9	15.0	0.0	0.8	4.6	.....	13.2	31.2	72.0	42.9	-1.6	10.7	13
2.5	.....	.....	.....	.....	.....	.....	25.3	1.0	0.0	0.0	33.4	29.6	36.2	.....	0.4	3.9	.....	27.0	54.4	131	49.7	-1.1	9.7	14
at MEMRAMCOOK, N.B.*																								
954	.....	0.03	0.0	.....	0.0	.....	6,760	250	.....	0.0 (0)	121 (119)	1,677	12,067	.....	.....	10	.....	3,918	4,017	21,816	77.2	-0.2	8.3	15
at ST. CROIX, N.B.*																								
0.4	.....	0.01	0.0	.....	.....	.....	1.4	0.4	.....	0.0	9.5	3.8	0.8	0.05	0.6	1.8	.....	1.7	9.5	17.5	23.3	-3.6	13.5	16
0.4	.....	.....	.....	.....	.....	.....	1.0	0.3	.....	0.0 (0)	9.9 (12.6)	1.6	1.0	.....	0.6	1.8	.....	1.0	9.1	14.6	18.6	-3.0	13.0	17
0.3	.....	.....	.....	.....	.....	.....	1.3	0.4	.....	0.0	10.7	1.7	0.8	.....	0.8	1.9	.....	0.2	9.0	15.6	23.0	-3.2	13.2	18
0.5	.....	0.03	0.0	0.26	0.0	.....	1.3	0.4	.....	0.0	9.8	1.3	1.0	0.05	3.6	1.6	.....	1.7	9.7	18.4	21.5	-3.0	13.0	19
0.6	.....	.....	.....	.....	.....	.....	1.1	0.3	.....	0.0	9.5	2.7	0.7	.....	0.6	2.5	0.00	2.4	10.2	16.3	18.4	-3.0	13.0	20
																								21
0.6	.....	0.04	0.0	0.0	0.0	.....	0.8	0.3	.....	0.0	9.4	3.1	1.0	0.0	0.6	2.4	.....	2.5	10.2	16.5	14.0	-3.2	13.2	22
																								23
0.6	.....	0.04	Trace	0.02	0.0	.....	1.1	0.3	.....	0.0	10.4	3.6	1.0	0.1	0.6	3.4	.....	3.0	11.5	19.5	16.6	-3.0	12.9	24
0.3	.....	.....	.....	.....	.....	.....	1.0	0.3	0.2	0.0	6.7	2.0	0.7	.....	1.2	7.2	.....	2.0	7.5	18.5	21.7	-3.5	13.6	25
0.4	.....	0.02	0.0	0.07	0.0	.....	1.0	0.3	0.0	0.0	7.1	2.4	1.1	0.0	0.6	2.0	.....	2.1	7.9	13.9	20.0	-3.3	13.5	26
																								27
0.4	.....	0.02	0.0	0.03	0.0	.....	1.1	0.4	0.2	0.0	9.4	2.0	1.1	0.0	0.4	1.7	.....	1.9	9.6	14.4	18.8	-2.7	12.6	28
at BAILEYVILLE, MAINE, U.S.A.*																								
0.2	0.1	0.0	0.01	0.0	0.0	0.0	1.1	0.4	.....	0.0	10.0	1.6	1.0	0.1	2.1	2.9	.....	1.0	9.0	16.9	19.6	-3.2	13.1	29
0.4	0.07	0.03	0.0	0.0	0.02	0.19	0.9	0.3	.....	0.0	9.0	1.6	1.6	0.0	0.3	1.8	.....	2.0	10.0	14.1	16.5	-3.8	13.8	30

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 61 – ST. CROIX RIVER
1	July 16/54	5:47	2,400†	2,410†	67	27	8.2	6.4	65	2	.....	.....	44.2	0.060	285	19.8	33.8	4.1
2	Aug. 10	10:146	2,710	2,510	68	.....	3.1	6.8 (6.4)	70 (80)	4	5.4	0.5	50.8	0.069	371	32.8	33.7	4.4
3	Aug. 18	6:14	2,660	2,510	64	.....	1.6	7.2	75	2	.....	.....	.....	.....	.....	.....	36.7	4.4
4	Sept. 18	3:46	3,910	3,460	69	.....	4.8	6.5	100	0.8	.....	.....	.....	.....	.....	.....	30.3	3.7
5	Oct. 18	8:52	5,120	2,900	.....	15	2.6	6.9	90	2	.....	.....	43.2	0.059	599	24.0	32.3	3.9
6	Nov. 18	6:46	2,640	3,830	39	12	4.0	6.6	65	2	.....	.....	.....	.....	.....	.....	31.3	3.4
7	Dec. 18	3:44	5,330	5,040	33	13	3.4	6.7	60	0.9	.....	.....	.....	.....	.....	.....	31.1	3.2
8	Jan. 22/55	6:46	2,990	3,660	31	12	4.3	6.5	50	0.3	.....	.....	47.6	0.065	386	35.6	31.5	3.6
9	Feb. 19	6:40	4,800	4,050	33	10	.....	6.7	50	0.8	.....	.....	.....	.....	.....	.....	36.1	3.2
10	Mar. 19	3:37	5,110	4,240	32.5	.....	3.3	6.6	40	0.2	.....	.....	.....	.....	.....	.....	30.0	3.2
11	Apr. 18	7:44	7,040	5,840	43	8.8	2.5	6.6	40	0.2	.....	.....	34.4	0.047	656	21.2	23.8	2.7
12	May 20	5:12	2,270	2,870	55	.....	2.6	6.7	40	3	.....	.....	.....	.....	.....	.....	28.4	3.6
13	June 18	18:24	2,530	2,460	63	21	3.1	6.6	45	0.2	.....	.....	41.2	0.056	281	22.8	32.3	3.4

* Sampled at forebay tn power plant.
† Discharge records, 700 ft downstream from Grand Falls and 8 miles upstream from Woodland, Me.; drainage area, 1,320 square miles.

																		STATION NO. 62 – GRAND LAKE STREAM
14	Oct. 15/53	.....	2.48	.....	.....	.....	3.4	6.6	10	.....	.....	.....	23.0**	0.031	.....	7.0	25.4	2.3

* Data supplied by Quality of Waters Branch, Water Resources Division, U.S. Geological Survey, Washington, D.C.
** Dried at 180°C.

																		STATION NO. 63 – DIGDEGUASH RIVER
15	Aug. 10/54	10:132	.....	.....	63	.....	2.1	7.2 (6.5)	180 (160)	6	0.8	0.0	62.8	0.085	.....	42.4	37.1	6.4
																		STATION NO. 64 – CHAMCOOK LAKE
16	Aug. 11/54	9:145	.....	.....	58	.....	1.9	6.9	15	2	.....	.....	32.0	0.044	.....	14.0	42.3	4.7

* Sampled at town tap.

																		STATION NO. 65 – MAGAGUADAVIC RIVER
17	Aug. 10/54	10:52	874†	770†	69	.....	2.1	6.9 (6.8)	55 (65)	4	.....	.....	.....	.....	.....	.....	25.1	2.8

* Sampled at No. 4 highway bridge.
† Discharge records at Elmcroft, N.B. about 12 miles upstream from St. George; drainage area, 754 square miles.

																		STATION NO. 66 – MAGAGUADAVIC RIVER
18	July 17/54	4:46	353†	1,080†	67	21	2.3	7.0	50	3	.....	.....	40.6	0.055	38.6	19.4	36.0	3.8
19	Aug. 11	9:51	1,420	770	68	.....	3.5	6.8	45 (120)	2	.....	.....	.....	.....	.....	.....	31.3	4.3
20	Aug. 31	7:43	226	770	67	26	0.6	7.6	70	2	.....	.....	40.6	0.055	24.7	18.6	35.2	3.8
21	Sept. 17	4:17	2,310	1,490	58	.....	4.2	6.6	110	0.8	.....	.....	.....	.....	.....	.....	34.4	3.2
22	Oct.	No sample taken		1,790														
23	Nov. 24	6:53	1,830	2,020	42	8.6	2.2	6.9	65	2	.....	.....	.....	.....	.....	.....	32.1	3.4
24	Dec.	No sample taken		2,990														
25	Jan. 18/55	10:50	898	1,670	34	8.9	2.5	6.8	70	0	.....	.....	43.2	0.059	105	32.8	29.2	3.5
26	Feb.	No sample taken		1,660														
27	Mar. 26	5:41	1,350	1,090	34	7.2	2.4	6.7	50	0.8	.....	.....	65.2	0.089	238	16.4	26.5	2.7
28	Apr.	No sample taken		3,510														
29	May 16	7:14	1,390	1,730	55	.....	1.5	7.0	45	2	.....	.....	.....	.....	.....	.....	27.3	3.1

* Sampled at No. 1 highway bridge.
† Discharge records at Elmcroft, about 12 miles upstream from St. George; drainage area, 754 square miles.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at MILLTOWN, N.B.*																								
0.6	.....	0.15	0.0	.....	.....	.....	1.5	0.6	.....	0.0	14.6	.....	1.2	.....	0.6	2.6	.....	4.3	12.6	.....	19.6	-3.2	12.8	1
0.4	.....	0.21	0.0	0.0	0.01	.....	1.5	0.4	.....	0.0	12.1	5.9	1.3	0.0	0.1	2.6	.....	2.7	12.6	22.7	19.4	-2.9	12.6	2
										(0)	(12.6)							(4.5)	(14.8)					
0.5	.....	.....	.....	.....	.....	.....	1.4	0.6	.....	0.0	14.7	.....	0.7	.....	0.6	2.4	.....	0.9	13.0	.....	18.1	-2.4	12.0	3
0.4	.....	.....	.....	.....	.....	.....	1.3	0.4	.....	0.0	9.1	4.1	1.2	.....	0.4	3.1	.....	3.4	10.9	19.0	19.2	-3.4	13.3	4
0.6	.....	0.31	0.0	0.0	0.0	.....	1.3	0.4	.....	0.0	12.2	2.8	1.3	0.2	0.6	4.3	.....	2.2	12.2	21.7	18.2	-2.9	12.5	5
0.7	.....	.....	.....	.....	.....	.....	1.4	0.3	.....	0.0	9.8	5.9	1.0	.....	0.6	3.1	.....	3.4	11.4	21.2	20.6	-3.4	13.4	6
0.7	.....	.....	.....	.....	.....	.....	1.4	0.3	.....	0.0	9.9	5.0	2.0	.....	0.2	3.2	.....	2.8	10.9	20.9	21.3	-3.3	13.3	7
0.8	.....	0.03	0.0	0.03	0.0	.....	1.2	0.3	.....	0.0	7.9	6.2	1.8	0.0	Trace	1.9	.....	5.8	12.3	20.5	16.9	-3.6	13.7	8
0.7	.....	.....	.....	.....	.....	.....	1.2	0.4	.....	0.0	7.7	3.8	1.3	.....	0.8	2.5	0.00	4.6	10.9	17.7	18.7	-3.4	13.5	9
0.5	.....	.....	.....	.....	.....	.....	1.3	0.3	.....	0.0	7.7	5.0	1.0	.....	0.4	3.2	.....	3.7	10.0	18.7	21.3	-3.5	13.6	10
0.4	.....	0.01	0.0	0.04	0.0	.....	1.0	0.6	.....	0.0	6.2	4.8	0.9	0.0	0.6	3.4	.....	3.3	8.4	17.9	18.8	-3.6	13.8	11
0.4	.....	.....	.....	.....	.....	.....	1.0	0.3	0.2	0.0	7.9	4.8	0.9	.....	0.6	1.8	.....	4.1	10.6	17.9	16.5	-3.2	13.1	12
0.5	.....	0.07	0.0	0.02	Trace	.....	1.1	0.3	0.1	0.0	7.9	5.5	0.9	0.0	0.2	1.7	.....	4.0	10.5	17.6	17.6	-3.3	13.2	13
near GRAND LAKE STREAM, WASHINGTON CO., MAINE, U.S.A.*																								
0.8	0.08	0.0	0.0	0.0	0.01	0.0	1.6	0.4	.....	0.0	9.0	1.7	1.9	0.3	0.5	2.2	.....	2.0	9.0	15.0	26.7	-4.5	13.6	14
near LAWRENCE, N.B.																								
1.0	.....	0.1	0.0	Trace	0.0	.....	1.1	0.1	.....	0.0	21.3	0.8	0.9	.....	1.2	3.3	.....	2.6	20.1	25.4	10.5	-2.1	11.4	15
										(0)	(22.8)							(2.6)	(21.2)					
near ST. ANDREWS, N.B.*																								
0.1	.....	0.16	Trace	0.20	0.92	.....	2.3	0.3	.....	0.0	10.6	3.9	4.0	0.05	0.8	1.1	.....	3.4	12.1	23.7	24.6	-2.8	12.5	16
										(0)	(12.6)							(2.4)	(12.7)					
near THOMASTON, N.B.*																								
0.5	.....	.....	.....	.....	.....	.....	1.2	0.3	.....	0.0	10.1	2.0	1.1	.....	0.4	3.1	.....	0.7	9.0	16.4	21.7	-3.1	13.1	17
										(0)	(10.1)													
at ST. GEORGE, N.B.*																								
0.4	.....	0.11	0.0	.....	.....	.....	2.0	0.4	.....	0.0	12.7	1.7	1.3	0.3	1.2	3.7	.....	0.6	11.0	21.2	27.4	-2.3	12.4	18
0.6	.....	.....	.....	.....	.....	.....	1.5	0.3	.....	0.0	14.6	1.7	1.7	.....	0.4	3.5	.....	1.1	13.1	21.3	20.5	-3.2	12.4	19
										(0)	(15.2)								(12.7)					
0.7	.....	0.11	.....	0.02	.....	.....	1.7	0.5	.....	0.0	16.9	1.4	1.9	.....	0.6	3.4	.....	0.0	12.2	22.3	21.7	-2.1	10.8	20
0.8	.....	.....	.....	.....	.....	.....	1.2	0.6	.....	0.0	9.9	2.8	2.2	.....	0.4	3.4	.....	3.2	11.3	19.5	17.8	-3.4	15.4	21
																								22
0.7	.....	.....	.....	.....	.....	.....	1.5	0.3	.....	0.0	10.6	3.1	1.8	.....	0.4	3.9	0.00	2.7	11.4	20.3	21.7	-3.0	12.9	23
																								24
0.4	.....	0.04	0.0	0.03	0.0	.....	1.4	0.3	.....	0.0	9.0	2.8	2.4	.....	0.4	3.1	.....	3.0	10.4	19.6	21.7	-3.3	13.4	25
																								26
0.5	.....	0.05	0.0	0.12	0.0	.....	1.2	0.3	.....	0.0	7.4	2.0	1.8	0.1	0.8	4.9	.....	2.7	8.8	18.2	21.0	-3.4	13.5	27
																								28
0.4	.....	.....	.....	.....	.....	.....	1.3	0.5	0.4	0.0	9.5	1.9	1.7	.....	0.6	4.9	.....	1.6	9.4	19.1	22.0	-2.9	12.8	29

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 66—MAGAGUADAVIC RIVER
1	June 1955	No sample taken†		746 †														
2	July 20	6:20	573e	480	74	14	1.3	7.1	40	2	.....	.....	36.0	0.049	56.0e	16.0	33.9	3.6
																		STATION NO. 67 – MUSQUASH RIVER
3	Aug. 11/54	13:153	.....	.....	65	.....	1.6	7.1	150 (220)	10	8.0	0.8	53.6	0.073	.....	32.0	48.0	3.1
																		STATION NO. 68 – NAPPAN RIVER
4	Aug. 18/54	18:159	.....	.....	65	.....	0.4	8.2 (7.7)	50 (80)	4	4.1	2.7	76.8	0.105	.....	20.0	95.6	11.2
5	Aug. 24/55 †	.....	.....	.....	.....	.....	11.4	6.8	.....	2	Trace	.....	120	0.163	.....	12.8	.....	1.9
																		STATION NO. 69 – SHUBENACADIE LAKE
6	Aug. 28/54	19:243	.....	.....	66	5.9	1.2	7.0 (7.8)	8	0	.....	.....	28.0	0.038	.....	8.0	35.0	2.5
																		STATION NO. 70 – SHUBENACADIE RIVER
7	Aug. 19/54	19:197	.....	.....	68	.....	1.3	7.7	70	60	481	447	224	0.345	.....	34.0	285.6	24.6
																		STATION NO. 71 – KENNETCOOK RIVER
8	Aug. 20/54	18:202	.....	.....	66	.....	.....	8.0 (7.5)	25	900	1,102	1,020	228,755	310.7	.....	25,120	32,403	260
																		STATION NO. 72 – ST. CROIX RIVER
9	Aug. 20/54	18:196	.....	.....	69	.....	1.1	7.6 (6.9)	90	850	1,259	1,162	196	0.226	.....	31.6	270.8	11.1
																		STATION NO. 73 – AVON RIVER
10	Aug. 20/54	18:168	.....	.....	68	.....	....	7.4 (7.6)	70	850	1,128	1,042	4,154	5.66	.....	509	7,212	57.4
																		STATION NO. 74 – MAGEE LAKE
11	Aug. 20/54	20:203	.....	.....	63	.....	5.8	6.3 (7.0)	90 (160)	0.9	.....	.....	40.8	0.056	.....	10.4	30.2	1.6
12	Apr. 16/56	56:85	.....	.....	45	7	0	8.8	0	2	.....	.....	94.8	0.129	.....	18.8	135.4	3.9
13	Aug. 8	7:12	.....	.....	48	8	0	8.8	0	4	8.9	4.3	97.6	0.133	.....	20.8	142.4	4.9
																		STATION NO. 75 – ANNAPOLIS RIVER
			Gauge height in feet†															
14	July 27/54	8:48	5.0	.....	68	.....	1.7	7.4	45	2	.....	.....	63.8	0.087	.....	.....	97.2	10.6

* Sampled at No. 1 highway bridge.
† Discharge records at Elmcroft, about 12 miles upstream from St. George, drainage area, 754 square miles.
e estimated.

† Analysis supplied by Alchem Limited, Burlington, Ont.

* Sampled at low tide.

* Sampled at low tide.

* Sampled at town intake.

* Sampled at No. 1 highway bridge.
† Collector's report of river level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at ST. GEORGE, N.B.*–(Concluded)																								
0.4	.....	0.04	0.0	0.05	0.0	.....	1.3	0.4	0.3	0.0	10.1	2.1	1.9	0.0	0.6	2.3	....	2.3	10.6	17.7	19.7	-2.7	12.5	1 2
near MUSQUASH, N.B.																								
0.4	.....	0.3	0.0	0.2	0.01	.....	3.2	0.3	.....	0.0 (0)	12.8 (12.6)	0.6	3.8	.....	0.8	3.6	.....	0.0 (0)	9.4 (11.7)	22.6	37.8	-2.7	12.5	3
near AMHERST, N.S.																								
1.1	.....	0.1	0.0	0.0	0.0	.....	5.8	0.8	.....	0.0 (0)	39.0 (40.4)	4.7	5.0	0.2	1.6	5.1	.....	0.6 (0)	32.6 (31.8)	54.8	9.8	-0.6	9.4	4
.....	0.9	.....	.....	0.1	.....	.....	.....	.....	.....	0.0	41.5	13.5	16.9	.....	.....	4.0	.....	6.0	40.0	.....	.....	-2.0	10.8	5
near WAVERLEY, N.S.																								
0.2	.....	0.06	0.01	Trace	0.0	.....	2.9	0.3	.....	0.0	5.9	4.5	4.0	Trace	0.2	1.8	.....	2.3	7.1	19.4	45.4	-3.3	13.0	6
at SHUBENACADIE, N.S.																								
7.4	.....	0.06	0.02	0.0	0.0	.....	16.4	2.5	.....	0.0	36.3	65.0	23.6	0.20	0.4	5.0	.....	62.0	91.8	163	27.3	-0.9	9.5	7
near BROOKLYN, N.S.*																								
747	.....	Trace	0.0	.....	0.0	.....	6,520	250	.....	0.0	113	1,654	11,807	.....	.....	6.2	.....	3,629	3,721	21,301	77.7	+0.6	6.8	8
near WINDSOR, N.S.*																								
5.1	.....	0.13	0.02	0.35	0.0	.....	32.8	3.3	.....	0.0	24.5	33.2	50.1	0.5	1.6	5.5	.....	28.6	48.7	156	63.4	-1.5	10.6	9
at UPPER FALMOUTH, N.S.																								
142	.....	0.04	0.0	0.26	0.0	.....	1,215	50.0	.....	0.0	50.0	314	2,167	.....	.....	7.5	.....	685	726	3,977	77.0	-1.1	11.2	10
near KENTVILLE, N.S.*																								
0.5	0.3	.....	0.0	0.0	Trace	.....	2.8	0.4	.....	0.0 (0)	7.1 (10.1)	1.6	3.0	.....	1.2	3.1	.....	0.3	6.1	18.0	46.4	-3.1	13.5	11
0.4	0.1	0.1	0.0	Trace	0.0	0.0	21.0	2.4	.....	3.6	49.4	3.3	6.5	0.2	0.8	11	....	0.0	11.4	76.4	75.7	-0.4	9.6	12
0.1	.....	0.03	0.0	0.08	0.0	0.0	22.0	2.7	.....	3.6	54.6	3.3	6.8	0.0	4.0	8.8	....	0.0	12.6	83.2	74.2	-0.2	9.2	13
at LAWRENCETOWN, N.S.*																								
1.6	.....	0.26	0.0	0.0	.....	.....	4.9	0.8	.....	0.0	28.1	13.8	4.9	0.2	0.0	5.7	....	10.1	33.1	56.6	24.1	-1.6	10.6	14

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (° F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105° C.	Suspended matter: Ignited at 550° C.	Residue on evaporation dried at 105° C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per day	Loss on ignition at 550° C.	Specific conductance $K \times 10^6$ at 25° C.	Calcium (Ca)
																		STATION NO. 75 – ANNAPOLIS RIVER
			Gauge height in feet†															
1	Aug. 25/54	5:23	5	.....	65	.....	1.4	7.6	55	2	.....	.....	.....	.....	.....	.....	106.7	11.2
2	Sept. 26	5:85	4	.....	58	22	1.7	7.6	45	1	.....	.....	.....	.....	.....	.....	111.8	12.3
3	Oct. 25	3:45	6	.....	48	17	2.0	7.0	100	12	19.3	15.7	73.6	0.100	.....	.....	65.1	5.7
4	Nov. 24	6:58	5	.....	40	13	7.4	6.4	70	4	.....	.....	.....	.....	.....	.....	60.3	5.1
5	Dec. 24	5:42	5	.....	40	11	3.4	6.7	80	7	.....	.....	.....	.....	.....	.....	46.4	3.1
6	Jan. 24/55	9:80	5	.....	35	8.2	2.9	6.9	80	0.2	.....	.....	53.6	0.073	.....	.....	64.6	5.9
7	Feb. 25	11:40	5	.....	35	7.2	1.2	7.1	65	5	.....	.....	.....	.....	.....	.....	49.8	3.8
8	Mar. 24	7:39	6	.....	38	.....	1.7	6.8	60	12	.....	.....	.....	.....	.....	.....	42.3	3.6
9	Apr. 25	8:37	5	.....	35	7.6	1.3	7.1	50	2	.....	.....	49.2	0.067	.....	.....	52.0	4.5
10	May 25	5:23	.....	.....	60	.....	1.6	7.2	55	3	.....	.....	.....	.....	.....	.....	73.0	7.4
11	June 22	16:27	3	.....	60	14	3.8	7.0	50	3	.....	.....	70.0	0.095	.....	.....	97.6	10.7

* Sampled at No. 1 highway bridge.
† Collector's report of river level.

STATION NO. 76 – BEAR RIVER

12	Aug. 24/54	20:267	.....	.....	63	.....	.....	6.9 (6.4)	90 (130)	4	10.3	4.9	3,974	5.40	.....	472	6,513	47.9

* Sampled at high tide.

STATION NO. 77 – SISSIBOO RIVER

			Water level†															
13	July 27/54	9:48	.....	.....	71	.....	6.2	6.0	160	2	.....	.....	45.4	0.062	.....	25.8	26.8	0.9
14	Aug. 24**	20:50	.....	.....	66	9.1	6.9	5.9 (6.2)	10 (180)	3	.....	.....	.....	.....	.....	.....	94.4	1.9
15	Aug. 27	6:21	10" over dam		68	.....	13	5.7	150	0.7	.....	.....	.....	.....	.....	.....	27.3	0.9
16	Sept. 24	7:87	.....	.....	60	.....	4.8	6.2	130	1	.....	.....	.....	.....	.....	.....	32.8	1.1
17	Oct. 25	10:70	6" over dam		50	10	18	5.7	150	7	7.1	0.3	79.6	0.108	.....	50.4	48.3	2.1
18	Nov. 25	12:55	4" over dam		44	20	32	4.9	140	1	.....	.....	.....	.....	.....	.....	39.4	1.2
19	Dec. 29	9:37	7" over dam		34	16	37	4.8	140	2	.....	.....	.....	.....	.....	.....	40.9	0.9
20	Jan. 25/55	8:79	6" nver dam		33	13	37	5.1	120	0	.....	.....	39.6	0.054	.....	18.4	37.5	1.1
21	Feb. 25	9:48	12" over dam		38	10	11	5.0	90	0.2	.....	.....	.....	.....	.....	.....	41.3	1.0
22	Mar. 25	7:38	12" over dam		38	.....	4.2	5.3	60	2	.....	.....	.....	.....	.....	.....	36.9	1.0
23	Apr. 25	8:45	4" over dam		52	9.8	4.8	5.3	70	2	.....	.....	36.4	0.050	.....	25.6	35.7	1.1
24	May 25	7:23	54" over dam		63	.....	3.1	5.6	75	0.8	.....	.....	.....	.....	.....	.....	33.8	1.5
25	June 25	13:24	Low	.....	68	18	1.2	6.3	75	0.8	.....	.....	36.4	0.050	.....	20.4	33.5	1.0

* Sampled about 5 miles upriver from Weymouth.
** Sampled at falls at slacktide.
† Collector's estimate of river level.

STATION NO. 78 – LAKE GEORGE

26	Aug. 24/54	20:219	.....	.....	64	.....	12	5.6 (5.5)	120 (30)	2	.....	.....	27.8	0.038	.....	8.0	46.3	1.7

* Sampled at town tap.

STATION NO. 79 – CARLETON RIVER

27	Aug. 25/54	19:238	.....	.....	67.5	11	4.0	6.3 (6.6)	35 (50)	0.8	.....	.....	30.4	0.041	.....	9.6	36.5	1.9

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at LAWRENCETOWN, N.S.* – (Concluded)																								
1.6	.....	.....	.....	.....	.....	.....	5.5	0.9	.....	0.0	31.2	15.8	6.1	....	0.4	2.4	.....	8.9	34.5	59.2	25.0	-1.4	10.4	1
1.7	.....	.....	.....	.....	.....	.....	5.2	1.2	.....	0.0	33.4	14.1	5.7	....	1.2	4.5	.....	10.3	37.7	62.4	22.4	-1.3	10.2	2
1.4	.....	0.22	0.0	0.0	0.0	.....	3.8	1.1	.....	0.0	12.1	11.1	5.8	0.2	1.2	6.3	.....	10.1	20.0	32.8	27.9	-2.6	11.2	3
1.3	.....	.....	.....	.....	.....	.....	3.6	0.7	.....	0.0	11.3	7.5	5.6	....	0.4	2.9	0.00	8.8	18.1	32.7	29.2	-3.3	13.0	4
0.9	.....	.....	.....	.....	.....	.....	3.6	0.5	.....	0.0	10.0	5.5	5.0	....	0.4	5.1	.....	3.2	11.4	29.0	39.3	-3.3	13.3	5
1.2	.....	0.15	0.0	0.18	0.0	.....	3.8	0.6	.....	0.0	14.6	9.5	5.4	0.0	0.8	5.4	.....	7.7	19.7	40.1	27.6	-2.7	12.3	6
1.1	.....	.....	.....	.....	.....	.....	3.1	0.6	.....	0.0	8.8	5.3	4.9	....	0.6	3.3	.....	6.8	14.0	12.9	31.3	-2.9	12.9	7
0.5	.....	.....	.....	.....	.....	.....	2.4	0.4	.....	0.0	6.9	3.9	4.3	....	1.2	3.8	.....	5.3	11.0	23.5	31.2	-3.2	13.2	8
0.8	.....	0.11	0.0	0.05	0.0	.....	3.0	0.5	0.0	0.0	9.8	5.4	4.7	0.0	0.8	5.8	.....	6.5	14.5	30.5	29.4	-2.7	12.5	9
0.9	.....	.....	.....	.....	.....	.....	3.7	0.8	0.25	0.0	16.0	9.3	4.5	....	1.2	3.4	.....	9.1	22.2	39.1	25.8	-2.2	11.6	10
1.5	.....	0.23	0.0	0.0	0.0	.....	4.7	0.8	0.15	0.0	25.0	14.1	5.7	0.0	1.4	5.9	.....	12.4	32.9	57.3	23.0	-1.9	10.8	11
at BEAR RIVER, N.S.*																								
12.9	.....	0.03	0.0	0.36	0.0	.....	1,072	56.0	.....	0.0	83.5	336	1,988	....	.....	2.0	.....	583	651	3,672	763	-1.3	9.5	12
near WEYMOUTH, N.S.*																								
0.5	.....	0.24	0.0	Trace	.....	.....	2.9	0.3	.....	0.0	3.9	2.5	4.5	....	Trace	2.1	.....	1.4	4.6	15.9	56.3	-4.8	15.2	13
0.7	.....	.....	.....	.....	.....	.....	9.6	0.7	.....	0.0	3.2	2.6	16.4	.....	Trace	2.5	.....	5.0	7.6	36.0	71.0	-4.9	15.5	14
										(0)	(6.4)													
0.3	.....	.....	.....	.....	.....	.....	3.1	0.5	.....	0.0	4.2	0.5	4.3	....	0.2	0.9	.....	0.0	3.2	12.7	64.4	-5.1	15.9	15
0.5	.....	.....	.....	.....	.....	.....	3.4	0.3	.....	0.0	4.5	3.4	4.6	....	Trace	6.0	.....	1.1	4.8	21.5	58.7	-4.4	15.4	16
1.4	.....	0.22	0.0	0.20	0.0	.....	4.6	0.8	.....	0.0	5.6	4.4	7.5	....	0.2	5.2	.....	6.4	11.0	29.4	42.5	-4.7	15.1	17
0.6	.....	.....	.....	.....	.....	.....	3.3	0.4	.....	0.0	1.6	3.4	5.6	....	0.4	5.3	0.00	4.2	5.5	21.0	54.6	-5.3	15.5	18
0.9	.....	.....	.....	.....	.....	.....	3.3	0.3	.....	0.0	1.5	3.3	6.3	....	Trace	4.0	.....	4.8	6.0	19.7	53.3	-6.5	17.8	19
0.6	.....	0.14	0.0	0.0	0.0	.....	3.5	0.4	.....	0.0	2.8	2.8	6.1	....	0.6	3.6	.....	2.9	5.2	16.9	56.0	-5.9	16.9	20
0.7	.....	.....	.....	.....	.....	.....	3.8	0.4	0.3	0.0	0.6	3.5	7.2	....	Trace	4.0	.....	4.9	5.4	20.9	58.3	-6.4	17.8	21
0.4	.....	.....	.....	.....	.....	.....	3.2	0.5	.....	0.0	0.5	3.0	6.0	....	0.4	3.5	.....	3.7	4.1	18.2	59.2	-6.0	17.3	22
0.5	.....	0.07	Trace	0.14	0.0	.....	3.2	0.5	0.3	0.0	0.6	3.6	5.9	0.0	0.6	1.8	.....	4.3	4.8	17.7	54.3	-6.0	17.3	23
0.3	.....	.....	.....	.....	.....	.....	3.2	0.5	0.3	0.0	0.7	3.5	5.2	....	1.2	1.0	.....	4.4	5.0	16.8	55.2	-5.6	16.8	24
0.5	.....	0.16	0.01	0.07	0.0	.....	3.4	0.4	0.3	0.0	1.6	3.6	5.1	....	0.2	1.3	.....	3.3	4.6	16.5	56.2	-5.8	16.9	25
near YARMOUTH, N.S.*																								
0.6	.....	0.03	Trace	0.04	0.04	.....	4.9	0.6	.....	0.0	2.9	4.0	8.9	0.1	0.6	1.1	.....	4.3 (5.5)	6.7 (9.6)	24.0	57.5	-5.2	16.0	26
near CARLETON, N.S.																								
0.3	.....	0.04	0.0	0.21	0.0	.....	4.0	0.4	.....	0.0	4.6	3.8	5.6	0.1	0.2	0.8	.....	2.2	6.0	19.7	53.1	-4.3	14.9	27

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105°C.	Suspended matter Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids) Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids) Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids) Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 80 – TUSKET RIVER
1	Aug. 25/54	19:238	600†	787†	67	.....	14	5.7 (6.2)	130 (160)	3	.....	.....	44.0	0.060	71.4	19.2	30.2	0.8
																		STATION NO. 81 – TUSKET RIVER
2	July 26/54	10:49	889†	933†	71	.....	5.5	6.0	140	2	.....	.....	40.4	0.055	96.9	22.0	30.1	0.9
3	Sept. 7	8:36	353	269	67	15	6.8	5.8	90	3	.....	.....	39.2	0.053	37.1	20.0	31.5	0.8
4	Sept. 27	10:64	164	269	61	.....	3.3	6.1	80	0	.....	.....	.....	.....	.....	.....	32.3	1.1
5	Oct.	No sample taken																
6	Nov. 25	5:55	11,950	2,450	45	16	35	4.9	70	2	.....	.....	.....	.....	.....	.....	33.5	1.0
7	Dec.	No sample taken																
8	Jan. 27/55	6:77	643	1,280	36	12	38	5.1	110	0.2	.....	.....	40.8	0.056	71.4	20.8	41.3	1.0
9	Feb.	No sample taken																
10	Mar. 28	8:39	2,320	2,020	39	8.9	11	5.2	60	0.2	.....	.....	35.6	0.048	221	25.6	38.9	1.1
11	Apr.	No sample taken																
12	May 26	6:22	469	827	61	8.6	3.9	5.7	55	0	.....	.....	40.8	0.056	52.0	18.8	45.0	1.5

† Discharge records at highway bridge between Springhaven and South Cannon, 18 miles from Yarmouth – drainage area, 392 square miles.
* Sampled at Tusket Falls.

																		STATION NO. 82 – CLYDE RIVER
13	Aug. 25/54	19:238	.....	.....	69.0	.....	3.8	5.0 (5.5)	220 (240)	2	.....	.....	47.6	0.065	.....	30.4	31.3	1.0

* Sampled at No. 3 highway bridge at low tide.

																		STATION NO. 83 – ROSEWAY RIVER
14	July 26/54	10:49	151†	189†	70	.....	5.2	6.1	280	2	.....	.....	54.0	0.073	21.9	36.2	27.9	1.3
15	Aug. 25	22:224	133	176	70	24	28	5.2 (5.1)	200 (200)	3	.....	.....	.....	.....	.....	.....	26.3	0.8
16	Aug. 30	8:44	73.0	176	68	.....	4.9	6.4	140	1	.....	.....	.....	.....	.....	.....	58.2	3.2
17	Sept. 29	8:62	39.0	59.0	60	.....	6.2	6.1	160	0	.....	.....	.....	.....	.....	.....	40.8	1.5
18	Oct. 30	11:130	1,030	540	55	27	.....	4.5	130	4	4.6	0.3	66.4	0.090	184	38.8	51.1	1.3
19	Nov. 24	6:58	1,170	1,430	50	20	.....	4.4	90	2	.....	.....	.....	.....	.....	.....	31.3	0.0
20	Dec. 27	8:39	900	1,000	46	16	.....	4.4	140	2	.....	.....	.....	.....	.....	.....	40.8	0.0
21	Jan. 26/55	7:78	276	582	40	15	.....	4.8	130	3	.....	.....	40.4	0.055	30.2	22.8	38.7	0.7
22	Feb. 22	14:51	755	544††	40	12	.....	4.9	110	0.8	.....	.....	.....	.....	.....	.....	39.2	0.6
23	Mar. 29	8:34	1,150	1,050	35	.....	12	5.0	90	0.9	.....	.....	.....	.....	.....	.....	33.7	0.5
24	Apr. 28	7:42	318	477	54	12	.....	5.1	90	2	.....	.....	34.4	0.047	29.6	24.0	32.3	0.9
25	May 25	10:31	171	343	69	.....	.....	4.7	130	2	.....	.....	.....	.....	.....	.....	32.2	0.8
26	June 28	10:21	112	178	75	21	1.3	7.3	130	0.8	.....	.....	51.6	0.070	15.6	26.8	50.7	5.7

* Sampled at No. 3 highway bridge.
† Discharge records at highway bridge, Lower Ohio; about six miles from Shelburne; drainage area, 190 square miles.
†† Ice conditions February 1 to 7, 1955.

																		STATION NO. 84 – JORDAN RIVER
27	Aug. 25/54	21:257	.....	.....	72	.....	47	5.1 (5.1)	200 (200)	0.8	.....	.....	50.0	0.068	.....	34.0	39.0	1.3

* Sampled at No. 3 highway bridge.

																		STATION NO. 85 – MERSEY RIVER
28	July 27/54	9:48	Normal	.....	71	.....	2.9	6.2	50	2	.....	.....	28.8	0.039	.....	13.4	23.3	1.0
29	Aug. 23	18:226	.....	.....	68	.....	2.3	6.6 (5.9)	50 (60)	3	.....	.....	.....	.....	.....	.....	23.4 (24.4)	0.7

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near QUINAN, N.S.																								
0.5	.....	0.09	0.0	0.13	0.0	.....	4.2	0.3	.....	0.0	4.4	2.5	4.7	.....	0.6	1.9	.....	0.5	4.1	17.9	61.2	−5.2	16.1	1
near TUSKET, N.S.*																								
0.9	.....	0.22	0.0	.....	.....	.....	3.2	0.7	.....	0.0	3.4	3.2	4.9	.....	0.2	2.1	.....	3.1	5.9	18.0	50.9	−4.9	15.8	2
0.6	.....	0.17	.....	0.13	.....	.....	3.5	0.4	.....	0.0	2.4	2.5	5.4	.....	0.4	1.7	.....	2.2	4.2	16.2	62.3	−5.3	16.4	3
0.5	.....	.....	.....	.....	.....	.....	3.4	0.2	.....	0.0	2.4	3.4	5.3	.....	0.3	1.2	.....	2.8	4.8	16.6	59.3	−4.9	15.9	4
																								5
0.8	.....	.....	.....	.....	.....	.....	3.2	0.4	.....	0.0	1.8	3.5	5.8	.....	0.4	3.4	0.00	4.3	5.8	19.4	52.6	−6.3	17.5	6
																								7
0.6	.....	0.15	0.0	0.12	0.0	.....	3.9	0.3	.....	0.0	2.9	2.4	7.2	.....	0.0	3.2	.....	2.6	5.0	20.3	57.4	−5.9	16.9	8
																								9
0.6	.....	0.09	0.01	0.11	0.0	.....	3.4	0.4	.....	0.0	1.1	2.9	6.2	0.0	0.2	3.7	.....	4.3	5.2	19.2	53.2	−6.1	17.4	10
																								11
0.6	.....	0.07	0.0	0.06	Trace	.....	3.5	0.4	0.3	0.0	1.2	3.9	6.4	0.0	0.6	1.9	.....	5.2	6.2	19.5	51.5	−5.5	16.9	12
at CLYDE RIVER, N.S.*																								
0.3	.....	0.17	0.0	0.13	0.0	.....	3.3	0.3	.....	0.0	2.2	1.6	5.3	.....	0.3	1.8	....	1.9	3.7	15.3	58.2	−6.5	17.4	13
near SHELBURNE, N.S.*																								
0.3	.....	0.26	0.0	.....	.....	.....	2.6	0.2	.....	0.0	4.1	1.2	3.9	.....	0.4	1.7	....	1.1	4.5	16.0	54.5	−4.6	15.3	14
0.3	.....	.....	.....	.....	.....	.....	3.0	0.3	.....	0.0	2.7	1.8	4.0	.....	0.4	0.5	....	1.0	3.2	12.4	64.3	−6.1	17.4	15
0.3	.....	.....	.....	.....	.....	.....	7.2	1.2	.....	0.0	7.3	3.2	12.1	.....	Trace	0.9	....	3.1	9.1	31.7	59.4	−3.7	13.8	16
0.6	.....	.....	.....	.....	.....	.....	4.8	0.2	.....	0.0	4.8	2.5	7.7	.....	0.3	0.9	....	2.3	6.2	20.9	62.0	−4.5	15.1	17
0.6	.....	0.13	Trace	0.18	0.0	.....	3.7	0.6	.....	0.0	0.0	2.8	7.5	.....	0.4	2.0	....	5.7	5.7	19.2	52.1	−6.7	17.9	18
0.8	.....	.....	.....	.....	.....	.....	2.8	0.5	.....	0.0	0.0	1.9	5.0	.....	Trace	2.2	0.00	3.3	3.3	13.2	60.7	.....	....	19
0.8	.....	.....	.....	.....	.....	.....	2.9	0.3	.....	0.0	0.0	2.7	6.1	.....	Trace	3.7	....	3.3	3.3	16.5	63.2	−6.9	18.2	20
0.4	.....	0.15	0.0	0.16	0.0	.....	3.6	0.6	.....	0.0	2.0	2.5	6.3	.....	Trace	3.2	....	1.8	3.4	18.6	59.6	−6.4	17.6	21
0.5	.....	.....	.....	.....	.....	.....	3.5	0.6	0.2	0.0	0.4	3.4	6.7	.....	Trace	2.9	....	3.3	3.6	18.4	63.8	−6.5	17.9	22
0.3	.....	.....	.....	.....	.....	.....	2.9	0.7	.....	0.0	0.7	1.9	5.2	.....	0.4	2.1	....	2.4	3.0	14.4	65.1	−6.5	17.6	23
0.2	.....	0.05	Trace	0.15	0.0	.....	2.6	0.7	0.4	0.0	0.1	2.3	5.5	0.0	0.4	2.2	....	3.0	3.1	15.1	53.7	−6.2	17.5	24
0.3	.....	.....	.....	.....	.....	.....	2.5	0.4	0.4	0.0	0.0	2.9	5.0	.....	0.6	2.0	....	3.2	3.2	14.5	59.2	−6.6	17.9	25
0.5	.....	0.14	0.0	0.07	0.0	.....	3.2	0.6	0.2	0.0	16.5	2.5	5.3	.....	0.4	1.2	....	2.8	16.3	27.7	26.8	−2.1	11.5	26
at JORDAN FALLS, N.S.*																								
0.4	.....	0.09	0.0	0.13	0.0	.....	4.3	0.4	.....	0.0	3.7	1.3	7.0	.....	0.2	0.9	....	1.9	4.9	17.8	59.8	−5.7	16.5	27
at MILTON, N.S.																								
0.4	.....	0.24	0.0	.....	.....	.....	2.4	0.3	.....	0.0	2.9	2.2	3.3	0.2	0.0	2.5	....	1.7	4.1	13.9	53.8	−4.7	15.6	28
0.4	.....	.....	.....	.....	.....	.....	2.5	0.3	.....	0.0	5.4	0.1	3.1	.....	0.4	0.6	....	0.0	3.4	10.7	59.1	−4.3	15.2	29
										(0.0)	(5.1)													

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet) On sampling date	Stream discharge (Second-feet) Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter Dried at 105°C.	Suspended matter Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids) Parts per million	Tons per acre-foot	Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																	STATION NO. 85 – MERSEY RIVER	
1	Aug. 27/54	6:25	Low	.....	67	.....	5.2	6.0	80	0	.....	.....	.....	.....	.....	.....	24.3	1.3
2	Sept. 27	4:53	Low	.....	60	.....	2.6	6.5	50	2	.....	.....	.....	.....	.....	.....	27.4	1.2
3	Oct. 12	8:41	Very low	.....	55	7.8	3.8	6.2	45	0.7	.....	.....	25.4	0.035	.....	12.2	27.9	0.8
4	Nov. 26	4:56	High	.....	43	9.5	5.8	6.0	55	5	.....	.....	.....	.....	.....	.....	25.4	1.0
5	Dec. 27	8:39	1,340†	.....†	36	8.9	19	5.4	60	2	.....	.....	.....	.....	.....	.....	29.0	0.8
6	Jan. 27/55	11:83	1,900	1,840	33	7.8	4	5.7	70	2	.....	.....	32.8	0.045	170	16.8	26.3	1.2
7	Feb. 28	8:45	1,770	.....	36	8.1	8	5.6	75	0.2	.....	.....	.....	.....	.....	.....	28.3	0.8
8	Mar. 28	4:35	11,880	2,160	36	.....	2,7	6.0	55	2	.....	.....	.....	.....	.....	.....	27.8	0.8
9	Apr. 23	10:34	2,170	1,980	50	8.8	8.8	5.6	60	2	.....	.....	31.6	0.043	185	20.0	26.7	0.7
10	May 28	9:30	2,250	1,770	63	.....	6.3	5.5	60	2	.....	.....	.....	.....	.....	.....	26.7	1.0
11	June	No sample taken		1,890														
12	July 4	4:15	1,520	1,760	74	15	2.4	6.2	50	2	.....	.....	30.8	0.042	127	15.6	28.0	1.2
																	STATION NO. 86 – MEDWAY RIVER	
13	July 26/54	9:49	27.9†	60†	70	.....	3.0	6.5	50	2	.....	.....	26.6	0.036	1.99	13.0	25.2	1.3
14	Aug. 23	18:240	66	130	65	.....	1.3	6.7 (5.9)	65 (90)	0	.....	.....	29.2	0.040	5.22	13.6	26.6	0.8
15	Aug. 30	4:31	17.6	130	64	.....	1,3	6.9	80	0	.....	.....	34.0	0.046	1.42	18.4	25.1	0.9
16	Sept. 27	4:53	18.7	38.3	60	.....	1.9	6.6	80	0.7	.....	.....	.....	.....	.....	.....	26.5	1.0
17	Oct.	No sample taken		225														
18	Nov. 26	4:66	314	669	44	15	6.5	5.1	90	4	0.5	0.0	13.2	0.018	I1.2	4.0	25.9	1.0
19	Dec.	No sample taken		758														
20	Jan. 26/55	7:78	105	373	33	7.5	4.1	6.0	70	2	.....	.....	27.2	0.037	7.7	14.4	26.2	1.1
21	Feb.	No sample taken		409														
22	Mar. 25	7:42	740	533	37	7.8	3.9	5.7	50	0	.....	.....	30.4	0.041	60.1	19.2	26.3	0.7
23	Apr.	No sample taken		264														
24	May 27	4:14	303	369	64	11	11	5.2	80	0.8	.....	.....	36.8	0.050	30.1	21.6	25.8	1.1

* Sampled at South Brookfield, N.S.
† Discharge records at highway bridge, ¼ mile below Ell Lake, 4 miles from Caledonia; drainage area, 136 square miles.

																	STATION NO. 87 – MEDWAY RIVER	
25	July 29/54	7:55	208†	297†	70	.....	1.9	6.5	40	2	.....	.....	24.8	0.034	14.0	12.2	23.1	0.7
26	Aug. 23	18:51	316	303	66.5	.....	3.2	6.4 (6.6)	35 (45)	0.8	.....	.....	.....	.....	.....	.....	25.2	1.1
27	Sept. 29	8:62	96	158	60	.....	2.3	6.5	30	0	.....	.....	.....	.....	.....	.....	24.2	0.9
28	Oct.	No sample taken		422														
29	Nov. 30	8:62	2,960	2,730	39	12	16	5.5	80	2	.....	.....	.....	.....	.....	.....	28.2	1.1
30	Dec.	No sample taken		2,920														
31	Jan. 29/55	9:81	905	1,770	32	10	7.9	5.9	90	2	.....	.....	35.6	0.048	86.0	16.0	29.3	1.3
32	Feb.	No sample taken		1,610														
33	Mar. 29	8:50	2,910	2,640	.....	8.0	5.5	5.7	50	2	.....	.....	31.6	0.043	248	18.4	26.3	0.9
34	Apr.	No sample taken		1,260														
35	May 30	7:21	662	1,130	67	17	2.9	6.0	40	2	.....	.....	28.4	0.039	51.1	19.6	26.2	1.2

* Sampled at Charleston bridge.
† Discharge records at Charleston.

																	STATION NO. 87A – HEBBS LAKE	
36	Sept. 4/58	8:20	.....	.....	.....	4.9	3.3	6.1	25	0	.....	.....	38.0	0.052	.....	18.4	28.5	0.8

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at MILTON, N.S. – (Concluded)																								
0.3	.....	.....	.....	.....	.....	.....	2.6	0.4	.....	0.0	3.3	.....	3.6	.....	0.2	0.3	.....	1.8	4.5	.....	53.1	-4.8	15.6	1
0.1	.....	.....	.....	.....	.....	.....	2.9	0.5	.....	0.0	4.6	0.3	4.3	.....	0.2	1.2	.....	0.0	3.4	13.0	61.0	-3.2	14.9	2
0.3	.....	0.23	0.0	0.05	.....	.....	3.0	0.5	.....	0.0	3.7	0.5	3.9	0.1	0.8	1.4	.....	0.2	3.2	15.2	62.8	-4.7	15.6	3
0.9	.....	.....	.....	.....	.....	.....	2.4	0.3	.....	0.0	3.7	1.6	4.3	.....	Trace	2.0	0.00	3.2	6.2	14.3	44.3	-4.9	15.8	4
0.5	.....	.....	.....	.....	.....	.....	2.7	0.4	.....	0.0	3.0	2.3	4.8	.....	Trace	1.9	.....	1.6	4.1	14.9	56.4	-5.5	16.4	5
0.2	.....	0.09	0.0	0.05	0.0	.....	2.6	0.3	.....	0.0	1.2	2.6	4.4	0.2	0.4	1.2	.....	2.8	3.8	13.8	54.9	-5.6	16.9	6
0.6	.....	.....	.....	.....	.....	.....	2.7	0.3	0.2	0.0	1.8	3.0	4.4	.....	0.2	1.6	.....	3.0	4.5	14.5	54.8	-5.6	16.8	7
0.4	.....	.....	.....	.....	.....	.....	2.5	0.5	.....	0.0	1.6	1.8	4.2	.....	0.8	1.9	.....	2.3	3.6	13.7	56.0	-5.3	16.6	8
0.5	.....	0.10	0.0	0.16	0.0	.....	2.5	0.4	0.2	0.0	2.2	1.0	3.9	0.0	1.8	1.8	.....	2.0	3.8	12.7	53.0	-5.7	17.0	9
0.4	.....	.....	.....	.....	.....	.....	2.2	0.3	0.3	0.0	1.5	2.1	3.9	.....	0.8	1.8	.....	2.9	4.1	13.5	51.4	-5.7	16.9	10
																								11
0.2	.....	0.26	0.0	0.06	0.0	.....	3.0	0.4	0.2	0.0	2.6	1.8	4.2	0.0	0.2	1.5	.....	1.7	3.8	14.1	60.0	-4.6	15.4	12
near CALEDONIA, N.S.* – Drainage area, about 136 square miles.																								
0.6	.....	0.32	0.0	.....	.....	.....	2.6	0.3	.....	0.0	5.8	1.5	2.9	0.2	Trace	1.6	.....	0.9	5.7	14.2	48.4	-4.0	14.5	13
0.4	.....	0.10	0.0	0.15	0.0	.....	2.8	0.4	.....	0.0	3.8	2.0	3.4	0.2	0.6	0.3	.....	0.5	3.6	13.1	54.1	-4.4	15.5	14
0.5	.....	0.23	.....	0.0	.....	.....	3.2	0.5	.....	0.0	6.1	0.5	4.0	.....	Trace	0.6	.....	0.0	4.3	13.3	58.4	-3.7	14.3	15
.....	.....	.....	.....	.....	.....	.....	2.9	0.5	.....	0.0	4.6	0.8	4.1	.....	0.6	0.4	0.00	.....	.....	.....	.....	-4.2	15.0	16
																								17
0.6	.....	0.10	0.0	0.04	0.0	.....	2.4	0.5	.....	0.0	5.7	0.7	4.2	0.0	0.4	2.1	.....	0.3	5.0	14.8	46.5	-5.7	16.5	18
																								19
0.5	.....	0.09	0.0	0.06	0.0	.....	2.6	0.3	.....	0.0	2.3	3.4	4.1	Trace	Trace	2.4	.....	2.9	4.8	15.7	49.9	-5.1	16.2	20
																								21
0.5	.....	0.09	0.0	0.09	0.0	.....	2.2	0.5	.....	0.0	1.2	3.4	3.3	0.0	0.4	4.3	.....	2.8	3.8	16.1	48.4	-5.7	17.1	22
																								23
0.2	.....	0.07	Trace	0.08	0.0	.....	2.2	0.4	0.3	0.0	1.1	1.0	4.6	0.0	0.4	1.6	.....	2.7	3.6	12.2	50.8	-6.1	17.4	24
near MILL VILLAGE, N.S.* – Drainage area, 560 square miles.																								
0.5	.....	0.02	0.0	.....	.....	.....	2.5	0.2	.....	0.0	3.9	1.7	3.1	0.4	0.3	1.0	.....	0.5	3.7	12.3	58.0	-4.3	15.1	25
0.2	.....	.....	.....	.....	.....	.....	2.6	0.3	.....	0.0 (0)	4.9 (5.0)	0.7	3.5	.....	Trace	1.4	.....	0.0	3.6	12.2	57.4	-4.4	15.2	26
0.5	.....	.....	.....	.....	.....	.....	2.3	0.2	.....	0.0	4.3	2.3	3.5	.....	0.7	1.0	.....	0.8	4.3	13.2	53.7	-4.3	15.1	27
																								28
0.7	.....	.....	.....	.....	.....	.....	2.5	0.3	.....	0.0	3.0	3.1	4.3	.....	0.4	2.6	0.01	3.1	5.6	16.5	47.5	-5.4	16.3	29
																								30
0.4	.....	0.16	0.02	.....	0.05	.....	2.6	0.3	.....	0.0	3.7	2.1	4.9	0.2	Trace	4.3	.....	1.9	4.9	18.6	46.9	-4.9	15.7	31
																								32
0.5	.....	0.03	0.0	0.06	0.0	.....	2.4	0.4	.....	0.0	1.8	1.6	4.2	0.1	0.4	2.9	.....	2.8	4.3	14.4	50.1	-5.4	16.5	33
																								34
0.3	.....	0.04	0.0	0.0	0.0	.....	2.4	0.4	0.3	0.0	2.0	2.8	3.4	0.0	0.4	0.5	.....	2.6	4.2	12.4	52.1	-5.0	16.0	35
near BRIDGEWATER, N.S.																								
0.6	.....	0.04	0.0	0.07	0.0	0.0	2.8	0.5	0.1	0.0	2.6	3.1	4.5	0.0	0.2	1.8	.....	2.4	4.5	15.7	52.2	-5.0	16.1	36

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated). (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 88 – La HAVE RIVER
1	July 27/54	9:57	465†	352†	70	.....	1.8	6.7	55	2	.....	.....	29.6	0.040	36.9	14.8	25.4	1.3
2	Aug. 21	19:228	369	476	69	.....	3.3	6.5 (7.2)	90 (130)	0.8	.....	.....	.....	.....	.....	.....	27.7	1.7
3	Aug. 27	6:21	239	476	65	.....	10	6.1	130	0.7	.....	.....	.....	.....	.....	.....	26.1	1.9
4	Sept. 27	10:53	161	194	50	.....	2.1	6.7	55	0	.....	.....	.....	.....	.....	.....	28.55	1.6
5	Oct. 28	7:67	1,250	822	46	14	6.0	6.1	70	3	6.0	0.0	48.8	0.066	164	26.0	31.75	2.0
6	Nov. 28	10:64	1,490	2,500	43	11	9.2	5.8	80	2	.....	.....	.....	.....	.....	.....	27.5	1.1
7	Dec. 28	7:38	1,800	2,520	37	12	7.8	5.9	60	6	.....	.....	.....	.....	.....	.....	27.4	1.3
8	Jan. 28/55	10:82	583	1,250	32	8.3	3.2	6.4	65	0	.....	.....	33.2	0.045	52.1	14.4	27.8	1.4
9	Feb. 27	5:36	1,630	1,720	38	.....	2.2	6.2	45	0.9	.....	.....	.....	.....	.....	.....	25.0	1.2
10	Mar. 29	8:50	2,930	2,390	34	8.0	5.3	5.7	50	2	.....	.....	31.6	0.043	250	18.4	26.3	0.9
11	Apr. 27	8:43	723	1,270	47	7.8	2.9	6.3	45	0	.....	.....	30.4	0.041	58.9	23.6	25.5	1.4
12	May 27	10:31	335	795	64	.....	2.5	6.3	40	2	.....	.....	.....	.....	.....	.....	26.2	1.9

† Discharge records at Bruhm's bridge, West Northfield, about 7 miles above Bridgewater, N.S.

																		STATION NO. 89 – MUSQUODOBOIT RIVER
13	July 30/54	6:54	55	74	72	.....	1.6	7.1	40	2	.....	.....	61.8	0.084	9.15	14.4	82.4	10.0
14	Aug. 30	17:241	38.5	175	67	13	0.4	7.8 (7.0)	65 (75)	0	.....	.....	50.0	0.068	5.19	16.4	69.9	6.0
15	Sept. 30	7:61	20.7	34.8	59	.....	1.3	7.4	25	0	.....	.....	.....	.....	.....	.....	109.9	13.0
16	Oct.	No sample taken		341														
17	Nov.	No sample taken		1,230														
18	Dec. 30	8:41	1,270	1,290	32	7.1	3.0	6.6	40	8	11.4	7.7	44.8	0.061	154	18.4	53.7	4.6
19	Jan. 1955	No sample taken		605														
20	Feb. 28	11:51	966	1,610	32	5.8	2.5	6.6	40	0.8	.....	.....	33.2	0.045	86.2	20.8	40.8	3.2
21	Mar.	No sample taken		1,190														
22	Apr. 30	10:18	1,740	522	49	.....	2.7	6.6	50	9	.....	.....	.....	.....	.....	.....	42.7	4.5
23	May	No sample taken		523														
24	June	No sample taken		281														
25	July 1	11:18	78	86	72	1.4	2.9	6.7	35	0.2	.....	.....	50.4	0.069	10.7	20.8	63.4	7.1

* Sampled at and discharge records at highway bridge, 6 miles from Musquodoboit Harbour.

																		STATION NO. 90 – ST. MARY'S RIVER
26	July 28/54	8:56	208†	193†	71	.....	2.5	6.5	60	2	.....	.....	33.2	0.045	18.6	15.8	28.6	1.2
27	Aug. 30	7:219	97	491	67.5	10	1.2	7.0 (7.0)	35 (40)	0	.....	.....	.....	.....	.....	.....	32.8	1.5
28	Sept. 29	13:62	46.6	96	55	.....	1.6	6.8	20	0	.....	.....	.....	.....	.....	.....	35.0	1.8
29	Oct. 28	7:67	2,500	1,370	45	10	5.8	6.3	45	6	3.8	1.0	42.8	0.058	288	24.8	39.0	1.6
30	Nov. 30	7:62	1,070	2,380	35	7.7	4.1	6.2	35	2	.....	.....	.....	.....	.....	.....	33.0	1.4
31	Dec. 30	5:36	3,400	3,040	35	7.1	0.4	6.0	30	3	.....	.....	.....	.....	.....	.....	28.7	1.1
32	Jan. 29/55	9:81	620	1,550	35	4.2	1.8	6.7	35	0.8	.....	.....	28.4	0.039	47.9	9.2	33.7	1.5
33	Feb. 28	8:45	1,610	2,900	35	4.5	1.6	6.3	35	0	.....	.....	.....	.....	.....	.....	27.0	1.1
34	Mar. 28	4:35	3,590	2,890	38	.....	2.1	6.3	30	0.3	.....	.....	.....	.....	.....	.....	24.1	1.0
35	Apr. 28	7:42	1,880	1,890	40	7.0	3.5	6.1	30	0	.....	.....	32.8	0.045	168	18.8	27.2	1.1
36	May 28	9:30	465	1,440	50	.....	2.4	6.4	30	2	.....	.....	.....	.....	.....	.....	28.5	1.8
37	June 28	10:13	279	564	62	.....	2.3	6.5	45	.....	.....	.....	.....	.....	.....	.....	28.2	1.5

† Discharge records at highway bridge at Stillwater, about 3 miles from Sherbrooke; drainage area 523 square miles.

																		STATION NO. 91 – BRAS d'OR RIVER
38	July 6/54	6:44	Normal†	.....	61	19	1.3	7.8	2	1	.....	.....	22,940	31.20	.....	3,095	31,754	251

* Sampled at Canal Locks.
† Collector's estimate of river level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near BRIDGEWATER, N.S. –Drainage area about 497 square miles.																								
0.5	.....	0.07	0.0	.....	.....	.....	2.6	0.2	.....	0.0	5.6	1.4	3.0	.....	0.2	1.8	.....	0.8	5.4	14.3	50.1	-3.9	14.5	1
0.4	.....	.....	.....	.....	.....	.....	2.7	0.3	.....	0.0	6.3	2.4	3.2	.....	0.4	1.7	.....	0.7	5.9	15.9	44.3	-3.9	14.3	2
0.3	.....	.....	.....	.....	.....	.....	2.5	0.4	.....	0.0	6.7	1.7	3.0	.....	0.2	2.3	.....	0.5	6.0	15.5	45.3	-4.2	14.5	3
0.5	.....	.....	.....	.....	.....	.....	3.0	0.4	.....	0.0	6.2	0.8	3.2	.....	0.4	1.3	.....	0.9	6.0	14.1	49.9	-3.8	14.3	4
0.4	.....	0.12	0.0	0.02	0.0	.....	2.6	0.5	.....	0.0	4.6	4.3	4.6	0.0	0.6	4.0	.....	2.8	6.6	21.4	42.7	-2.9	12.8	5
0.7	.....	.....	.....	.....	.....	.....	2.2	0.3	.....	0.0	3.7	3.4	3.9	.....	0.2	3.2	0.00	2.6	5.6	16.8	44.3	-5.0	15.8	6
0.5	.....	.....	.....	.....	.....	.....	2.2	0.3	.....	0.0	3.9	1.9	4.0	.....	Trace	3.6	.....	2.1	5.3	15.7	45.7	-4.8	15.5	7
0.6	.....	0.03	0.0	0.10	0.0	.....	2.5	0.3	.....	0.0	4.6	2.9	3.9	0.2	0.3	3.1	.....	2.2	6.0	17.5	43.9	-4.3	15.0	8
0.4	.....	.....	.....	.....	.....	.....	2.0	0.5	.....	0.0	2.1	3.4	3.2	.....	0.2	2.8	.....	2.9	4.6	14.7	45.1	-4.9	16.0	9
0.5	.....	0.03	0.0	0.06	0.0	.....	2.4	0.4	.....	0.0	1.8	1.1	4.2	0.1	0.4	2.9	.....	2.8	4.3	13.9	50.1	-5.4	16.5	10
0.4	.....	0.02	0.0	0.07	0.0	.....	2.1	0.3	0.2	0.0	3.7	2.0	3.2	0.0	0.8	2.0	.....	2.1	5.1	14.1	42.2	-4.4	15.1	11
0.1	.....	.....	.....	.....	.....	.....	1.9	0.4	0.3	0.0	3.2	3.6	2.9	.....	0.8	1.5	.....	2.6	5.2	14.7	42.2	-4.3	14.9	12
near MUSQUODOBOIT HARBOUR, N.S.*–Drainage area 257 square miles.																								
1.6	.....	0.07	0.0	.....	.....	.....	2.8	0.4	.....	0.0	12.7	20.7	3.4	.....	0.3	2.4	.....	21.2	31.6	47.9	16.0	-2.2	11.5	13
1.0	.....	0.20	.....	0.06	0.0	.....	2.5	0.3	.....	0.0	11.1	10.6	3.1	0.1	0.4	2.8	.....	10.0	19.1	32.6	21.2	-1.9	11.6	14
										(0)	(15.2)							(8.8)	(21.2)					
2.0	.....	.....	.....	.....	.....	.....	3.2	0.4	.....	0.0	18.3	25.5	3.9	.....	0.4	3.3	.....	25.5	40.5	60.7	14.5	-1.7	10.8	15
																								16
																								17
1.0	.....	0.06	0.0	0.02	0.0	.....	2.4	0.4	.....	0.0	7.4	10.6	4.4	0.1	0.4	2.4	.....	9.5	15.6	30.1	24.3	-3.3	13.2	18
																								19
0.8	.....	0.02	0.0	0.0	0.0	.....	2.3	0.4	0.6	0.0	6.1	5.0	3.5	Trace	0.8	1.5	.....	6.3	11.3	20.5	29.7	-3.6	13.8	20
																								21
0.3	.....	.....	.....	.....	.....	.....	2.0	0.4	0.3	0.0	6.6	3.5	3.0	.....	6.0	1.5	.....	7.1	12.5	24.4	25.1	-3.4	13.4	22
																								23
																								24
0.8	.....	0.09	0.0	0.04	0.0	.....	2.5	0.3	0.2	0.0	9.3	13.5	3.4	0.0	0.8	1.4	.....	13.4	21.0	12.5	20.0	-2.9	12.5	25
at STILLWATER, N.S.																								
0.7	.....	0.07	0.0	.....	.....	.....	3.1	0.4	.....	0.0	4.9	1.7	4.2	.....	1.2	1.9	.....	1.7	5.7	16.0	52.3	-4.1	14.7	26
0.8	.....	.....	.....	.....	.....	.....	3.3	0.3	.....	0.0	6.6	2.3	4.2	.....	0.4	1.4	.....	1.6	7.0	17.2	49.2	-3.3	13.6	27
0.8	.....	.....	.....	.....	.....	.....	3.4	0.4	.....	0.0	8.0	2.6	4.6	.....	0.4	1.8	.....	3.7	7.8	19.7	47.1	-3.6	14.0	28
1.0	.....	0.04	0.0	0.02	0.0	.....	3.4	0.5	.....	0.0	6.7	3.1	5.3	0.1	0.6	3.1	0.00	3.2	8.1	21.7	45.3	-4.2	14.7	29
0.6	.....	.....	.....	.....	.....	.....	2.9	0.3	.....	0.0	4.1	3.1	5.5	.....	0.2	2.3	0.00	2.6	6.0	18.3	49.8	-4.5	15.2	30
0.6	.....	.....	.....	.....	.....	.....	2.6	0.2	.....	0.0	3.5	2.8	4.8	.....	Trace	2.9	.....	2.3	5.2	16.7	50.8	-4.8	15.6	31
0.6	.....	0.02	Trace	0.0	0.0	.....	2.9	0.3	.....	0.0	5.4	2.0	5.0	0.1	0.2	2.7	.....	1.8	6.2	17.9	48.7	-3.9	14.5	32
0.5	.....	.....	.....	.....	.....	.....	2.6	0.3	0.2	0.0	1.8	3.0	4.3	.....	Trace	1.6	.....	3.3	4.8	14.3	52.1	-4.9	16.5	33
0.4	.....	.....	.....	.....	.....	.....	2.1	0.4	.....	0.0	2.6	2.8	3.4	.....	0.4	2.0	.....	2.0	4.1	13.8	49.6	-4.8	15.9	34
0.3	.....	0.01	0.0	0.12	0.0	.....	2.8	0.4	0.1	0.0	2.8	2.6	3.7	0.0	0.8	2.9	.....	1.7	4.0	16.1	54.0	-4.8	15.7	35
0.5	.....	.....	.....	.....	.....	.....	2.2	0.4	0.3	0.0	3.8	2.0	3.3	.....	0.6	0.8	.....	3.5	6.6	13.5	40.4	-4.2	14.8	36
0.4	.....	.....	.....	.....	.....	.....	.....	.....	0.1	0.0	4.8	.....	.....	.....	.....	.....	.....	1.4	5.4	.....	.....	.....	.....	37
at ST. PETERS, N.S.*																								
812	.....	0.08	0.0	.....	.....	.....	6,700	290	.....	0.0	98.3	1,656	11,648	.....	15	2.0	.....	3,888	3,968	21,423	77.1	+0.3	7.2	38

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 91 – BRAS d'OR RIVER
1	Aug. 5/54	5:14	Normal†	.....	65	.....	0.4	8.4	10	1	.....	.....	.....	.....	.....	.....	31,752	250
2	Sept. 2	6:41	Normal	.....	65	.....	0.6	8.2	6	0	.....	.....	.....	.....	.....	.....	32,114	243
3	Oct. 6	8:28	High	.....	55	22	1.1	7.9	6	0	.....	.....	23,458	31.95	.....	2,648	33,067	261
4	Oct. 14	7:48	Normal	.....	39	21	3.3	7.4	0	1	.....	.....	.....	.....	.....	.....	32,586	248
5	Nov. 9	6:83	Low	.....	45	17	1.1	7.7	10	1	.....	.....	.....	.....	.....	.....	30,487	243
6	Dec.	No sample taken																
7	Jan. 8/55	9:75	Normal	.....	38	19	1.0	7.7	10	0.9	.....	.....	.....	.....	.....	.....	29,975	231
8	Feb. 8	13:37	Normal	.....	31	14	1.8	7.8	12	3	.....	.....	.....	.....	.....	.....	21,912	166
9	Mar. 10	5:14	Normal	.....	35	.....	2.2	7.6	10	0	.....	.....	.....	.....	.....	.....	30,460	230
10	Apr. 19	6:59	.....	.....	42	.....	1.7	7.7	5	0	.....	.....	.....	.....	.....	.....	32,142	243
11	May 18	7:40	Normal	.....	45	.....	1.0	7.9	5	0.3	.....	.....	23,195	31.55	.....	3,360	32,987	254
12	June 7	10:28	Normal	.....	52	23	1.4	7.7	10	0.8	.....	.....	20,270	27.55	.....	3,075	29,540	221
																		STATION NO. 92 – LOCH LOMOND
13	Sept. 4/54	20:240	.....	.....	65	7.7	2.7	6.8 (7.5)	35 (40)	0	.....	.....	54.0	73.0	.....	16.8	74.1	6.7
																		STATION NO. 93 – BRAS d'OR LAKE
14	Sept. 4/54	20:194	.....	.....	66	12	.....	8.0 (8.0)	5	0	.....	.....	.....	.....	.....	.....	31,773	254
																		STATION NO. 94 – MIRA RIVER
			Time of Sampling															
15	Sept. 4/54	17:194	High tide		67	10	.....	7.3 (7.0)	40 (50)	0	.....	.....	1,969	2.68	.....	256	3,461	23.9
16	Oct.	No sample taken																
17	Nov. 8	7:84	High tide		48	7.2	2.8	6.6	45	1	.....	.....	425	0.578	.....	68.0	767.0	6.8
18	Dec.	No sample taken																
19	Jan. 10/55	4:30	Very high tide		38	6.5	1.6	6.8	50	0.8	.....	.....	276	0.376	.....	64.8	498.8	4.7
20	Feb.	No sample taken																
21	Mar. 8	7:48	High tide		34	5.3	2.4	6.4	40	7	11.3	9.9	118	0.160	.....	25.6	207.8	2.8
22	Apr.	No sample taken																
23	May 10	7:30	Very high tide		43	7.2	2.1	6.5	30	0.2	.....	.....	102	0.138	.....	32.8	165.2	2.4
24	June	No sample taken																
25	July 8	12:19	Medium tide		73	16	.....	7.3	20	5	11.9	6.8	27,260	37.10	.....	4,260	11,147	73.9
26	Aug.	No sample taken																
27	Sept. 13	8:22	High tide		65	.....	2.0	7.5	20	0.3	.....	.....	13,596	18.48	.....	1,850	20,662	153
																		STATION NO. 95 – SAND LAKE
28	Sept. 2/54	17:217	.....	.....	63.0	8.9	16	5.8 (5.0)	15	2	.....	.....	39.2	0.053	.....	11.6	62.8	1.4
																		STATION NO. 96 – MIDDLE RIVER
29	July 11/54	10:39	Very low†	.....	54	.....	2.6	7.4	5	1	.....	.....	128	0.174	.....	19.6	183.9	24.5
30	Aug.	No sample taken																

* Sampled at Canal Locks.
† Collector's estimate of river level.

* Sampled at town tap.

† Collector's estimate of river level.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at ST. PETERS, N.S.* – (Concluded)																								
765	.....	.....	.....	.....	.....	.....	6,700	285	.....	6.2	93.6	1,440	11,782	.....	15	1.3	.....	3,686	3,774	21,292	77.9	+1.1	6.2	1
735	.....	.....	.....	.....	.....	.....	6,440	250	.....	0.0	104	1,629	11,611	.....	.....	2.2	.....	3,541	3,626	20,961	78.1	+0.8	6.6	2
790	.....	0.01	0.0	0.0	0.0	.....	6,400	240	.....	0.0	102	1,695	11,725	.....	.....	1.4	.....	3,815	3,899	21,162	76.7	+0.5	6.9	3
757	.....	.....	.....	.....	.....	.....	6,280	220	.....	0.0	93.5	1,605	11,496	.....	.....	2.1	.....	3,654	3,731	20,665	77.4	-0.1	7.6	4
733	.....	.....	.....	.....	.....	.....	6,120	250	.....	0.0	96.4	1,616	11,233	.....	.....	2.3	2.3	3,543	3,622	20,240	77.1	+0.2	7.1	5
																								6
717	.....	.....	.....	.....	.....	.....	5,760	240	.....	0.0	92.3	1,479	10,629	.....	.....	1.6	.....	3,448	3,524	19,103	76.6	+0.2	7.1	7
472	.....	Trace	.....	.....	0.0	.....	3,920	160	.....	0.0	105	991	7,183	5.0	.....	1.7	.....	2,270	2,356	12,951	77.1	+0.3	7.4	8
695	.....	.....	.....	.....	.....	.....	5,700	240	.....	0.0	96.7	1,468	10,463	.....	.....	1.2	.....	3,356	3,435	18,845	77.8	+0.1	7.1	9
783	.....	.....	.....	.....	.....	.....	6,120	240	.....	0.0	98.0	1,566	11,189	.....	.....	.....	.....	3,743	3,823	20,188	76.4	+0.3	7.1	10
793	.....	Trace	0.0	.....	0.0	.....	6,060	240	.....	0.0	96.7	1,259	11,525	.....	.....	.....	.....	3,816	3,896	20,178	75.8	+0.5	6.9	11
720	.....	0.0	0.0	.....	0.0	.....	5,600	260	.....	0.0	85.7	1,382	10,149	.....	.....	.....	.....	3,440	3,510	18,374	76.0	+0.2	7.1	12
near LOCH LOMOND, N.S.																								
0.9	.....	0.0	0.0	0.0	0.0	.....	4.1	0.8	.....	0.0 (0)	10.2 (12.6)	10.9	6.7	0.1	1.2	1.1	.....	12.0 (12.0)	20.4 (22.3)	37.5	29.4	-2.9	12.6	13
at BIG POND, N.S.																								
746	.....	Trace	.....	.....	.....	.....	6,300	250	.....	0.0 (0)	99.0 (103)	1,590	11,563	.....	.....	0.8	.....	3,618	3,699	20,752	77.2	+0.7	6.6	14
at MARION BRIDGE, N.S.																								
71.9	.....	0.02	0.02	0.13	Trace	.....	570	22.4	.....	0.0 (0)	14.9 (15.2)	147	1,035	.....	.....	0.8	.....	343	355	1,879	76.3	-1.9	11.1	15
																								16
13.9	.....	0.04	0.0	0.03	0.0	.....	113	4.4	.....	0.0	7.3	30.5	207	0.0	0.6	1.1	.....	68.1	74.1	380	75.4	-3.2	13.0	17
																								18
8.9	.....	0.04	0.0	0.06	0.0	.....	71.2	2.9	.....	0.0	6.2	20.6	129	0.08	Trace	2.3	0.00	3.2	48.3	243	74.7	-3.3	13.4	19
																								20
3.6	.....	0.07	Trace	0.01	0.0	.....	26.2	1.2	.....	0.0	3.7	9.2	48.3	0.1	0.4	3.9	.....	18.8	21.8	97.7	70.3	-4.1	14.6	21
																								22
2.8	.....	Trace	0.0	0.11	0.0	.....	21.6	1.1	0.1	0.0	4.1	8.5	37.9	0.0	0.4	1.7	.....	14.1	17.5	78.5	70.7	-4.0	14.5	23
																								24
232	.....	Trace	0.0	.....	0.0	.....	1,980	76.0	.....	0.0	29.4	486	3,397	0.0	.....	.....	.....	1,115	1,139	6,260	77.7	-1.0	9.3	25
						Lithium																		26
450	.....	0.0	.....	.....	0.0	5.4	3,870	153	.....	0.0	54.5	952	6,997	....	5.4	.....	.....	1,188	2,233	12,602	77.5	-0.4	8.3	27
at GLACE BAY, N.S.*																								
1.1	.....	0.07	0.03	0.19	0.01	.....	6.5	0.5	.....	0.0	5.9	4.5	11.9	0.05	0.2	0.7	.....	3.2	8.0 (8.9)	30.0	58.8	-4.8	15.4	28
near MIDDLE RIVER, N.S.																								
2.3	.....	0.08	0.0	.....	.....	.....	7.6	0.8	.....	0.0	42.4	42.2	8.3	.....	0.6	7.9	.....	35.9	70.7	115	18.7	-1.1	9.6	29
																								30

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 96 – MIDDLE RIVER
1	Sept. 1/54	17:239	.....	.....	60	5.3	0.7	7.7 (8.0)	10	0	.....	.....	52.0	0.071	.....	8.4	76.6	7.2
2	Sept. 20	11:60	Medium†	.....	54	.....	0.9	7.8	3	2	.....	.....	.....	.....	.....	.....	141.8	17.5
3	Oct.	No sample taken																
4	Nov. 20	10:62	Medium	.....	47	2.6	3.1	7.1	10	1	.....	.....	.....	.....	.....	.....	105.7	11.3
5	Dec.	No sample taken																
6	Jan. 12/55	13:34	High	.....	38	1.3	1.0	7.5	10	0	.....	.....	77.6	0.106	.....	28.8	100.6	10.6
7	May 4	9:21	High	.....	41	.....	1.3	7.4	5	0	.....	.....	.....	.....	.....	.....	88.5	9.9
																		STATION NO. 97 – MARGAREE RIVER, NORTH EAST BRANCH
8	Sept. 1/54	17:239	174†	152†	59.5	5.3	0.9	7.6 (7.9)	2	0	.....	.....	139.6	0.190	65.5	15.6	233.1	7.7
																		STATION NO. 98 – MARGAREE RIVER, NORTH EAST BRANCH
9	Oct. 14/54	6:39	317†	473†	55	6.3	1.4	7.4	35	0	.....	.....	144	0.196	.....	18.2	241.6	15.4
10	June 7/55	10:28	565	498	53	12	2.0	7.1	15	0	.....	.....	114	0.156	.....	21.6	188.2	11.1
11	Sept. 1/55	26:34	723	708	61	.....	2.1	7.2	10	0	.....	.....	182	0.248	.....	19.2	307.5	19.1
																		STATION NO. 99 – MARGAREE RIVER, SOUTH WEST BRANCH
12	July 14/54	7:49	159†	173†	76	13	2.0	7.4	10	2	.....	.....	143	0.195	61.4	26.2	225.5	17.2
13	Sept. 1	17:239	117	105	63	6.5	1.0	7.7 (7.9)	6	4	6.0	3.9	115	0.156	36.2	13.6	185.9	16.2
14	Oct. 14	8:39	99	133	58	5.3	1.0	7.7	20	7	.....	.....	.....	.....	.....	.....	252.0	21.5
15	June 7/55	15:28	479	413	56	11	1.8	7.3	15	2	.....	.....	106	0.144	43.7	24.0	170.1	14.3
16	Sept. 14	13:21	103	156	64	.....	3.2	7.2	5	0	.....	.....	149	0.203	41.5	18.4	240.0	20.9
																		STATION NO. 100 – EAST RIVER
17	Sept. 8/54	16:236	.....	.....	61.5	2.5	1.3	7.5 (7.5)	10	0	.....	.....	90.8	0.123	0.34	22.4	144.1	16.7
																		STATION NO. 101 – MIDDLE RIVER
18	Sept. 8/54	16:236	.....	.....	64	2.4	1.6	7.4 (7.4)	5	0	.....	.....	130	0.177	.....	29.6	219.7	10.1
																		STATION NO. 102 – TATAMAGOUCHE RIVER
19	Sept. 8/54	19:245	.....	.....	65	4.1	0.9	7.9 (8.4)	15	.....	.....	.....	240	0.326	.....	26.8	422.9	12.6
																		STATION NO. 103 – PHILIP RIVER
20	Sept. 10/54	46:243	.....	.....	63	4.3	1.3	7.4 (7.4)	15	1	.....	.....	335	0.455	.....	26.4	591.8	24.1
																		STATION NO. 104 – HILLSBOROUGH RIVER
21	July 15/54	6:48	Time of sampling† Medium tide		68	.....	.....	7.5	20	1	.....	.....	16,240	22.10	.....	2,468	22,677	192

† Collector's estimate of river level.

† Discharge records near highway bridge at Frizzleton, N.S., drainage area, 151 square miles.

† Discharge records near highway bridge at Frizzleton, N.S.; drainage area, 151 square miles.

† Discharge records at highway bridge at Upper Margaree, N.S.; drainage area 143 square miles.

† As reported by collector.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
near MIDDLE RIVER, N.S.–(concluded)																								
1.0	.....	0.05	0.0	0.03	0.0	.....	4.7	0.5	.....	0.0 (0)	21.5 (22.7)	6.3	6.2	Trace	0.6	8.4	....	4.5 (4.8)	22.1 (23.4)	45.6	30.8	-1.6	10.9	1
1.5	.....	.....	.....	.....	.....	.....	6.3	0.6	.....	0.0	34.7	20.5	8.8	.....	0.6	7.4	....	21.3	49.8	80.3	21.3	-1.0	9.8	2
1.5	.....	.....	.....	.....	.....	.....	5.1	0.6	.....	0.0	23.9	15.0	7.8	.....	1.6	7.2	0.00	14.8	34.4	61.9	24.0	-1.9	10.9	3 4 5
1.2	.....	0.01	0.0	0.0	0.0	.....	4.4	0.6	.....	0.0	20.0	16.0	7.9	0.02	0.6	5.5	.....	15.0	31.4	56.7	23.0	-1.7	10.9	6
1.1	.....	.....	.....	.....	.....	.....	3.7	0.5	0.1	0.0	19.3	12.4	5.4	.....	0.8	5.2	.....	13.4	29.2	48.5	21.2	-1.8	11.0	7
near NORTH EAST MARGAREE, N.S.																								
6.9	.....	0.07	0.0	0.03	0.0	.....	23.3	0.5	.....	0.0 (0)	22.1 (26.5)	27.2	37.8	Trace	0.4	9.8	.....	29.5 (27.1)	47.6 (48.8)	125	51.1	-1.7	11.0	8
near MARGAREE FORKS, N.S.																								
1.5	.....	0.06	0.0	0.03	.....	.....	27.4	0.7	.....	0.0	20.4	23.3	42.8	0.1	0.4	7.4	.....	27.9	44.6	130	56.7	-2.3	10.6	9
1.0	.....	0.0	0.0	0.07	0.0	.....	20.2	0.8	0.0	0.0	15.8	19.8	31.3	0.0	0.6	6.1	.....	18.8	31.8	98.8	56.9	-2.1	11.3	10
0.7	.....	Trace	0.0	0.04	Trace	0.15	35.2	0.8	0.1	0.0	22.7	31.0	56.1	0.0	0.4	6.8	.....	31.9	50.5	161	59.8	-1.7	10.6	11
near MARGAREE FORKS, N.S.																								
3.1	.....	0.08	0.0	.....	.....	.....	17.5	0.9	.....	0.0	31.5	31.5	25.1	0.15	1.0	4.9	.....	29.8	55.6	117	40.1	-1.4	9.8	12
1.7	.....	0.08	.....	0.03	0.0	.....	15.0	0.6	.....	0.0 (0)	29.5 (30.3)	25.0	21.1	Trace	0.4	8.8	.....	23.2 (24.0)	47.4 (48.8)	103	40.1	-1.2	10.1	13
2.3	.....	.....	.....	.....	.....	.....	21.1	0.7	.....	0.0	31.2	39.6	33.5	.....	0.4	5.2	.....	37.5	63.1	140	41.7	-1.0	9.9	14
1.4	.....	0.0	0.0	0.02	0.01	.....	13.8	0.8	0.1	0.0	23.2	23.4	20.9	0.05	0.8	3.8	.....	22.4	41.4	90.7	41.3	-1.7	10.7	15
1.2	.....	0.01	Trace	0.0	Trace	0.1	20.6	1.2	0.0	0.0	30.5	34.1	30.7	0.0	Trace	4.3	.....	32.1	57.1	128	43.3	-1.5	10.2	16
at STELLARTON, N.S.																								
2.2	.....	0.0	0.0	0.0	0.0	.....	5.2	0.8	.....	0.0 (0)	26.6 (27.9)	30.4	6.7	0.1	0.8	4.4	.....	28.9 (28.1)	50.7 (50.9)	80.4	17.9	-1.4	10.3	17
at WESTVILLE, N.S.																								
2.5	.....	0.05	0.0	0.0	0.0	.....	26.6	0.8	.....	0.0 (0)	22.9 (24.1)	10.4	46.5	0.0	0.8	4.2	.....	16.7 (18.5)	35.5 (38.2)	113	61.3	-1.8	11.0	18
near TATAMAGOUCHE, N.S.																								
6.3	.....	Trace	0.01	0.02	0.02	.....	52.8	3.0	.....	0 (2.5)	45.0 (42.8)	13.4	89.9	0.0	0.8	17	.....	20.4 (17.6)	57.3 (56.9)	218	65.2	-0.9	9.7	19
at OXFORD, N.S.																								
1.6	.....	0.04	0.01	0.02	0.0	.....	84.5	1.5	.....	0.0 (0)	21.0 (24.0)	42.7	135	0.05	0.4	9.4	.....	49.5 (47.1)	66.7 (66.8)	310	72.9	-1.5	10.4	20
at MOUNT STEWART, P.E.I.																								
549	.....	0.07	0.0	.....	.....	.....	4,280	290	.....	0.0	109	1,100	7,759	.....	5.0	3.7	.....	2,594	2,684	14,211	75.3	0.0	7.5	21

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream-discharge (Second-feet): On sampling date	Stream-discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105° C.	Suspended matter: Ignited at 550° C.	Residue on evaporation dried at 105° C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105° C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 104 – HILLSBOROUGH RIVER
			Time of sampling†															
1	Aug. 1954	No sample taken																
2	Sept. 11	26:208	High tide		63	18	.....	7.6	20	15	.....	.....	.....	.....	.....	.....	26,315	202
3	Sept. 16	5:48	Low tide		60	.....	.....	7.7	30	15	.....	.....	.....	.....	.....	.....	27,528	207
4	Oct.	No sample taken																
5	Nov. 15	9:29	Low tide		35	18	.....	7.6	35	35	.....	.....	.....	.....	.....	.....	23,173	166
6	Dec.	No sample taken																
7	Jan. 14/55	10:31	One quarter tide		34	14	.....	7.7	40	8	.....	.....	.....	.....	.....	.....	14,265	107
8	Feb.	No sample taken																
9	Mar. 21	4:58	Medium tide		38	11	.....	7.4	40	9	18	12	6,173	8.39	.....	1,334	9,164	67.2
10	Apr.	No sample taken																
11	May 15	10:43	Medium tide		47	.....	.....	7.7	25	10	9.4	6.7	15,124	20.75	.....	2,540	22,481	168
12	June 16	18:26	High tide		66	24	.....	7.8	15	3	16.3	5.7	19,095	25.92	.....	2,725	27,714	213

† As reported by collector.

STATION NO. 105 – LAKE ST. GEORGE

13	Sept. 14/53	35:121	.....	.....	.....	.....	1.3	8.0	10	3	.....	.....	96.4	0.131	.....	23.4	149.7	21.7

STATION NO. 106 – CORNER BROOK RIVER

			Water level†															
14	Nov. 25/53**	9	.....	.....	.....	.....	0.9	7.7	.....	.....	.....	.....	70.0	0.095	.....	.....	.....	16
15	Mar. 23/54**	10	.....	.....	.....	.....	3.5	6.8	.....	3	.....	.....	.....	.....	.....	.....	.....	9.6
16	July 15/55	10:25	14 ft 5 in.	.....	61.5	13	0.9	7.6	30	0	.....	.....	46.4	0.063	.....	19.2	59.1	7.2
17	Aug. 8	15:29	14 ft	.....	61	.....	1.0	7.7	35	0	.....	.....	.....	.....	.....	.....	98.1	10.1
18	Sept. 3	11:27	14 ft 5 in.	.....	59	.....	1.8	7.6	35	0	.....	.....	.....	.....	.....	.....	92.03	14.6
19	Sept. 29**	12	.....	.....	.....	.....	4.4	7.0	.....	2	Trace	.....	60.0	0.082	.....	.....	.....	15.2
20	Oct. 10	10:51	14 ft 10 in.	.....	49	13	1.6	7.5	40	0	.....	.....	54.0	0.073	.....	24.4	74.82	9.1
21	Nov. 8	11:22	14 ft 6 in.	.....	44	.....	1.9	7.5	35	0.3	.....	.....	.....	.....	.....	.....	81.65	10.7
22	Dec. 9	18:73	14 ft 1 in.	.....	34	.....	2.2	7.4	30	4	.....	.....	.....	.....	.....	.....	81.19	10.9
23	Jao. 10/56	13:100	15 ft 7 in.	.....	34	6.6	1.5	7.5	50	0	.....	.....	55.2	0.075	.....	19.2	75.77	9.6
24	Feb. 9	29:93	14 ft 9 in.	.....	34	.....	1.3	7.5	35	0	.....	.....	.....	.....	.....	.....	66.22	8.1
25	Feb. 17	20:70	.....	.....	38	.....	2.8	6.4	50	0	.....	.....	.....	.....	.....	.....	30.91	2.0
26	Mar. 14	43:65	12 ft 9 in.	.....	34	.....	2.1	7.3	35	0	.....	.....	.....	.....	.....	.....	66.89	8.2
27	Apr. 17	31:49	9 ft 4 in.	.....	36	7.7	1.8	7.3	35	0.2	.....	.....	48.0	0.065	.....	0.8	62.73	7.7
28	May 10	20:26	9 ft 10 in.	.....	39	.....	1,3	7.6	30	0	.....	.....	.....	.....	.....	.....	87.46	10.6
29	June 11	9:16	17 ft 1 in.	.....	46	13	1.4	7.4	40	0	.....	.....	40.8	0.055	.....	8.4	58.67	7.4
30	July 3	15:20	about 25 ft	.....	52	8.4	2.3	7.3	35	0	.....	.....	57.6	0.078	.....	20.8	67.0	8.7
31	July 26**	12	.....	.....	.....	.....	8.8	6.5	20	2	.....	.....	70	0.095	.....	.....	.....	8.8

* Sampled at Pulp Mill iotake.

** Analysis supplied by Alchem Ltd., Burlington, Ootario.

† Collector's estimate on river level.

STATION NO. 107 – GRAND RIVER (LAKE)

32	July 2/55	10:17	370.4†	.....	54	.....	1.3	7.2	20	0	.....	.....	36.0	0.049	.....	16.4	40.19	4.3
33	Aug. 2	9:35	367.5	.....	57	.....	1.4	7.1	20	0	.....	.....	.....	.....	.....	.....	37.38	4.1
34	Sept. 2	6:21	369.9	.....	57	.....	1.2	7.3	25	0	.....	.....	.....	.....	.....	.....	37.48	4.5
35	Oct. 3	9:176	369.5	.....	52	4.8	1.1	7.3	30	3	.....	.....	37.2	0.050	.....	16.4	38.06	4.5
36	Nov. 2	13:97	370.5	.....	44	.....	1.3	7.2	25	0	.....	.....	.....	.....	.....	.....	35.81	4.1
37	Dec. 2	12:101	369.8	.....	39	.....	1.3	7.3	20	0	.....	.....	.....	.....	.....	.....	36.74	4.2
38	Jan. 3/56	14:107	370.1	.....	34	4.6	1.7	7.1	30	0	.....	.....	32.8	0.045	.....	12.8	37.84	3.9

† Controlled water level at Deer Lake powerhouse, forebay.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at MOUNT STEWART, P.E.I. – (Concluded)																								
																								1
638	.....	0.05	.....	.....	.....	.....	5,100	200	.....	0.0	111	1,278	9,363	.....	.....	2.8	.....	3,135	3,226	16,838	76.0	+0.1	7.2	2
627	.....	.....	.....	.....	.....	.....	5,300	200	.....	0.0	119	1,314	9,389	.....	.....	3.3	.....	2,996	3,094	17,099	77.4	+0.2	7.3	3
																								4
507	.....	.....	.....	.....	.....	.....	4,140	160	.....	0.0	100	1,099	7,517	.....	.....	4.3	1.5	2,418	2,501	13,643	76.9	0.0	7.6	5
																								6
306	.....	0.04	.....	.....	0.0	.....	2,550	104	.....	0.0	72.5	642	4,588	1.0	.....	2.4	.....	1,468	1,527	8,337	76.9	-0.2	8.1	7
																								8
191	.....	0.02	0.0	0.45	0.0	.....	1,512	64.0	.....	0.0	65.6	346	2,805	.....	.....	3.6	.....	898	952	5,021	76.1	-0.8	9.0	9
																								10
518	.....	0.03	0.0	.....	Trace	.....	4,000	170	.....	0.0	94.8	1,020	7,367	.....	.....	.....	.....	2,473	2,551	13,091	75.8	+0.2	6.3	11
669	.....	0.02	Trace	.....	0.0	.....	5,320	280	.....	0.0	120	1,373	9,649	.....	.....	.....	.....	3,184	3,282	17,562	76.0	+0.5	6.8	12
near CORNER BROOK, NFLD.																								
3.3	.....	0.02	.....	.....	.....	.....	4.4	0.9	.....	0.0	78.6	4.4	6.5	0.1	1.4	3.2	.....	3.6	68.0	84.6	12.2	-0.3	10.6	13
at CORNER BROOK, NFLD.*																								
1.2	0.7	.....	.....	0.0	.....	.....	.....	.....	0.0	0.0	42.7	6.8	6.1	.....	.....	2.3	.....	10.0	45	.....	.....	-0.9	9.5	14
1.4	0.2	.....	.....	0.0	.....	.....	.....	.....	0.0	0.0	31.7	0	6.1	.....	.....	4.4	.....	4.0	30	.....	.....	-2.2	11.2	15
0.9	.....	0.02	0.0	0.24	0.33	.....	2.0	0.4	0.0	0.0	23.2	2.6	4.2	0.0	0.4	1.7	.....	2.7	21.7	31.4	15.3	-1.5	10.6	16
1.7	.....	.....	.....	.....	.....	.....	2.3	0.4	0.1	0.0	32.5	3.5	3.9	.....	0.2	1.5	.....	5.5	32.2	39.7	13.2	-1.2	10.1	17
0.6	.....	.....	.....	.....	.....	Li. 0.0	2.5	0.4	0.1	0.0	44.4	1.9	4.4	....	0.2	2.0	.....	2.5	38.9	48.5	12.1	-1.0	9.6	18
2.4	0.2	.....	.....	0.1	.....	.....	.....	.....	0.1	0.0	46.4	0	6.1	.....	.....	2.1	.....	10.0	48	.....	.....	-1.6	10.2	19
1.4	.....	0.03	0.0	0.05	0.08	0.0	2.4	0.4	0.1	0.0	30.5	3.3	4.0	0.0	1.2	1.9	.....	3.5	28.5	38.8	15.1	-1.5	10.5	20
1.9	.....	.....	.....	.....	.....	.....	2.4	0.4	0.1	0.0	37.3	2.0	4.3	....	1.2	1.9	.....	3.9	34.5	43.2	13.0	-1.4	10.3	21
1.7	.....	.....	.....	.....	.....	.....	2.5	0.3	0.0	0.0	34.1	2.7	5.8	....	1.2	2.2	.....	6.2	34.2	44.1	13.6	-1.6	10.6	22
1.6	.....	0.03	0.0	0.03	Trace	0.0	2.8	0.4	0.1	0.0	30.2	3.4	5.6	0.0	0.6	2.4	.....	5.7	30.5	41.3	16.3	-1.5	10.5	23
1.4	.....	.....	.....	.....	.....	.....	2.5	0.4	0.1	0.0	25.2	3.1	4.7	....	1.4	2.8	0.0	5.3	26.0	36.8	17.0	-1.7	10.9	24
0.6	.....	.....	.....	.....	.....	.....	2.1	0.4	0.2	0.0	4.3	3.1	3.7	....	1.2	2.6	0.0	4.0	7.5	17.8	36.4	-4.1	14.5	25
1.2	.....	.....	.....	.....	.....	.....	2.5	0.4	0.1	0.0	25.1	3.0	4.3	....	2.4	2.4	.....	4.8	25.4	36.8	17.3	-1.8	10.9	26
1.1	.....	0.04	0.0	0.05	0.07	0.0	2.5	0.4	0.1	0.0	23.8	2.6	4.8	0.0	1.2	2.2	.....	4.2	23.7	34.3	18.0	-1.9	10.9	27
1.7	.....	.....	.....	.....	.....	.....	3.5	0.4	0.0	0.0	33.9	5.4	4.9	....	1.2	2.2	.....	5.6	33.4	46.6	18.3	-1.3	10.2	28
1.0	.....	0.06	0.0	0.09	0.0	0.1	2.4	0.4	0.2	0.0	21.9	3.2	4.4	0.0	4.3	2.1	.....	4.6	22.6	36.3	17.7	-1.8	11.0	29
1.2	.....	0.04	0.0	0.08	0.0	0.0	2.4	0.4	0.2	0.0	28.0	2.6	4.2	0.0	1.6	2.0	.....	3.6	26.6	37.0	15.6	-1.8	10.9	30
1.5	0.2	.....	.....	0.0	.....	.....	.....	.....	0.1	0.0	31.7	2.7	9.7	....	.....	2.0	.....	2.0	28	.....	.....	-2.5	11.5	31
at DEER LAKE, NFLD.																								
0.3	.....	0.05	0.0	0.04	0.0	.....	1.9	0.3	0.2	0.0	12.2	2.1	2.9	0.0	0.4	3.8	0.0	2.0	12.0	22.1	24.6	-1.4	10.0	32
0.4	.....	.....	.....	.....	.....	.....	1.9	0.4	0.0	0.0	11.7	2.0	2.6	....	0.6	3.0	.....	2.3	11.9	20.8	25.0	-2.6	12.3	33
0.4	.....	.....	.....	.....	.....	Li. 0.0	2.0	0.2	0.0	0.0	13.3	2.1	2.7	....	0.6	2.8	.....	2.0	12.9	21.9	24.9	-2.4	12.1	34
0.3	.....	0.02	0.0	Trace	0.0	0.0	2.7	0.3	0.0	0.0	12.9	2.2	3.1	0.0	0.6	4.0	.....	1.9	12.5	23.6	27.1	-2.4	12.1	35
0.5	.....	.....	.....	.....	.....	.....	1.9	0.3	0.0	0.0	12.8	.....	2.8	....	0.8	3.2	.....	1.8	12.3	....	24.6	-2.5	12.2	36
0.4	.....	.....	.....	.....	.....	.....	2.1	0.3	0.0	0.0	12.6	2.5	2.7	....	1.6	3.3	.....	1.8	12.1	23.3	26.7	-2.4	12.1	37
0.6	.....	0.0	0.0	0.03	0.0	0.0	2.0	0.4	0.2	0.0	12.7	2.2	3.3	0.0	0.4	3.3	.....	1.8	12.2	22.4	25.2	-2.6	12.3	38

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
STATION NO. 107 – GRAND RIVER (LAKE)																		
1	Feb. 3/56	31:68	370.1†	.....	35	4.6	1.1	7.3	25	0	.....	.....	.....	.....	.....	.....	36.05	4.1
2	Mar. 2	19:71	370.0	.....	34	.....	1.0	7.3	25	0	.....	.....	.....	.....	.....	.....	36.69	4.5
3	Apr. 3	41:52	369.6	.....	34	6.4	1.0	7.3	20	3	.....	.....	52.0	0.071	.....	22.0	35.56	4.4
4	May 2	20:33	370.0	.....	37	.....	1.9	7.0	20	3	.....	.....	.....	.....	.....	.....	37.73	4.2
5	June 1	10:21	369.9	.....	48	.....	1.9	7.0	20	0.2	.....	.....	.....	.....	.....	.....	36.88	3.9
6	Sept. 27/56	14:19	.....	.....	49	12	1.4	7.2	20	4	3.2	0.6	42.0	0.057	.....	12.0	39.72	4.0
STATION NO. 108 – HUMBER RIVER																		
7	July 2/55	6:17	.....	1,600†	66	15	1.2	7.1	60	0.8	.....	.....	50.4	0.069	217	37.2	30.4	3.0
8	Aug. 2	9:28	.....	5,510	64	.....	1.8	7.0	45	0.2	.....	.....	.....	.....	.....	.....	46.7	4.0
9	Sept. 2	6:21	.....	5,580	64	.....	2.0	7.0	90	0	.....	.....	.....	.....	.....	.....	37.3	4.2
10	Oct. 3	9:176	.....	5,760	52	12	2.1	6.8	90	4	2.4	0.0	38.8	0.053	601	22.0	35.43	2.7
11	Nov. 2	13:97	.....	4,510	40	.....	2.2	6.7	130	0.2	.....	.....	.....	.....	.....	.....	29.97	3.0
12	Dec. 2	12:101	.....	2,030	32	.....	1.6	7.1	125	0.2	.....	.....	.....	.....	.....	.....	42.98	4.4
13	Jan. 3/56	4:107	.....	8,990	32	11	3.1	7.0	150	0.7	.....	.....	54.0	0.073	1,306	23.6	56.45	5.5
14	Feb. 3	31:68	.....	1,910	32	.....	2.2	7.0	80	0.8	.....	.....	.....	.....	.....	.....	52.99	5.2
15	Mar. 2	19:71	.....	1,260	32	.....	1.2	7.3	55	0.2	.....	.....	.....	.....	.....	.....	63.87	4.2
16	Apr. 3	37:52	.....	5,800	32	13	2.1	7.2	50	0	.....	.....	70.4	0.096	1,098	24.4	70.33	6.7
17	May 2	20:33	.....	13,900	35	.....	2.0	6.8	70	0.8	.....	.....	.....	.....	.....	.....	46.27	3.8
18	June 1	10:21	.....	8,990	49	.....	3.1	6.3	50	3	.....	.....	.....	.....	.....	.....	28.68	2.3
STATION NO. 109 – SANDY LAKE																		
19	Sept. 1/56	18:23	.....	.....	64	15	2.7	6.6	45	0.3	.....	.....	34.8	0.047	.....	20.8	18.78	2.4
STATION NO. 110 – EXPLOITS RIVER																		
20	Oct. 3/55	14:50	High	.....	52.5	6.2	1.6	6.8	35	0.7	.....	.....	33.2	0.045	.....	16.4	29.31	3.0
21	Oct. 28/55	18:102	High	.....	44	.....	1.8	6.8	75	2	.....	.....	.....	.....	.....	.....	23.75	2.8
22	Mar. 23/56	48:56	High	.....	32	14	1.4	6.8	40	0	.....	.....	33.6	0.046	.....	14.8	28.96	2.9
STATION NO. 111 – EXPLOITS RIVER																		
23	Sept. 17/53	20:118	.....	3,340†	.....	.....	1.6	7.4	30	2	.....	.....	42.6	0.058	.....	12.2	55.4	5.9
24	Oct. 4/55	13:49	High	7,380	49	6.9	1.6	6.8	35	2	.....	.....	32.8	0.045	.....	15.2	42.3	2.9
25	Mar. 23/56	48:63	High	2,170	32	11	1.4	6.9	40	0	.....	.....	40.8	0.056	.....	19.6	30.63	3.1
26	May 2/56	23:33	Very high	24,100	35	.....	2.1	6.6	40	0.2	.....	.....	.....	.....	.....	.....	22.26	2.7
27	Oct. 17/56	9:13	.....	.....	53	14	3.0	6.6	40	2	.....	.....	30.4	0.041	.....	16.4	32.53	2.9
STATION NO. 112 – PETER'S POND																		
28	July 3/56	10:14	.....	.....	.....	10	2.2	7.0	50	0	.....	.....	.....	.....	.....	.....	46.1	6.2
STATION NO. 113 – GANDER RIVER																		
29	July 7/55	13:26	2,040e†	1,850†	48	16	1.6	6.7	55	0	.....	.....	34.4	0.047	190	22.8	25.9	1.8
30	Aug. 8	9:29	2,270	1,660	58	.....	4.8	6.2	50	20	.....	.....	.....	.....	.....	.....	23.6	1.3
31	Sept. 9	10:26	1,070	1,120	58	.....	1.8	6.7	45	0	.....	.....	.....	.....	.....	.....	25.34	1.9
32	Oct. 20	8:41	3,440	3,570	50	15	2.2	6.6	45	0	.....	.....	31.2	0.042	286	16.8	25.71	1.9

† Controlled water level at Deer Lake powerhouse, forebay.

† Discharge records at Deer Lake powerhouse, drainage area, 1,850 square miles.

† Discharge records at Grand Falls powerhouse of Anglo-Newfoundland Development Co. Ltd.; drainage area, 3,760 square miles.

* Sampled at town tap.

* Sampled from highway bridge.
† Discharge records, 3 miles downstream from Glenwood at Big Chute, Nfld.; drainage area, 1,730 square miles.
e estimated.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at DEER LAKE, NFLD. – (Concluded)																								
0.6	.....	.....	.....	.....	.....	.....	2.0	0.4	0.0	0.0	12.2	2.7	3.2	.....	0.6	3.6	.....	2.7	12.7	23.2	24.8	−2.4	12.1	1
0.5	.....	.....	.....	.....	.....	.....	2.0	0.3	0.1	0.0	12.9	2.3	3 2	.....	3.2	3.3	.....	2.7	13.3	28.3	24.1	−2.4	12.1	2
0.5	.....	0.03	0.0	0.07	0.0	0.0	2.0	0.3	0.5	0.0	12.2	2.6	3.0	0.0	2.4	3.3	.....	3.0	13.0	24.6	23.9	−2.4	12.1	3
0.4	.....	.....	.....	.....	.....	.....	2.0	0.3	0.0	0.0	11.6	2.3	3.1	.....	1.6	3.0	.....	2.6	12.1	22.6	25.8	−2.8	12.6	4
0.7	.....	.....	.....	.....	.....	.....	1.9	0.3	0.2	0.0	11.2	2.1	2.8	.....	3.6	3.3	.....	3.4	12.6	24.1	24.1	−2.8	12.6	5
0.7	.....	0.01	0.0	.....	0.0	0.2	2.6	0.3	0.15	0.0	14.3	1.7	3.2	0.0	1.2	3.6	.....	1.2	12.9	24.3	29.9	−2.4	12.0	6
near DEER LAKE, NFLD.																								
0.5	.....	0.14	0.0	Trace	0.0	.....	2.1	0.3	0.75	0.0	9.3	3.1	2.5	.....	0.2	0.7	0.00	1.9	9.5	17.1	31.0	−2.8	12.7	7
0.5	.....	.....	.....	.....	.....	.....	2.3	0.3	0.2	0.0	11.6	2.3	3.5	.....	0.4	1.2	.....	2.5	12.0	20.4	28.7	−2.7	12.4	8
0.5	.....	.....	.....	.....	.....	Li, 0.0	2.1	0.3	0.4	0.0	11.9	1.7	2.9	.....	0.2	1.1	.....	3.2	13.0	18.9	26.1	−2.7	12.4	9
0.7	.....	0.05	0.01	0.01	0.0	0.0	2.3	0.3	0.2	0.0	8.3	1.9	4.2	0.0	0.6	2.0	.....	2.8	9.6	18.9	33.0	−3.3	13.4	10
0.6	.....	.....	.....	.....	.....	.....	2.0	0.3	0.2	0.0	6.8	1.6	3.3	.....	3.2	2.5	.....	4.4	10.0	19.9	29.6	−3.4	13.5	11
0.9	.....	.....	.....	.....	.....	.....	2.5	0.3	0.2	0.0	11.8	3.6	3.5	.....	3.2	3.3	.....	5.0	14.7	27.7	26.5	−2.6	12.3	12
1.2	.....	0.07	0.0	0.06	0.0	0.0	3.4	0.5	0.2	0.0	18.4	4.2	4.9	0.0	0.6	4.2	.....	3.6	18.7	33.7	27.2	−2.4	11.8	13
1.0	.....	.....	.....	.....	.....	.....	3.7	0.5	0.0	0.0	14.1	4.9	6.2	.....	0.6	4.8	0.05	5.5	17.1	33.9	31.2	−2.6	12.2	14
2.3	.....	.....	.....	.....	.....	.....	4.0	0.4	0.1	0.0	13.4	3.9	7.2	.....	2.4	4.6	.....	8.9	19.9	35.6	29.8	−2.4	12.1	15
1.2	.....	0.18	0.0	0.0	0.0	0.0	4.3	0.6	0.5	0.0	21.2	3.8	7.1	0.0	2.4	4.6	.....	4.3	21.7	41.3	29.2	−2.1	11.4	16
0.5	.....	.....	.....	.....	.....	.....	3.0	0.4	0.0	0.0	7.7	2.4	5.9	.....	2.8	3.2	.....	5.2	11.5	25.8	35.1	−3.2	13.2	17
0.2	.....	.....	.....	.....	.....	.....	2.2	0.3	0.2	0.0	3.8	2.0	4.2	.....	3.6	2.0	.....	3.5	6.6	18.7	38.9	−4.2	14.7	18
near BUCHANS, NFLD.																								
0.2	.....	0.08	0.0	0.12	Slight trace	0.02	1.0	0.2	0.2	0.0	6.2	2.8	1.1	0.0	0.2	2.4	.....	1.7	6.8	13.6	21.6	−3.7	14.0	19
at BADGER, NFLD.																								
0.3	.....	0.03	0.0	0.13	0.01	0.07	1.4	0.2	0.2	0.0	6.7	2.5	2.3	0.0	0.8	2.4	0.00	3.2	8.7	16.4	23.8	−3.3	13.4	20
0.3	.....	.....	.....	.....	.....	.....	1.5	0.2	0.1	0.0	7.1	1.6	2.3	.....	1.6	3.5	.....	2.4	8.2	17.3	27.8	−3.3	13.4	21
0.5	.....	0.08	0.0	0.0	Trace	0.1	1.6	0.3	0.6	0.0	6.0	3.3	2.4	0.0	1.6	2.5	.....	4.4	9.3	18.1	26.2	−3.3	13.4	22
at GRAND FALLS, NFLD.																								
1.5	.....	0.03	.....	.....	.....	.....	3.6	0.9	.....	0.0	23.1	3.8	4.3	.....	0.2	2.4	.....	1.9	20.8	34.2	26.3	−2.0	11.4	23
0.4	.....	0.02	0.0	0.07	0.01	0.05	1.3	0.2	0.2	0.0	6.1	3.9	1.9	0.0	0.8	2.2	.....	0.0	3.9	16.7	22.8	−3.4	13.6	24
0.3	.....	0.05	0.0	0.03	Slight trace	0.2	1.9	0.3	0.6	0.0	6.8	3.3	2.5	0.0	2.4	2.9	0.00	3.4	9.0	20.2	30.1	−3.2	13.3	25
0.2	.....	.....	.....	.....	.....	.....	1.2	0.2	0.0	0.0	4.9	2.1	2.0	.....	1.2	2.7	.....	3.6	7.6	14.7	25.0	−3.7	14.0	26
0.7	.....	0.05	0.01	0.07	0.0	0.15	1.9	0.3	0.2	0.0	7.4	4.6	3.2	0.0	0.4	2.4	.....	4.0	10.1	20.4	26.0	−3.5	13.6	27
near BOTWOOD, NFLD.*																								
0.8	.....	0.12	0.0	0.05	0.0	0.1	2.0	0.2	0.2	0.0	14.3	1.6	5.1	0.0	4.0	3.8	.....	7.1	18.8	30.9	18.2	−2.5	12.0	28
at GLENWOOD, NFLD.*																								
0.3	.....	0.0	0.0	0.08	0.0	.....	1.3	0.3	0.25	0.0	4.9	1.1	2.2	.....	0.6	2.8	0.06	1.7	5.7	12.9	30.1	−3.7	14.1	29
0.6	.....	.....	.....	.....	.....	.....	1.6	0.3	0.3	0.0	5.0	0.9	2.6	.....	0.0	1.7	.....	1.6	5.7	11.8	36.3	−4.3	14.8	30
0.3	.....	.....	.....	.....	.....	.....	1.8	0.4	0.4	0.0	5.6	0.6	3.0	.....	0.4	2.0	Li, 0.0	1.6	6.2	12.8	37.0	−3.6	13.9	31
0.4	.....	Trace	0.0	0.03	0.0	0.0	1.7	0.3	0.1	0.0	5.2	1.2	2.5	0.0	1.2	2.3	.....	2.1	6.4	14.1	36.1	−3.8	14.2	32

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance $K \times 10^6$ at 25°C.	Calcium (Ca)
																		STATION NO. 113 – GANDER RIVER
1	Nov. 19/55	13:26	4,940†	6,590†	40	.....	4.0	6.3	50	2	.....	.....	.....	.....	.....	.....	28.40	1.8
2	Dec. 9	18:73	4,360	3,640	37	.....	4.7	6.2	50	0.9	.....	.....	.....	.....	.....	.....	33.87	2.4
3	Jan. 9/56	14:101	7,210	8,870	38	8.1	3.0	6.4	50	0.3	.....	.....	32.4	0.044	630	19.2	34.29	1.7
4	Feb. 15	20:70	2,960	3,430	38	.....	3.8	6.4	50	0	.....	.....	.....	.....	.....	.....	30.91	2.0
5	Mar.	No sample taken		1,690														
6	Apr. 7	37:58	2,020	9,010	37	.....	2.9	6.4	50	4	.....	.....	.....	.....	.....	.....	25.56	2.1
7	May 7	24:38	9,620	10,500	41	10	4.1	6.8	50	2	.....	.....	36.0	0.049	934	16.4	42.73	2.3
8	June 5	8:17	5,340	4,820	42	.....	3.0	6.3	50	0.3	.....	.....	.....	.....	.....	.....	20.95	1.6
9	July 5	13:18	4,600	3,010	50	.....	3.3	6.4	45	0	.....	.....	.....	.....	.....	.....	25.72	1.9

* Sampled from highway bridge.
† Discharge records, 3 miles downstream from Glenwood at Big Chute, Nfld.; drainage area, 1,730 square miles.

																		STATION NO. 114 – GANDER LAKE
10	July 5/56	8:12	.....	.....	50	10.1	1.2	6.3	40	0	.....	.....	18.8	0.026	.....	4.8	24.2	1.6

* At airport hotel tap.

																		STATION NO. 115 – ROCKY RIVER
11	July 20/55	13:26	338†	172†	65	18	0.9	7.2	90	0	.....	.....	42.4	0.058	38.9	22.8	37.90	1.8
12	Aug.	No sample taken		255														
13	Sept. 7	12:28	85	176	56	.....	1.7	6.9	80	0	.....	.....	.....	.....	.....	.....	39.78	2.8
14	Oct.	No sample taken		587														
15	Nov. 7*	23:38	1,530	839	45	.....	5.0	6.0	160	0.8	.....	.....	.....	.....	.....	.....	32.38	1.1
16	Dec.	No sample taken		483**														
17	Jan. 1/56	19:117	850e	606	45	9.6	4.0	6.0	70	0.8	.....	.....	33.6	0.046	77.5	18.0	37.19	1.3
18	Feb.	No sample taken		301														
19	Mar. 7/56	41:66	338	487	32	.....	1.8	6.6	60	0.8	.....	.....	.....	.....	.....	.....	39.93	1.8
20	Apr.	No sample taken		66														
21	May 7	13:38	612	496	45	11	2.5	6.4	70	0.2	.....	.....	31.6	0.043	52.2	14.0	30.30	1.6
22	June 27	21:26	663	385	55	.....	3.8	6.2	130	2	.....	.....	.....	.....	.....	.....	29.32	1.4

† Discharge records, 1,200 yards upstream from highway bridge No. 6; drainage area 100 square miles.
* After 20 days rain.
** Ice conditions December 17 to 31, 1955, January 31 to February 29, 1956.
e estimated.

																		STATION NO. 116 – BLACK RIVER
23	Dec. 7/56	28:41	Normal	.....	44	16	4.8	6.0	50	0	.....	.....	49.2	0.067	.....	33.6	26.32	1.1

* Sampled at highway bridge.

																		STATION NO. 117 – PIPER'S HOLE RIVER
24	July 24/55	22:73	976†	528†	57	23	2.4	6.4	100	3	.....	.....	35.6	0.048	93.0	23.6	23.10	1.6
25	Aug.	No sample taken																
26	Sept. 12	9:45	116	426	61	.....	1.7	6.8	45	3	.....	.....	.....	.....	.....	.....	31.50	2.8
27	Oct.	No sample taken																
28	Nov.	No sample taken																
29	Dec. 15	12:118	703	782*	32	9.8	2.5	6.4	75	2	.....	.....	35.6	0.048	66.9	18.8	22.65	1.6
30	Jan. 1956	No sample taken		1,810														
31	Feb. 15/56	20:82	655	576	34	.....	2.5	6.4	60	0	.....	.....	.....	.....	.....	.....	23.12	1.6
32	Mar.	No sample taken		878														
33	Apr. 12	35:48	2,260	2,400	37	10	3.2	6.1	60	4	3.5	2.0	32.8	0.045	202	21.6	20.38	1.6

† Discharge records immediately below confluence of Mothers Brook, about 9 miles from Swift Current; drainage area, 300 square miles.
* Ice conditions, December 20, 1955 to January 6, 1956, February 8 to 27 and March 12 to 25, 1956.

TABLE II – (Continued)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
at GLENWOOD, NFLD.* – (Concluded)																								
0.6	.....	.....	.....	.....	.....	.....	1.9	0.5	0.5	0.0	5.0	2.2	2.8	.....	0.8	2.6	.....	2.9	7.0	15.7	35.2	-4.1	14.5	1
0.7	.....	.....	.....	.....	.....	.....	2.2	0.5	0.2	0.0	4.5	3.1	2.9	.....	3.2	2.7	.....	5.2	8.9	19.9	33.5	-4.2	14.6	2
0.5	.....	0.0	0.0	0.03	0.0	0.0	1.7	0.4	0.2	0.0	4.6	2.1	2.8	0.0	0.8	3.0	.....	2.5	6.3	15.3	34.6	-4.0	14.6	3
0.6	.....	.....	.....	.....	.....	.....	2.1	0.4	0.2	0.0	4.3	3.1	3.7	.....	1.2	2.6	0.00	4.0	7.5	17.8	36.4	-4.1	14.5	4
																								5
0.2	.....	.....	.....	.....	.....	.....	1.8	0.4	1.0	0.0	4.6	2.4	2.9	.....	2.4	2.5	.....	2.3	6.1	18.0	29.5	-4.0	14.4	6
0.5	.....	0.03	0.0	0.0	0.0	0.0	4.4	0.7	0.3	0.0	6.6	2.4	5.9	0.0	4.0	2.8	.....	2.4	7.8	26.2	52.2	-3.8	14.0	7
0.4	.....	.....	.....	.....	.....	.....	1.4	0.3	0.2	0.0	3.7	1.5	2.2	.....	3.2	2.3	.....	2.6	5.6	14.7	31.7	-4.3	14.9	8
0.4	.....	.....	.....	.....	0.0	0.0	1.6	0.3	0.3	0.0	5.0	1.4	2.3	.....	1.6	2.4	.....	2.3	6.4	14.4	31.4	-4.0	14.4	9
at GANDER, NFLD.*																								
0.7	.....	0.08	Trace	0.05	0	.05	1.7	0.3	0.2	0.0	1.5	2.6	4.6	6.3	2.4	2.6	.....	.....	.....	17.4	32.5	-4.7	15.7	10
near COLINET, NFLD.																								
0.7	.....	0.0	0.0	0.12	0.0	.....	3.2	0.4	0.3	0.0	8.7	2.9	.....	.....	0.6	1.9	.....	0.2	7.4	.....	44.9	-2.9	13.0	11
																								12
0.4	.....	.....	.....	.....	.....	.....	4.0	0.4	0.2	0.0	8.3	1.6	5.8	Li. 0.0	0.2	1.2	0.01	1.8	8.6	20.5	48.8	-3.1	13.1	13
																								14
0.8	.....	.....	.....	.....	.....	.....	3.4	0.3	0.4	0.0	3.3	1.4	6.0	.....	0.2	1.6	.....	3.3	6.0	16.4	53.5	-4.8	15.6	15
																								16
0.7	.....	0.05	0.0	0.0	Trace	0.0	3.8	0.2	0.1	0.0	2.4	2.3	7.3	0.0	2.4	2.3	.....	4.1	6.1	21.6	56.1	-5.0	16.0	17
																								18
0.5	.....	.....	.....	.....	.....	.....	4.3	0.6	.....	0.0	4.1	2.4	7.6	.....	2.8	2.4	0.00	3.1	6.5	24.4	56.1	-4.0	14.6	19
																								20
0.5	.....	0.10	0.0	0.0	0.0	0.0	3.3	0.3	0.0	0.0	4.0	1.7	5.8	0.0	1.6	1.5	.....	2.7	6.0	18.4	52.0	-4.2	14.8	21
0.6	.....	.....	.....	.....	0.0	0.0	3.1	0.2	0.2	0.0	3.9	1.6	4.3	.....	3.2	1.4	.....	2.8	6.0	17.7	49.9	-4.5	15.2	22
near BLACK RIVER, NFLD.*																								
0.6	.....	0.09	0.0	0.26	0.0	0.0	2.6	0.2	0.2	0.0	3.0	1.7	5.0	0.0	0.8	3.3	.....	2.7	5.2	17.2	44.4	-4.9	15.8	23
near SWIFT CURRENT, NFLD.																								
0.4	.....	0.13	0.0	0.11	0.0	.....	1.7	0.3	0.0	0.0	3.9	2.8	2.5	.....	0.4	1.7	Li. 0.0	2.4	5.6	13.5	34.9	-4.1	14.6	24
																								25
0.1	.....	.....	.....	.....	.....	.....	2.5	0.3	0.0	0.0	6.7	1.0	4.2	.....	0.4	1.2	Li. 0.0	1.9	7.4	15.8	41.1	-3.4	13.6	26
																								27
																								28
0.3	.....	0.09	0.0	0.0	Trace	0.0	2.2	0.3	0.15	0.0	3.9	1.8	3.2	0.0	0.8	3.3	.....	2.0	5.2	15.5	45.3	-4.2	14.8	29
																								30
0.3	.....	.....	.....	.....	.....	.....	2.0	0.3	0.1	0.0	4.0	.....	4.0	.....	2.0	2.8	0.0	1.9	5.2	.....	43.7	-4.3	15.0	31
																								32
0.1	.....	0.11	0.0	0.02	Trace	0.0	1.7	0.3	0.0	0.0	2.4	1.1	3.1	0.0	3.2	2.0	.....	2.4	4.4	14.4	42.1	-4.8	15.7	33

TABLE II – (Concluded)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

No.	Date of collection	Storage period (Days)	Stream discharge (Second-feet): On sampling date	Stream discharge (Second-feet): Monthly mean	Water temperature (°F.)	Oxygen consumed by $KMnO_4$	Carbon dioxide (calculated) (CO_2)	pH	Colour (Hazen) (Units)	Turbidity (Units)	Suspended matter: Dried at 105°C.	Suspended matter: Ignited at 550°C.	Residue on evaporation dried at 105°C. (Dissolved solids): Parts per million	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per acre-foot	Residue on evaporation dried at 105°C. (Dissolved solids): Tons per day	Loss on ignition at 550°C.	Specific conductance K × 10⁶ at 25°C.	Calcium (Ca)
																		STATION NO. 118 – DUNN'S RIVER
1	Dec. 7/56	28:41	Normal	.....	38	18	9.2	5.6	70	0	.....	.....	40.8	0.056	.....	40.4	29.98	1.2
																		STATION NO. 119 – BAY OF FUNDY
2	Aug. 2/55	21:142	Sampled at ½ ebb tide		54	.....	.....	7.9	0	0	.....	.....	34,985	47.49	.....	3,205	48,869	406
																		STATION NO. 120 – BAY OF FUNDY
3	July 29/55	13:24	Sampled at nearly high tide		66	.....	.....	7.9	5	5.0	.....	.....	31,138	42.35	.....	4,508	45,698	336
																		STATION NO. 121 – ATLANTIC OCEAN
4	Aug. 5/55	10:17	Sampled at high tide		71	.....	.....	8.1	10	0	.....	.....	23,464	31.90	.....	3,424	35,616	251
																		STATION NO. 122 – ATLANTIC OCEAN
5	Aug. 5/55	10:17	Sampled at high tide		57	.....	.....	8.0	5	0.3	.....	.....	33,500	45.51	.....	4,384	49,097	360
																		STATION NO. 123 – ATLANTIC OCEAN
6	Aug. 11/55	12:33	Sampled at ¾ tide		68	.....	.....	8.1	5	0.3	.....	.....	29,662	40.35	.....	2,960	42,053	333
																		STATION NO. 124 – ATLANTIC OCEAN
7	July 30/55	12:23	Sampled at high tide		54	.....	.....	8.0	5	0	.....	.....	33,812	46.00	.....	3,916	49,277	363

TABLE II – (Concluded)

Chemical Analyses of Surface Waters in the Atlantic Provinces and in the Saint John River Drainage Basin in Quebec

(In parts per million)

Magnesium (Mg)	Iron (Fe) Total	Iron (Fe) Dissolved	Manganese (Mn)	Aluminum (Al)	Copper (Cu)	Zinc (Zn)	Alkalis Sodium (Na)	Alkalis Potassium (K)	Ammonia (NH_3)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Silica (colorimetric) (SiO_2)	Boron (B)	Hardness as $CaCO_3$ Non-carbonate	Hardness as $CaCO_3$ Total	Sum of constituents	Per cent sodium	Saturation index	Stability index	No.
east of TERRENCEVILLE, NFLD.																								
0.6	.....	0.07	0.0	0.3	0.0	0.0	3.0	0.2	0.3	0.0	2.3	2.8	5.8	0.0	0.8	1.7	....	3.6	5.5	17.6	46.5	-5.4	16.4	1
at DIGBY, N.S.																								
1,148	.....	Trace	.....	.....	0.0	0.0	9,640	400	0.0	0.0	138	2,517	18,252	0.0	.....	.....	....	5,620	5,733	32,431	77.6	....	....	2
at HANTSPORT, N.S.																								
1,063	.....	Trace	.....	.....	0.0	.....	8,480	312	.....	0.0	126	2,172	15,640	.....	.....	.....	.....	5,108	5,211	28,065	76.6	....	....	3
at IRISH COVE, N.S.																								
798	.....	0.0	.....	.....	0.0	.....	6,360	249	.....	0.0	106	1,628	11,820	.....	.....	.....	.....	3,821	3,908	21,225	76.5	....	....	4
at MULGRAVE, N.S.																								
1,108	.....	0.06	.....	.....	0.0	.....	9,040	348	.....	0.0	132	2,319	16,800	.....	.....	.....	.....	5,345	5,454	30,040	76.9	...	....	5
at PUGWASH, N.S.																								
977	.....	Trace	.....	.....	.....	.....	8,480	320	.....	0.0	124	2,075	15,106	0.0	.....	.....	.....	4,747	4,849	27,355	77.8	....	....	6
at HERRING COVE, N.S.																								
1,162	.....	Trace	.....	.....	0.0	.....	9,760	353	.....	0.0	132	2,374	17,320	.....	.....	.....	.....	5,577	5,686	21,400	77.5	....	....	7

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND

Municipality	BELLEORAM	BOTWOOD
Population served:	1951: 663[c]; 1956: 600 (570)[d]	1951: 3,421[c]; 1956: 3,000 (3,894)[d]; 1958: 4,000 (est.)
In municipality	663[c]	3,421[c]
Outside municipality	0	0
Total	663	3,421
	1956: 600 (570)[d]	1956: 3,000 (3,894)[d]
	0	0
	600	3,000
		1958: 4,000 (est.)
		0
		4,000 (est.)
Date(s) of survey	July 17, 1956	July 6, 1956
Ownership	Municipally owned and operated	Owned and operated by Botwood Water Corporation
Source of supply	Rabbit's Pond	Peter's Pond River, 5 miles west of town
Treatment	No treatment; water flows by gravity to reservoir and system.	Pumped from pond in river, to reservoir and system with chlorination.
Storage capacity (thousand gallons)	Wooden reservoir ..... No data	Concrete reservoir 312
Consumption (average in m.g.d.)	1955: 5,000 g.p.d.	1956: 0.30; 1958: 0.60
		Plant capacity - 1.25 m.g.d.
Industrial use	The only major industry is a herring processing plant using about 2 per cent of total water.	Industrial water users are C.N. Rys., shipping, and the Anglo-Newfoundland Development Co., Ltd.
Remarks:		

Municipality	CORNER BROOK	CURLING*
Population served:	1956: 23,000 (23,225)[d†]; 0; 23,000*	1956: 3,559; 0; 3,559 — 1957: 3,600; 0; 3,600
In municipality	23,000 (23,225)[d†]	3,559 / 3,600
Outside municipality	0	0 / 0
Total	23,000*	3,559 / 3,600
Date(s) of survey	July 3, 1956	August, 1957
Ownership	Owned and operated by the Water and Sewage Corporation of Greater Corner Brook	Owned and operated by the Water and Sewage Corporation of Greater Corner Brook
Source of supply	Impounding reservoirs (3 mile dam and 2nd Pond) on Corner Brook River	Second Pond (reservoir on Corner Brook River)
Treatment	Water is screened and flows by gravity to system with chlorination.	Water flows by gravity with screening and chlorination to system.
Storage capacity (thousand gallons)	None but impounding reservoirs on river	None but impounding reservoirs in river
Consumption (average in m.g.d.)	1956-57: 5.0 (est.)*	1956: 0.40
Industrial use	Major users are Bowater's Nfld. Pulp and Paper Mills Ltd., North Star Cement Co. and Atlantic Gypsum Co., Ltd.	A fish plant is the principal user.
Remarks:	* Includes Corner Brook East, Corner Brook West and Curling	* Curling is a part of city of Greater Corner Brook but has its own system and water source.

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.
† Boundary change since 1951

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND — (Continued)

BUCHANS		CARBONEAR		CHANNEL-PORT AUX BASQUES	
1951	1956	1951	1956	1951	1956
1,944[c]	2,500 (2,413)[d]	3,351[c]	2,000 (3,955)[d]	2,634[c]	3,500 (3,320)[d]
0	0	0	0	0	0
1,944	2,500	3,351	2,000	2,634	3,500
June 26, 1956		November 16, 1956; 1958		June 27, 1956	
Owned and operated by the Buchans Mining Co. Ltd.		In 1956, privately owned and operated by Carbonear Water Co. In 1958-59 system municipally owned and operated		Municipally owned and operated	
Sandy Lake		Little Island Pond		Small river dammed to form a lake*	
Water is filtered and chlorinated.		Water is screened and flows to system by gravity.		Water flows by gravity with chlorination to system.	
Elevated tank 100		None		Dam (reservoir) 120,000	
1955		Not known		No data	
2.01					
The only major industries are a mill and mine using about 80 per cent of pumpage.		No major industrial users		The major industrial users are C.N. Rys. and West Coast Power Co. Ltd. Railway uses 2 m.g./month and Power Co. about 70,000 gal./month.	
				* Yearly run-off about 500 m.g.	

DEER LAKE		FORTUNE		FRESHWATER	
1951	1956	1951	1956	1951	1956
2,655c	3,500 (3,481)[d]	867[c]	1,200 (1,194)[d]	810	2,000 (1,048)[d]
0	0	0	0	0	0
2,655	3,500	867	1,200	810	2,000
September 29, 1956		July 4, 1956		July 10, 1956	
Municipally owned and operated		Municipally owned and operated		Municipally owned and operated	
Grand Lake		Fortune Brook		Larkin's Pond*	
No treatment; water flows by gravity through hydroelectric penstock and thence to system.		Water is screened and pumped with chlorination to reservoir and system.		Water is pumped with chlorination to tanks and system.	
None		Elevated tank 56		Two elevated tanks ..... 10 and 30	
1956	1958	1955		1955	
0.25 (est.)	0.30	0.092 (est.)		0.042	
No major industrial users		The only major industrial user is a fish processing plant, which uses about 50 per cent of total pumpage.		No major industrial users	
				* *See also* Placentia	

88095-5—5

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND — (Continued)

Municipality	GANDER AIRPORT	GANDER TOWNSITE*
Population served:	1951 / 1956	1956
In municipality	3,956[c] / (3,649)[d]	1,289[d]
Outside municipality		0
Total	6,000*	1,289
Date(s) of survey	June 27, 1956	December, 1957; May, 1959
Ownership	Owned and operated by the Federal Department of Transport	Municipally owned and operated*
Source of supply	Gander Lake	Water obtained from Gander Airport system
Treatment	Water is pumped with screening and chlorination to reservoirs and system.	*See* Gander Airport
Storage capacity (thousand gallons)	Two tanks (wood) ..... 60 each One concrete reservoir 500	No data
Consumption (average in m.g.d.)	1956 1.125	No data
Industrial use	No data; - used by airport	No data
Remarks:	* Only partly served (1,000) and includes some in Gander Townsite.	* In late 1957 the system was still under construction but, by 1959, was almost completed.

Municipality	HARBOUR GRACE		JERSEYSIDE		
Population served:	1951	1956	1951	1956	1957
In municipality	2,331[c]	2,500 (2,545)[d]	544[c]	713[d]	700
Outside municipality	0	0*	0	0	0
Total	2,331	2,500	544	713 *	700 *
Date(s) of survey	July 11, 1956		August, 1957; 1958		
Ownership	Municipally owned and operated		Municipally owned and operated		
Source of supply	Bannerman Lake		Larkin's Pond**		
Treatment	No treatment; water is screened and flows by gravity to system.		In 1957, no treatment; water flows by gravity to the system. In 1958, chlorination was being carried out.		
Storage capacity (thousand gallons)	None		No data		
Consumption (average in m.g.d.)	1956 0.135		No data		
Industrial use	The major industrial users are a fish processing plant, and smaller industries such as an oil refinery and a whaling company. Industrial use is about 0.1 per cent of total use.		No data		
Remarks:	* Shipping supplied with drinking water.		* Not all served ** *See also* Placentia		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND – (Continued)

GRAND BANK		GRAND FALLS		GREENSPOND
1951	1956	1951	1956	1956
2,148[c]	2,450 (2,430)[d]	5,064[c]	6,000 (6,064)[d]	800 (784)[d]
0	0	0	0	0
2,148	2,450	5,064	6,000	800
June 29, 1956		October 22, 1956		January 2, 1956
Municipally owned and operated		Owned and operated by the Anglo-Newfoundland Development Co. Ltd.		Municipally owned and operated
Grand Bank Brook		Exploits River		A small pond
Water is pumped with chlorination to tank and system.		Water is prechlorinated, pressure-filtered, treated with Calgon and pumped to system.		Water flows by gravity to the system with no treatment.
Tank (wood) 56		None		No data
1956		1956		
0.100 (Max. 0.135)		1.0		No data
Plant capacity - 0.150				
The major industrial users are a fish processing plant and the Bonavista Cold Storage Co.,Ltd. Industrial use is about 40 to 45 per cent of total pumpage.		The only industrial user is the Anglo-Newfoundland Development Co.,Ltd., using about 20 per cent of total pumpage.		No data

LEWISPORTE		PLACENTIA		ST. ANTHONY	
1951	1956	1956	1958	1951	1956
1,218	2,000 (2,076)[d]	1,000 (1,233)[d]	1,500	1,380[c]	1,400 (1,761)[d]
0	0	600*		0	0
1,218	2,000	1,600	1,500	1,380	1,400
June 26, 1956; December, 1958		July 6, 1956; December, 1958		September 11, 1956	
Municipally owned and operated		Municipally owned and operated		Municipally owned and operated	
Stanhope Lake		Larkin's Pond		International Grenfell Association Reservoir (surface run-off)	
In 1956, no treatment; water is pumped to tank and system. In 1958, chlorination was being carried out.		In 1956, no treatment; flows by gravity to system. In 1958, chlorination was being carried out.		Water is supplied by gravity, by two separate systems.	
Tank (wood) 25		No data		No data	
In 1958, one tank (steel) 175					
1956	1958	1956		No data	
0.12 (Max. 0.14)	0.15	0.10			
Plant capacity - 0.288 m.g.d.					
No major industrial users		No data		No data	
		*Jerseyside			

88095-5—5½

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND—(Continued)

Municipality	ST. JOHN'S*			ST. LAWRENCE	
Population served:	1951	1956	1957	1951	1956
In municipality	52,873[c]	53,000 (57,078)[d]	57,000	1,451[c]	2,000 (1,837)[d]
Outside municipality	No data	No data	13,000	0	0
Total			70,000	1451	2,000
Date(s) of survey	June 5 and Dec. 6, 1956; Jan. 16, 1957			August 31, 1956	
Ownership	Municipally owned and operated			Municipally owned and operated	
Source of supply	Petty Harbour Long Pond and Windsor Lake, 3 and 5 miles distant, respectively**			Well, 300 feet deep	
Treatment	In 1956, water flows by gravity with screening and chlorination to systems. At a later date lime treatment was started.			No treatment; water is pumped to reservoir and system.	
Storage capacity (thousand gallons)	None, except Windsor Lake, Petty Harbour Long Pond and Georges Pond (35 m.g.)			Steel reservoir 500	
Consumption (average in m.g.d.)	1955	1956		1956	1958
	9.5 (Max. 11.0 / Min. 8.0)	9.8 (Max. 11.0 / Min. 9.0)		No data	0.188
Industrial use	Main users are Ft. Pepperell Air Force Base, Torbay Airport, a fish plant, shipping and C.N. Rys. Dockyard. Industrial use is about 31 per cent of total use.			No major industrial users	
Remarks:	* Total metropolitan area population in 1956 was 77,991. ** Windsor Lake is the main supply and supplies St. John's East and Torbay Airport.				

B. PRINCE EDWARD ISLAND

Municipality	CHARLOTTETOWN			SUMMERSIDE		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	15,887[c]	16,000	16,707[d]	6,547[c]	7,000	7,242[d]
Outside municipality		600		0	0	0
Total		16,600		6,547	7,000*	7,242
Date(s) of survey	September 11, 1954			September 11, 1954		
Ownership	Municipally owned and operated by a Public Utilities Commission.			Municipally owned and operated		
Source of supply	29 wells, 10 at Union Pumping Station, 18 at Brackley Pumping Station and one at the main pumping station.			5 wells, two 600 feet deep, one 250 feet deep and two 500 feet deep. One 600 and two 500 feet deep wells were not being used at the time of the survey.		
Treatment	Water is pumped with chlorination to system.			No treatment; wells are pumped separately to standpipe and system.		
Storage capacity (thousand gallons)	One concrete reservoir 1,250			Standpipe 365		
Consumption (average in m.g.d.)	1954		1958	1954		1958
	1.75 (Max. 2.0)		1.92	0.70 (Max. 0.80)		1.0
	Pumping capacity - 10 m.g.d.					
Industrial use	Major industrial users are C.N. Rys., Canada Packers, a foundry, a pickling plant and a creamery. Industrial use is estimated at 50 per cent of total pumpage.			Major industrial users are a creamery, a potato bag factory and a cold storage plant.		
Remarks:				* 95 per cent of the people served with water		

[c]Population according to ninth census of Canada, 1951.
[d]Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

A. ISLAND OF NEWFOUNDLAND – (Concluded)

SPRINGDALE*		STEPHENVILLE		WINDSOR		
1951	1956	1956	1959	1951	1956	1957
1,238	2,000 (1,638)[d]	3,750 (3,762)[d]	7,000	3,674[c]	4,520[d]	4,500
0	0	0	0	0	0	0
1,238	2,000	3,750	7,000	3,674	4,520	4,500
July 6, 1956		December 11, 1956; February 9, 1959		August, 1957		
Owned by Rural District Council		Municipally owned and operated		Municipally owned and operated		
Sullivan's Pond		Island Pond		Exploits River		
No treatment; water flows by gravity to system.		Water flows by gravity with chlorination to system.		Water is pumped with screening and chlorination to system.		
None		Earth dam at Pond 270,000		No data		
1956		1956	1958	1957	1958	
6,000 g.p.d.		0.40	0.60 (Max. 1.50) (Min. 0.25)	No data	0.42	
No major industrial users		A bottling plant and a laundry use town water.		No data		
* Springdale-South Brook Rural District				System under construction in late 1956.		

C. NOVA SCOTIA

AMHERST			ANNAPOLIS ROYAL			ANTIGONISH			
1951	1954	1956	1951	1954	1956	1951	1954	1956	1958
9,870[c]	10,000	10,301[d]	784[c]	766	765[d]	3,196[c]	4,500	3,592[d]	4,500
0	0	0		248*	250 (est.)*	0	0	0	0
9,870	10,000	10,301		1,014	1,015	3,196	4,500	3,592	4,500
August 18, 1954; December, 1958			August 23, 1954			August 30, 1954; 1958			
Municipally owned and operated by a Public Utilities Commission			Municipally owned and operated			Municipally owned and operated			
In 1954, five wells (600 feet deep) in town and Nappan River, 3 miles distant*			A lake (First Pond), 4 miles distant			Brooks and springs 3½ miles distant, and Clydesdale River.*			
Well water is pumped to reservoir without treatment; river water is pumped from dam with chlorination to reservoir and system.			No treatment; water flows by gravity to system.			Springs and brook water, collected in open reservoir, flow by gravity with chlorination to system. River water is pumped with chlorination to system.			
Brookdale dam 800,000			None			Two open earth reservoirs 2,500 and 1,000			
One open concrete reservoir 1,500						One concrete reservoir 70			
1954	1958		Not known			1954	1958		
1.0** (Max. 1.25)	1.5					0.55 (Max. 0.60)	0.75		
Major users are C.N. Rys., aircraft and enamel plants, a rolling mill and a foundry.			Major industry in the area is a lumber mill.			Major users are C.N. Rys., a hospital and a college. Industrial use is about 50 per cent of total consumption.			
* All wells are in same water table. Nappan River is a standby supply. In 1958, there were 6 wells, but only 5 are normally used.			* Part of Lequille, N.S.			* River supply is used only during the dry season (2 to 3 months each year)			
** 99 per cent well water									

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA – (Continued)

Municipality	BADDECK			BIRCH GROVE		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	549[c]	1,500	772[d]	421[c]	500	338[d]
Outside municipality	0	0	0	0	0	0
Total	549	1,500	772	421	500	338
Date(s) of survey	September 1, 1954			July 2, 1954; 1958		
Ownership	Municipally owned and operated by a Public Utilities Commission.			Owned and operated by the Dominion Coal and Steel Corp. Ltd.		
Source of supply	Springs and surface run-off from 23 acres			MacDonald's Lake, ½ mile distant		
Treatment	No treatment; flows by gravity with natural filtration from reservoirs to system.			No treatment; water is pumped to standpipe and system. Water is supplied free of charge.		
Storage capacity (thousand gallons)	Two open earth reservoirs ..... 7,000 and 2,000			Standpipe (wood) 30		
Consumption (average in m.g.d.)	1954			1954		1958
	0.075			1.4 (Max. 1.8)		0.055
Industrial use	The major user is a creamery.			No major industrial user		
Remarks:						

Municipality	CENTREVILLE			DARTMOUTH		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	318[c]	No data	437[d]	15,037[c]	20,000	21,093[d]
Outside municipality	0		0		800	
Total	318		437		20,800	
Date(s) of survey	September 1,1954			August 27, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	Supplied by Sydney Mines, N.S. and North Sydney, N.S.			Lamont, Topsail and Loon Lakes, 3½ miles distant.*		
Treatment	*see* Sydney Mines and North Sydney			Water is pumped with lime treatment (to pH 7.6 - 7.9) and chlorination to system. Fluoridation was begun in 1956.		
Storage capacity (thousand gallons)				Reservoir (earth) 5,000		
Consumption (average in m.g.d.)	1954			1954		1958
	0.80			1.4 (Max. 1.8)		2.3
Industrial use				The main industrial users are a shipyard, some Navy establishments and a liquid air plant. Total industrial use is about 20 per cent of pumpage.		
Remarks:	* 100 served by North Sydney in 1954			In the Dartmouth area there are several small systems supplying lake waters to a number of establishments of the Department of National Defence. A sugar refinery at Woodside, the Imperial Oil Co. Ltd. plant and Imperoyal Village are supplied from Morris Lake. Other lakes used in these small systems are Bisset, Anderson and Albro Lakes. These smaller systems will be covered in later reports.		
				* Lamont and Topsail Lakes are joined. Loon Lake is pumped into Topsail Lake when required.		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA — (Continued)

BRIDGETOWN

1951	1954	1956
1,038[c]	1,050	1,041[d]
	100	100 (est.)
	1,150	1,141

August 23, 1954 .....

Municipally owned and operated .....

Croskill Lake, spring-fed, 3 miles distant.

No treatment; water flows by gravity to reservoirs and system.

Two open earth reservoirs, ½ mile distant .....22,000 and 1,500

1954
0.30

Major users are a distillery and a lumber mill.

.....

BRIDGEWATER

1951	1954	1956
4,010[c]	4,000	4,445[d]
0	0	0
4,010	4,000*	4,445

August 21, 1954 .....

Municipally owned and operated by a Public Utilities Commission.

Hebbs Lake, 2½ miles distant .....

Water is pumped to reservoir and then to system with chlorination.

Open reservoir 1,000

1954	1958
0.25 (Max. 0.325)	0.275

Main users are C.N. Rys., an engine manufacturing plant, a woodworking plant and a beverage plant.

* Only about 80 per cent served with water.

CANNING

1951	1954	1956
531	1,000	619[d]
0	0	0
531	1,000*	619

September 9, 1954 .....

Municipally owned and operated by a Public Utilities Commission.

Springs, 3 miles distant and a brook**, 1½ miles distant.

No treatment; spring feeds an open reservoir which supplies system by gravity. Brook is pumped from behind a dam to system.

Open reservoir 1,500

Not known .....

Major industrial users are an axe factory and a food manufacturer.

* Only about 60 per cent served with water.

** Brook is a reserve supply, used mostly in summer.

DIGBY

1951	1954	1956
2,047[c]	2,100	2,145[d]
	500	
	2,600	

August 24, 1954 .....

Municipally owned and operated by a Public Utilities Commission.

Lily Lake, 3 miles distant and surface run-off (artificial lake*)

Water from Lily Lake flows by gravity, with chlorination, to system.

Open reservoir 500
Artificial lake 25,000

1954
0.120

Major industrial users are an ice plant, fish processing plant, lumber mill, dairy and cold storage plant. Industrial use is about 20 per cent of total consumption.

* This artificial lake is a reserve supply. Lily Lake is spring-fed.

DOMINION

1951	1954	1956
3,143[c]	3,500	2,964[d]
0	0	0
3,143	3,500	2,964

September 2, 1954 .....

Municipally owned and operated*.....

Purchased from Glace Bay, N.S.

see Glace Bay, N.S. .....

None.....

1954	1956	1958
0.13	0.109	0.08

No data .....

*Glace Bay and Dominion Coal and Steel Corp. Ltd. each pay one-half the cost of pumping.

DONKIN

1951	1954	1956
1,360[c]	1,400	1,197[d]
0	0	0
1,360	1,400*	1,197

September 2, 1954 .....

Owned and operated by the Dominion Coal and Steel Corp. Ltd.

Spring-fed lake, ½ mile distant (10 m.g. capacity)

Water is pumped through 1 foot of sand and gravel in bottom of standpipes, through standpipes and thence to system.

Two standpipes (wood) .....12 (each)

1954
0.40

No major industrial users .....

* Only 1,000 of population served with water; water is supplied free of charge.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA – (Continued)

Municipality	FLORENCE	FAIRVIEW
Population served:	1951 / 1956	
In municipality	1,907[c] / 1,941[d]	
Outside municipality	0 / 0	
Total	1,907 / 1,941*	
Date(s) of survey	1954	
Ownership		
Source of supply	*see* North Sydney, N.S.	A part of metropolitan Halifax.
Treatment	*see* North Sydney, N.S.	*see* Halifax, N.S.
Storage capacity (thousand gallons)	None	
Consumption (average in m.g.d.)	No data	
Industrial use	No data	
Remarks:	* In 1954, 150 only served with water from North Sydney.	

[c]Population according to ninth census of Canada, 1951
[d]Population according to tenth census of Canada, 1956

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA – (Continued)

GLACE BAY				GRANVILLE FERRY			HALIFAX, N.S.			
1951	1954	1956	1958	1951	1954	1956	1951	1954	1956	1958
25,586[c]	31,500	24,416[d]	28,000	608[c]	280	376[d]	85,589[c]	100,000	93,301[d]*	105,500
	7,050*			0	0	0		3,200	No data	
	38,550			608	280	376		103,200		
September 2, 1954; December, 1958				September 9, 1954			August 27, 1954			
Municipally owned and operated by a Public Utilities Commission				Municipally owned and operated			Municipally owned and operated by a Public Utilities Commission			
Sand Lake, 5 miles distant, fed by springs and a small watershed (430 m.g. capacity)				Springs and wells, the latter being a reserve supply.			Long Lake and Chain Lake - 2 miles distant and Spruce Hill Lake - 6 miles distant. The former lakes supply water for low elevations of city; Spruce Hill Lake supplies the high elevations of the city. Big Indian Lake is an emergency supply not used since 1947.			
Water flows by gravity via brook to reservoir (dam) from which it is pumped with chlorination to system.				No treatment; water flows by gravity to system; pumps are available if needed.			Waters are lime-treated (av. 6.27 ppm) at intakes under automatic pH control to pH 6.9 to 7.2, chlorinated and treated with fluoride** (1 p.p.m. total) and supplied to system by gravity. Booster pumps are used on low level systems and at the Robie pumping station. Long and Chain Lake waters are pumped into reservoir to augment Spruce Hill Lake supply for the high level system.***			
Reservoir (dam) ..... 1,300 (*see also* Reserve Mines)				Open earth reservoir 200			Concrete reservoir 3,640			
							Elevated tank 50			
1954	1958			Unknown			1954		1958	
1.38	3.17†						3.79 - Spruce Hill Lake		9.98	
							5.93 - Long and Chain Lakes			
							9.72 - Total (Max. 10.75)			
The major industrial users are a fish processing plant and coal mines using in 1954 about 46 per cent of total pumpage of 3.0 to 3.8 m.g.d.				No major industrial users			Major industrial users are C.N. Rys.; shipyards; fish plants; ice storage plants; beverage plants; shipping; a candy factory. Most industrial use, which is 50 per cent of total pumpage, is from Long and Chain Lakes, i.e. the low level system.			
*Reserve Mines, Dominion and 250 persons outside Glace Bay city limits				.....			* Metropolitan Halifax, including Dartmouth, Armdale, Fairview, Cole Harbour, Eastern Passage, Imperoyal, Bedford, etc. had a population of 164,200 in 1956.			
† Glace Bay - 2.96 m.g.d.							** Fluoridation started in late 1956.			
Dominion - 0.109 m.g.d.							*** See also *Municipal Utilities* September, 1953, p. 23.			
Reserve Mines - 0.101 m.g.d.										

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA – (Continued)

Municipality	HANTSBORDER	HANTSPORT
Population served:		1951 / 1954 / 1956
In municipality		1,131[c] / 1,300 / 1,298[d]
Outside municipality		500* / No data
Total		1,800
Date(s) of survey		August 20, 1954
Ownership		Municipally owned and operated
Source of supply	*see* Hantsport	Davison Lake (8 miles distant) and two artesian wells
Treatment		No treatment; lake water flows by gravity to reservoir and system. Wells are pumped to large reservoir.**
Storage capacity (thousand gallons)		Open reservoir ..... 4,000 Open stone reservoir (not in use) 500
Consumption (average in m.g.d.)		1954: 0.10
Industrial use		The main industrial users are lumber and paper mills, a gypsum company, canning and candy factories and a pressed fibre company. Industrial use is estimated at about 20 per cent of total pumpage.
Remarks:		* Hantsborder ** Only one well is normally used and the water supply is usually 60 per cent lake, 40 per cent well water.

Municipality	LEQUILLE	LIVERPOOL
Population served:	1951 / 1956	1951 / 1954 / 1956
In municipality	476[c] / 481[d]	3,535[c] / 4,000 / 3,500[d]
Outside municipality	0 / 0	0 / 0 / 0
Total	476 / 481*	3,535* / 4,000* / 3,500*
Date(s) of survey		August 23, 1954
Ownership		Municipally owned and operated
Source of supply	Supplied partly from Annapolis Royal	Spring-fed lake in mountains, 3 miles distant
Treatment		Water flows by gravity to system with chlorination ½ mile from lake.
Storage capacity (thousand gallons)		None but lake 163,000
Consumption (average in m.g.d.)		1954: 0.50
Industrial use		Major industrial users are a fish processing plant, steel and engine mfg., a bottling plant and a dairy. Industrial use is estimated at 33 per cent of total pumpage.
Remarks:	* Not all served with water: only 248 in 1954.	* Town population is only about 90 per cent served with water.

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Candda, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA —(Continued)

INVERNESS

1951	1954	1956
2,360[c]	2,300	2,026[d]
0	0	0
2,360	2,300	2,026

August 31, 1954 .....
Municipally owned and operated .....
Springs, 2½ miles distant .....

No treatment; spring water collected in reservoirs, flows by gravity to system.

Two earth reservoirs ... 1,000 and 750

Not known .....

The main industrial users are the C.N. Rys. and coal mines. Industrial use is estimated at 5 per cent of total use.

.....

KENTVILLE

1951	1954	1956
4,240[c]	4,200	4,937[d]
	1,300*	
	5,500	

August 20, 1954 .....
Municipally owned and operated .....
Magee Lake and Mill Brook, 7 miles distant

Lake water flows by gravity to plant, alum-and lime-treated, settled, rapid sand-filtered (2), additional lime treatment, then by gravity to reservoirs and systems with chlorination at reservoirs.**

Two earth reservoirs ..2,000 and 1,000
Two open concrete reservoirs .....1,000 each
One elevated tank 50

1954	1958
0.575 (Max. 0.60)	0.650

The major industrial users are C.P. Ry., a food plant, army camp and an experimental station, all using about 50 per cent of the total consumption.

* Aldershot army camp and a sanatorium; *see also* Water Survey Report No. 12.
** Fluoridation was begun in 1956.

LAWRENCETOWN

1951	1954	1956
689[c]	800	787[d]
0	0	0
689	800	787

August 21, 1954 .....
Municipally owned and operated .....
Springs and surface run-off. A well is a standby supply.*

No treatment; water from surface run-off and springs, collected behind dam, flows by gravity to system.

Dam reservoir 600

1954
0.10 (est.)

No major industrial users .....

* This reserve well supply is very seldom used.

LOUISBURG

1951	1954	1956
1,120[c]	1,200	1,314[d]
0	0	0
1,120	1,200	1,314

September 3, 1954 .....
Municipally owned and operated .....
Kelly Lake, 3 miles distant* .....

Water, chlorinated at lake, flows by gravity to system.

None .....

1954
0.100 (Max. 0.15)

The only large industrial users are a fish processing plant, and the Dominion Coal and Steel Corp. Ltd. Industrial use is about 15 per cent of total pumpage.

* Gull, Peter, Morrison and Stewart Lakes can be joined to Kelly Lake to give a total supply of 8 m.g.d.

LUNENBURG

1951	1954	1956
2,816[c]	2,800	2,859[d]
100	150	150
2,916	2,950*	3,009*

December, 1951 and August 25, 1954 ..
Municipally owned and operated .....
Cantelope Lake, 3 miles distant .....

No treatment; water is pumped to reservoir and system.**

Open earth reservoir 840

1951	1954
0.24	0.26 (Max. 0.30)

The major industrial users are the C.N. Rys., fisheries, a foundry and a shipyard. In 1954 industrial use is estimated at 44 per cent of total use.

* Town population is about 97 per cent served with water.
** Chlorination was started during 1957-58.

MAHONE BAY

1951	1954	1956
1,019[c]	1,019	1,109[d]
0	0	0
1,019	1,019*	1,109*

August 21, 1954 .....
Municipally owned and operated .....
Oakland Lake, 1¼ miles distant .....

Water from spring-fed lake is pumped with chlorination to reservoir and system.

Open rock reservoir 3,000

1954
0.074

No major industrial user. A boat building plant has its own well (6,000 g.p.m. capacity).

* Town population is about 50 per cent served with water.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA—(Continued)

Municipality	MIDDLETON			MULGRAVE		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	1,506[c]	1,800	1,769[d]	1,212[c]	1,000	1,227[d]
Outside municipality	0	0	0	0	0	0
Total	1,506	1,800	1,769	1,212	1,000*	1,227
Date(s) of survey	August 21, 1954			August 31, 1954		
Ownership	Municipally owned and operated			Owned and operated by Canadian National Railways Ltd.		
Source of supply	Lily Lake, 2 miles distant*			Chain-of-Lakes Brook, spring-fed, 4 to 5 miles distant.		
Treatment	Water from dam on spring-fed lake flows by gravity, with chlorination, to reservoir and system.			No treatment; except chlorination (sodium hypochlorite); water flows by gravity via brook to reservoir and system.		
Storage capacity (thousand gallons)	Open reservoir 500			Open earth reservoir (dam) 1,000		
Consumption (average in m.g.d.)	1954: 0.200	1958: 0.185		1954: 0.100		
Industrial use	The main industrial users are a cannery and an apple processing plant.			The major industrial users are C.N. Rys., and shipping; they together use over 95 per cent of total water used.		
Remarks:	* There is one standby well which is very seldom used.			* Only 20 per cent of population served with water in 1954.		

Municipality	OXFORD			PARRSBORO		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	1,466[c]	1,400	1,545[d]	1,906[c]	2,000	1,849[d]
Outside municipality	0	0	0	0	0	0
Total	1,466	1,400	1,545	1,906	2,000	1,849
Date(s) of survey	September 10, 1954; 1958			August 19, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	Three deep wells.*			Streams and spring, 4½ miles distant		
Treatment	No treatment; well water is pumped, spring water flows by gravity, to reservoir and system.			Water flows by gravity with chlorination to system. Spring water may also be pumped.		
Storage capacity (thousand gallons)	Two open earth reservoirs .. 400 and 300			Two reservoirs .....3,000 (total)		
Consumption (average in m.g.d.)	1954: 0.085			No data		
Industrial use	The main industrial users are a foundry, a furniture factory, a creamery and woollen mills. Industrial use is estimated at 13 per cent of total pumpage.			No data		
Remarks:	*In 1958 supply was supplemented from time to time by springs and by pumpage from Philip River.					

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA – (Continued)

NEW GLASGOW

1951	1954	1956
9,933[c]	10,000	9,998[d]
	150	No data
	10,150	

September 7, 1954

Municipally owned and operated

Forbes Lake, 6 miles distant fed by springs and a small watershed.*

Water flows by gravity to the reservoir with chlorination and thence to system. In 1958 fluoridation of the water was being planned.

Open earth reservoir 2,000

1954

2.03 (Max. 2.48)

The major industrial users are two steel companies, C.N. Rys., a concrete plant, Trenton Car Co., a woodworking and paint plant, and a beverage plant. Industrial use is about 40 per cent of pumpage.

* Two small lakes also in watershed. In an emergency, Stellarton can supply low-lying areas of New Glasgow.

NEW WATERFORD

1951	1954	1956
10,423[c]	10,000	10,381[d]
	4,000*	No data
	14,000	

September 3, 1954

Owned and operated by the Dominion Utilities Co. Ltd., a subsidiary of the Eastern Light and Power Co. Ltd.

Waterford Lake; Killkenny Lake is pumped into Waterford Lake. Water is purchased from Seaboard Power Corp. Ltd. at Waterford Lake.

Water is pumped with chlorination to standpipe and system.

Standpipe 300

1954

1.18 (Max. 1.3)

The major industrial use, 31 per cent of total pumpage, is by three coal mines.

* Includes New Victoria - 1,000 population.

NORTH SYDNEY

1951	1954	1956
7,354[c]	7,500	8,125[d]
	7,850*	No data
	15,350	

September 1, 1954

Municipally owned and operated

Potter's Lake, ¾ mile distant

Water from spring-fed lake is pumped with chlorination to reservoir and system.

Open rock reservoir 2,000

1954

2.2 (Max. 2.4)

The main industrial users are the C. N. Rys., a medicinal oil plant, a cold storage plant and a marine railway.

* Includes Florence (150 population) Centreville (100 population) and Sydney Mines (7,600 population). Sydney Mines buys water and supplies Centreville.

PICTOU

1951	1954	1956
4,259[c]	4,260	4,564[d]
0	0	0
4,259	4,260*	4,564

September 8, 1954

Municipally owned and operated

13 artesian wells, 2 miles distant; 2 wells in town.

Water from wells, except 2 in town, is chlorinated (NaOCl) and pumped to standpipe and system.

Standpipe 500

1954

0.25 (Max. 0.325)

The main industrial users are C.N. Rys., a canning factory, a biscuit mfg. company and shipyards. Total industrial use is about 3 per cent of total consumption.

*Only about 95 per cent served with water.

PORT WILLIAMS

1951	1954	1956
656[c]	800	805[d]
0	0	0
656	800*	805**

September 9, 1954

Owned and operated by Mrs. Harvey

Springs and one deep well

No treatment; well water is pumped to system or reservoir. Springs also feed the reservoir; water flows by gravity from reservoir to system.

Open reservoir 1,000

Not known

The two main users are a meat and fish packing plant and shipping.

*Only about 50 per cent served with water.

** Presumably only partly served with water.

RESERVE MINES (DISTRICT OF RESERVE)

1951	1954	1956
2,817[c]	3,300	2,789[d]
0	0	0
2,817	3,300	2,789

September 2, 1954

Glace Bay and Dominion Coal and Steel Corp. Ltd. each pay one half the cost of pumping.

Supplied by Glace Bay, N.S.

see Glace Bay, N.S.

Standpipe 90

1954	1956
0.107	0.101

No data

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA -- (Continued)

Municipality	SPRINGHILL*			STELLARTON			
Population served:	1951	1954	1956	1951	1954	1956	1958
In municipality	7,138[c]	7,500	7,348[d]	5,575[c]	6,000	5,445[d]	5,600
Outside municipality	0	0	0	0	0	0	0
Total	7,138	7,500	7,348	5,575	6,000	5,445	5,600
Date(s) of survey	August 18, 1954			September 8, 1954			
Ownership	Municipally owned and operated			Municipally owned and operated			
Source of supply	Springs, 7½ miles distant			East River, ½ mile above town			
Treatment	No treatment; water from behind dam, spring-fed, flows by gravity to standpipe and system.			Water is pumped from river with chlorination to reservoir and system. In 1958 a gravel filter was used.			
Storage capacity (thousand gallons)	Standpipe 155			Open reservoir 1,500			
Consumption (average in m.g.d.)	1954			1954	1958		
	0.34 (Max. 0.375)			0.750	1.0		
Industrial use	The main users are coal mines* and a dairy, using about 5 per cent of total consumption.			The major industrial users are C.N. Rys., a coal mine, lumber mill, dairies and a County Home. Industrial use is about 50 per cent of total pumpage.			
Remarks:	* A shut down of mines in 1958-59 decreased the town population and water use in this community.			Stellarton, at times, also supplies part of New Glasgow, N.S.			

Municipality	TRURO			WESTVILLE		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	10,756[c]	10,000	12,250[d]	4,301	4,300	4,247[d]
Outside municipality	0	0	0	0	0	0
Total	10,756	10,000*	12,250	4,301	4,300*	4,247
Date(s) of survey	August 19,1954			September 8, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	Lepper Brook, 1½ miles distant; four artesian wells and Salmon River.**			Middle River in town and three artesian wells, 3 miles distant.		
Treatment	Water from dam on Lepper Brook (spring-fed) is chlorinated and flows to system by gravity. Well water is not treated.			River water, naturally-filtered through sand and gravel (changed yearly) is pumped to reservoir and system. Wells also supply the reservoir by gravity.**		
Storage capacity (thousand gallons)	Reservoir (earth dam) 100,000			Open rock reservoir 1,500		
Consumption (average in m.g.d.)	1954			1954		
	1.3 (Max. 1.5)			0.140		
Industrial use	The main industrial users are C.N. Rys., a wood working plant, textile plants and a creamery, together using about 50 per cent of total consumption.			The only major industry is a coal mine. Industrial use is estimated at 20 per cent of total consumption.		
Remarks:	*About 85 per cent served with water ** Artesian wells are a standby supply, not used since 1952. Salmon River is an additional emergency supply.			* About 84 per cent served ** Wells were dry at time of survey. Normal flow is small.		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

C. NOVA SCOTIA — (Concluded)

SYDNEY			SYDNEY MINES			TRENTON		
1951	1954	1956	1951	1954	1956	1951	1954	1956
31,317[c]	35,000	32,162[d]	8,410[c]	8,600	8,731[d]	3,089[c]	3,200	3,240[d]
0	0	0		No data	No data*	0	0	0
31,317	35,000*	32,162*				3,089	3,200*	3,240
September 3, 1954			August, 1954			September 7, 1954		
Municipally owned and operated			Municipally owned and operated			Municipally owned and operated		
Middle Lake, 5 miles distant**			Purchased from North Sydney, N.S.			Two deep wells at Lowdens Brook		
Water is pumped from lake to reservoir, chlorinated and thence to system. Lake is treated with $CuSO_4$ in summer.			*see* North Sydney, N.S.			No treatment; each well is pumped alternatively to system.		
One reservoir (dam) 200,000			Reservoir 1,200			Open concrete reservoir 1,000		
1954			1956			1954		
4.16 (Max. 5.0)			0.850			0.233		
The main industrial user is the C.N. Rys., using about 5 per cent of pumpage.			Industrial use is estimated at about 41 per cent of total use.			The only major industrial user is a beverage plant. Industrial use is about 3 per cent of total pumpage.**		
* About 95 per cent served with water ** Dumeresq Lake feeds Middle Lake, about 2,300 acres in size.			* Supplies Centreville, about 100 in 1954.			* About 90 per cent served with water. ** Municipality also supplies fire protection to a steel works, Eastern Car Co., and a steam plant.		

WINDSOR			WOLFVILLE			YARMOUTH		
1951	1954	1956	1951	1954	1956	1951	1954	1956
3,439[c]	3,500	3,651[d]	2,313[c]	2,300	2,497[d]	8,106[c]	7,000	8,095[d]
No data	100	110(est.)	0	0	0	0	0	0
	3,600	3,761	2,313	2,300*	2,497*	8,106	7,000*	8,095
August 20, 1954			August 20, 1954; 1955			August 24, 1954		
Municipally owned and operated			Municipally owned and operated			Municipally owned and operated		
Mill Lake, 6 miles distant			Streams and artificial lake in South Mountain, 4 miles distant.			Lake George, 8½ miles distant		
Lake, fed by springs and surface run-off, flows by gravity with chlorination to system.			No treatment; water from brooks forms artificial lake (69 m.g. capacity) which flows by gravity to reservoirs, then is pumped to system.**			Lake, fed by run-off, flows by gravity with chlorination at town limits.**		
Open concrete reservoir 5,000			Two reservoirs .....6,000 and 7,000			Open earth reservoir 2,000		
1954			1954			1954		
0.58 (Max. 0.65)			0.350 (est.)			0.47 (Max. 0.50)		
The major industrial users are C.P. Ry., a gypsum plant, and fertilizer and textile plants. These use about 10 per cent of total consumption.			The main industrial users are a woodworking plant and an apple processing plant.			The main industrial users are C.N. Rys., C.P. Ry., a fish processing plant, a creamery, a beverage plant, a cold storage plant and a cotton mill. Industrial use is about 27 per cent of total pumpage.		
.....			*About 750 students are also supplied for ¾ of the year. ** In 1955 municipality was adding a 5 m.g. reservoir and beginning chlorination; fluoridation of the water is also planned.			* 95 per cent served with water ** In 1958 pH was controlled by lime addition.		

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK

Municipality	ALBERT	ANDOVER		
Population served:	1955	1951	1954	1956
In municipality	300	851[c]	775	827[d]
Outside municipality	0	0	0	0
Total	300	851	775	827
Date(s) of survey	March 30, 1955	August 1, 1954		
Ownership	Municipally owned and operated	Municipally owned; operated by a Public Utilities Commission.		
Source of supply	Several springs	Brook and springs, 1½ miles from town		
Treatment	No treatment; water is supplied by gravity to concrete reservoir and system.	Water flows by gravity to system from dam with chlorination (sodium hypochlorite).		
Storage capacity (thousand gallons)	Concrete reservoir 500	Dam 1,000		
Consumption (average in m.g.d.)	Not known	1954: 0.050 (est.)		
Industrial use	No major industrial users	No major industrial users		
Remarks:				

Municipality	CAMPBELLTON			CHATHAM		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	7,754[c]	8,500	8,389[d]	5,223[c]	5,200	6,332[d]
Outside municipality		150	No data	0	0	0
Total		8,650		5,223	5,200	6,332
Date(s) of survey	September 15, 1954			August 17, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	Surface run-off (impounding reservoirs)			Three deep wells; two only in use*		
Treatment	Water from impounding reservoirs flows by gravity to system with chlorination.			No treatment; water is pumped to standpipe and system.		
Storage capacity (thousand gallons)	Four open earth reservoirs ..... 5,000, 100,000, 125,000 and 340,000			Standpipe 420		
Consumption (average in m.g.d.)	1954: 1.3 (Max. 1.5)			1954: 0.4 (Max. 0.525) (Min. 0.358)		
Industrial use	Major industrial users are a lumber mill, a beverage plant, dairies, hospitals and the C.N. Rys. Industrial use in 1954 is estimated at 8 per cent of total pumpage.			Major industrial users are a foundry, beverage plant and lumber mill using about 5 per cent of total pumpage.		
Remarks:				* Reserve supply is from old wells and a brook. The third and new well is expected to be in operation in 1955.		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK – (Continued)

ATHOLVILLE

1951	1955	1956
2,185[c]	3,000	2,275[d]
0	0	0
2,185	3,000	2,275

January 19, 1955

Municipally owned and operated

Artesian well, 47 feet deep

No treatment; water flows by gravity to system.

One reservoir 300

1954
0.084

No data

BATH

1951	1954	1956
756[c]	1,000	895[d]
0	0	0
756	1,000	895

August 9, 1954

Municipally owned and operated

Springs and surface run-off

No treatment; water flows by gravity from dam in hills, one mile from town.

Reservoir (earth dam) 1,000

Not known

No data

BATHURST

1951	1954	1956
4,453[c]	4,400	5,267[d]
No data	800	400
	5,200	5,667

September 14, 1954; May 31, 1957

Municipally owned and operated

Carter's Brook and Middle River

Carter's Brook, fed by springs, is pumped to standpipe and system with chlorination. Middle River is pumped into Carter's Brook.

One standpipe 400

Two open earth reservoirs ..... 3,000 and 40,000

1954	1956
0.70	0.6 (Min. 0.5)

Plant capacity - 1.5mgd. (Max. 1.0)

Main industrial users are machine shops, a creamery, C.N. Rys., a pulp and paper plant and shipping. In 1956 about 20 per cent of pumpage was used industrially.

In 1956 the University started using its own well. Middle River supply is used about once every two years but use will increase after 1957. An industrial pipeline from the Nipisiquit River is also being considered.

CLAIR

1955

No data*

March 23, 1955

Clair Water Co. Ltd.

Thompson Lake

No treatment; water flows by gravity to small system.

One concrete dam 50

1954

6,000 g.p.d. (Max. 9,000 g.p.d.) (Min. 3,000 g.p.d.)

No major industrial users

*Probably about 100 served

DALHOUSIE

1951	1954	1956
4,939[c]	5,000*	5,468[d]
0	0	0
4,939	5,000	5,468

September 14, 1954

Municipally owned and operated†

Charlo Lake, 9 miles distant; spring-fed brook (McNeish's Dam), 2 miles distant.** A well is a standby supply.

Charlo Lake is gravity-fed to the paper mill where it is chlorinated and pumped to system. Brook is gravity-fed from behind McNeish's Dam with chlorination (NaOCl) to town pumphouse.

Standpipe 425

Open earth reservoir 1,500

1954	1958
Domestic - 0.25	0.30
Industrial - 15	
15.25	

The only industrial user is a paper company, using 98.5 per cent of pumpage.

*About 98 per cent served with water.

†System is partly owned by the New Brunswick International Paper Co.

**About 60 per cent Charlo Lake and 40 per cent McNeish Dam water is normally used.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK – (Continued)

Municipality	DIEPPE			EDMUNDSTON			
Population served:	1951	1954	1956	1951	1954	1956	1958
In municipality	3,402[c]	4,500	3,876[d]	10,753[c]	11,450	11,997	12,000
Outside municipality	0	0	0	0	0	0	500
Total	3,402	4,500	3,876	10,753	11,450	11,997	12,500
Date(s) of survey	1954			Aug. 6, 1954; June, 1958; April 28, 1959			
Ownership	Municipally owned and operated			Municipally owned and operated			
Source of supply	Purchased from Moncton, N.B.			In 1954 three wells on bank of Madawaska River; in 1958 and 1959 Madawaska River; in late 1959 three wells in Iroquois River valley used.			
Treatment	*see* Moncton, N.B.			In 1954 no treatment; water from wells enters pumphouse and is pumped to standpipe and system. During 1958-59 Madawaska River was pumped to system with chlorination. New wells pumped in late 1959 direct to system with no treatment.			
Storage capacity (thousand gallons)				Two standpipes .....500 and 875			
Consumption (average in m.g.d.)				1954: 1.0 (Max. 1.2, Min. 0.95)		1958: 1.5	
Industrial use				Major industrial users are a pulp and paper company, the C.N. Rys. and C.P. Ry., and a shirt factory, using in 1954 about 30 per cent of the total pumpage.			
Remarks:							

Municipality	GRAND FALLS			HARTLAND		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	2,365[c]	2,400	3,672[d†]	1,000[c]	1,000	1,022[d]
Outside municipality	0	0	0	0	0	0
Total	2,365	2,400	3,672	1,000	1,000	1,022
Date(s) of survey	August 6, 1954; 1957			August 9, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	In 1954, a brook and Little River. In 1957, wells were under development.*			Springs near Saint John River		
Treatment	No treatment on brook water which flows by gravity from dam reservoir to system. Little River is pumped and chlorinated (sodium hypochlorite).			No treatment; water pumped from spring to reservoir and flows by gravity to town.		
Storage capacity (thousand gallons)	Dam .....2,000 One reservoir 300			One concrete reservoir 150		
Consumption (average in m.g.d.)	1954: 0.25 (Max. 0.30)		1957: 0.40	1954: 0.15		
Industrial use	No industrial users			Major industrial users are a potato chip plant and starch factory. Industrial use estimated at 33 per cent of total pumpage.		
Remarks:	* Little River is a supplementary supply. Replacement of surface water with well water was being considered in 1957-58.					

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.
[†] Boundary change since 1951.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK — (Continued)

FAIRVILLE

1951	1956
406[c]	1,193[d]
0	0
406	1,193
.....	
Included in Lancaster, N.B.	
.....	
see Lancaster, N.B. and Saint John, N.B.	
.....	
.....	

FREDERICTON

1951	1954	1956	1958	1959
16,018[c]	16,000	18,303[d]	18,000	18,016
0	0	0	0	0
16,018	16,000	18,303	18,000	18,016*

August 12, 1954; August 31, 1957; July, 1958; August, 1959

Municipally owned and operated

In 1954, Saint John River and two wells. In 1956 three wells with river water as supplementary or standby supply.* In 1958 and 1959 five wells.** In late 1959, 6 test wells drilled, of which at least one will be used.

In 1954, river water was pumped with chlorination from intake well to coagulating basins (alum), rapid sand-filtered (5), post-chlorinated, lime added to control pH to 7.0 to 7.4, and repumped to reservoirs and system. Wells were pumped to reservoirs and thence to system by gravity with no treatment. In 1956, wells were pumped to reservoirs and thence by gravity with chlorination to system. In 1959, wells on the south side (2) are pumped with aeration into clear well, lime treated, chlorinated and repumped to reservoir and system. Wells on the north side (3) are pumped with periodic chlorination to reservoirs and system.

In 1954 clear well 300
3 covered concrete reservoirs ..... 35, 100 and 2,000
2 open concrete reservoirs ..... 190 and 230
In 1958, an additional reservoir 1,000

1954	1956	1958	1959	Av.	Max.	Min.
wells 0.30	1.05 (Max. 1.2)	1.3	south side	1.4	1.8	1.0
river 1.3			north side	0.25	0.3	0.2
				1.65	2.1	1.2

Plant capacity (1959) -3.3 m.g.d. + 1.5 m.g.d. (original filter plant)

Major industrial users are dairies, cold storage, beverage plants, air-conditioning, and apple and potato factories.

* Only about 17,500 served with water.
** In 1954 river water supplied 11,000 or 90 per cent of population on south side of city; wells supplied 4,000 or 100 per cent of population on north side of city. In 1956, one well supplied south side and two supplied north side. In 1958 and 1959 two gravel-wall wells (149 and 225 feet deep) supplied the city south of the Saint John River and 3 drilled rock wells (200, 300 and 400 feet deep) supplied the city north of the Saint John River. The original filtration plant, using Saint John River water, remains as a standby supply for the city south of the river. Bridge St. well is expected to replace Killarney and Range wells on the north side.

LANCASTER

1951	1954	1956
12,320[c]*	12,000	12,371[d]
0	No data	2,244*
12,320		14,615
1954-1956		
Municipally owned and operated		
Spruce Lake water from Saint John, N.B.**		
Distribution and treatment by city of Saint John.		
see Saint John, N.B.		
.....		
.....		

* Parish
** Well supply in reserve

MARYSVILLE

1951	1954	1956
2,152[c]	2,200	2,539[d]
0	0	0
2,152	2,200	2,539
August 13, 1954		
Municipally owned and operated		
Two wells		
No treatment; water pumped to elevated tank and system.		
Elevated tank (wood) 50		
1954		
0.11 (Max. 0.125)		
No major industrial users		

Can. Cottons Ltd. previously used town water and water from a nearby brook but this plant was not operating at time of survey.

MILLTOWN

1951	1954	1956	1958
2,267[c]	2,250	1,975[d]	2,250
0	0	0	0
2,267	2,250	1,975	2,250
August 10, 1954			
Calais Water and Power Co., Calais, Maine, U.S.A. and municipality.			
Purchased from St. Stephen, N.B.*			
see St. Stephen, N.B.			
One reservoir in Milltown 2,000			
1956			
0.25			
A textile mill uses this water for domestic purposes.			

* An emergency supply is available from St. Croix River through a filter plant in Calais, Maine, U.S.A. where water is filtered and chlorinated.

88095-5—6½

DESCRIPTION OF MUNICIPAL WATER SUPPLIES

D. NEW BRUNSWICK – (Continued)

Municipality	MONCTON
Population served:	1951 / 1954 / 1956 / 1958
In municipality	27,334[c] / 32,000 / 36,003[d] / 40,000
Outside municipality	17,949 / 7,000* / 14,015 / No data
Total	45,283** / 39,000 / 50,018** /
Date(s) of survey	August 17, 1954
Ownership	Municipally owned and operated
Source of supply	Surface run-off in reservoirs, 4 miles distant. Reserve supply is 7 wells.
Treatment	Water from impounding reservoirs flows by gravity to city pumphouse where it is pumped with chlorination to system. Wells are pumped direct to system.
Storage capacity (thousand gallons)	Two impounding reservoirs (Irishtown and McLaughlin) .....1,300,000 (total)
Consumption (average in m.g.d.)	1954: 4.6 (Max. 5.2; Min. 3.8)
Industrial use	The major industrial users are a meat packing plant, a biscuit factory and the C.N. Rys., using about 20 per cent of total pumpage.
Remarks:	* Served in Sunny Brae and Dieppe who purchase water from Moncton. System established originally in 1878. In 1953-54, because of water shortages, a study of development of Turtle Creek as another source was carried out. ** Not all served with water; includes towns of Dieppe, Sunny Brae and parishes of Cloverdale and Moncton.

Municipality	PLASTER ROCK			ROTHESAY*		
Population served:	1951	1954	1956	1951	1954	1956
In municipality	1,368[c]	1,500	1,403[d]	896[c]	900	802[d]
Outside municipality	0	0	0	0	0	0
Total	1,368	1,500	1,403	896	900**	802
Date(s) of survey	August 7, 1954			August 14, 1954		
Ownership	Municipally owned and operated			Municipally owned and operated		
Source of supply	Tobique River			Brook		
Treatment	Water is pumped from river with chlorination (sodium hypochlorite) at pumps.			Water is pumped from dam reservoir on brook with chlorination (10 lb/m.g.) to system.		
Storage capacity (thousand gallons)	Elevated tank (wood) 135			Reservoir (earth dam) 1,000		
Consumption (average in m.g.d.)	1954: 0.090			1954: 0.095		
Industrial use	The main industrial users are the Fraser Pulp and Paper Co. and the C.P. Ry.			No major industrial users		
Remarks:	System organized in 1948			* Considered a part of the Metropolitan Saint John area. ** Only 66 per cent served.		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SUPPLIES

D. NEW BRUNSWICK – (Continued)

NEWCASTLE

1951	1954	1956
4,248[c]	4,250	4,670[d]
0	0	0
4,248	4,250 *	4,670

August 17, 1954 .....

Municipally owned and operated .....

4 artesian wells, 3 together and one near reservoir which is mostly used.** ....

No treatment; water pumped mainly from one well to system. .....

Covered concrete reservoir 120

1954

0.55 (Max. 0.60)

The main industrial users are a creosote plant and C.N. Rys. .....

* Only 60 per cent served

** One well which has softer water, supplies 75 to 80 per cent of the demand; other wells only used when this soft water well can not meet the demand.

PERTH

1951	1954	1956
835[c]	700	893[d]
0	0	0
835	700	893

August 7, 1954 .....

Municipally owned and operated by a Public Utilities Commission

Had's Brook (spring-fed) .....

No treatment; water supplied by gravity to system.

Covered concrete reservoir 80

Unknown .....

No major industrial users .....

.....

SACKVILLE

1951	1954	1956	1958
2,873[c]	3,000	2,849[d]	2,900
700	800*	700	No data
3,573	3,800	3,549	

August 18, 1954 .....

Municipally owned and operated .....

3 artesian wells, 3 miles distant .....

No treatment; water flows from reservoirs and wells by gravity to system. Pumps available if required.

Two earth reservoirs ...11,000 (each)**

1958

1.0

The major industrial users are a foundry, paper box company and the university.***

* Middle Sackville (500 served)

** Dams near wells form the reservoirs.

*** Water is supplied to 1,000 students at the university for 9 months each year.

ST. ANDREWS

1951	1954	1956
1,458[c]	1,450*	1,534[d]
0	0	0
1,458	1,450	1,534

August 11, 1954 .....

Municipality and Canadian Pacific Railway **

Chamcook Lake, 2 miles distant .....

Water is pumped to system with chlorination.

Two open, concrete reservoirs ..... 50 and 210

1954

0.096 (Max. 0.16)

The two major industrial users are the C.P. Ry. and an ice factory.

* Increases to 2,200 in summer

** The municipality purchases water from the C. P. Ry.

ST. GEORGE

1951	1954	1956
1,263[c]	1,250	1,322[d]
0	0	0
1,263	1,250*	1,322

August 11, 1954 .....

Municipally owned and operated .....

Two artesian wells in town .....

No treatment; water is pumped to standpipe and system.

Standpipe 195

1954

0.045 (Max. 0.050)

The only major industrial user is a pulp and paper company using about 20 per cent of total pumpage.

* Town is about 50 per cent served; system organized in 1950.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK – (Continued)

Municipality	SAINT JOHN††		
Population served:	1951	1954	1956
In municipality	50,779[c]*	68,500**	52,491[d]*
Outside municipality	26,662	15,000	32,722
Total	77,441	83,500	85,213
Date(s) of survey	August 13, 1954		
Ownership	Municipally owned and operated		
Source of supply	Loch Lomond, 10 miles distant; Spruce Lake, 6 miles distant and a well. Loch Lomond supplies Saint John and Saint John East, (everything east of Saint John River); Spruce Lake supplies Saint John West and Lancaster with a well as standby supply.		
Treatment	Water from lakes flows by gravity with chlorination; Spruce Lake at Lake, Loch Lomond part way to city. Spruce Lake supply is pumped to some areas.		
Storage capacity (thousand gallons)	Standpipe (Spruce Lake supply) ..... 300 Spruce Lake watershed ..... 1,529 m.g. Loch Lomond watershed ..... 6,326 m.g.		
Consumption (average in m.g.d.)	1954 (Loch Lomond supply) 8.93 (Max. 10.0)	1954 (Spruce Lake) 9.5 (Max. 10.0) (Min. 5.0)	
Industrial use	Industrial use of Spruce Lake supply is about 74 per cent for shipping, a brewery, and principally in the pulp and paper plant. A sugar refinery uses Loch Lomond water from city mains.		
Remarks:	* Incorporated city ** Presumably includes Lancaster and Rothesay. †† Metropolitan area includes city of Lancaster, town of Rothesay and parishes of Lancaster, Rothesay, Simonds and Westfield. Total population in 1956 - 86,015		

Municipality	SHEDIAC			SUNNY BRAE	
Population served:	1951	1954	1956	1951	1956
In municipality	2,010[c]	2,000	2,173[d]	2,048[c]	2,080[d]*
Outside municipality	0	0	0	0	0
Total	2,010	2,000	2,173	2,048	2,080
Date(s) of survey	September 13, 1954				
Ownership	Municipally owned and operated				
Source of supply	Two wells, 200 feet and 400 feet deep; No. 2 well, 400 feet deep, is normally used.			*see* Moncton, N.B.	
Treatment	No treatment; water is pumped to tank and system.				
Storage capacity (thousand gallons)	Elevated tank 40				
Consumption (average in m.g.d.)	1954: 0.14	1958: 0.20			
Industrial use	No major industrial users				
Remarks:				*Annexed to Moncton city by 1956	

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

D. NEW BRUNSWICK – (Concluded)

ST. LEONARD

1951	1954	1956	1958
1,419[c]	1,500	1,593[d]	1,600
0	0	0	0
1,419	1,500	1,593	1,600

August 6, 1954

Municipally owned and operated

Big Brook, 3 miles distant

Water is pumped from behind dam to tank and system with chlorination (NaOCl).

Elevated tank 100

1954	1958
0.025	0.05

No major industrial users

ST. QUENTIN

1951	1955	1956
1,514[c]	1,500	1,935[d]
0	0	0
1,514	1,500	1,935

January 25, 1955

Municipally owned and operated

Range 14 Lake

No treatment; water is pumped to system. Sometimes $CuSO_4$ treatment in summer.

Reservoir 50

No data

No data

ST. STEPHEN

1951	1954	1956	1958
3,769[c]	3,760	3,491[d]	3,750
	6,250*	No data	No data
	10,010		

October 8, 1954

Municipally owned and operated by a Public Utilities Commission.

Well, 4 miles distant. St. Croix River through filter plant in Calais, Me., as standby supply**

No treatment; pumped to reservoir and then flows by gravity to system.

Covered concrete reservoir 1,200
Standby concrete reservoir .... 2,000 (Milltown)

1954
0.960

The major industrial users include a candy plant; a canning factory; a textile mill and the C.P. Ry.

* Milltown (2,250) and Calais, Me. (4,000) purchase water from St. Stephen.

** Plant maintained by all 3 municipalities but has not been used since about 1938-40

SUSSEX

1951	1954	1956	1958
3,225[c]	3,000	3,403[d]	3,400
0	0	0	0
3,225	3,000	3,403	3,400

August 14, 1954

Municipally owned and operated

Ward's Creek

Water is pumped with alum and carbon addition to coagulating and settling basins, then rapid sand-filtered (2), lime-treated to pH 7.2 to 7.4 and chlorinated at clear well and repumped to system.

Concrete reservoir 260

1954
0.36 (Max. 0.40)

The major industrial users are a dairy, lumber mill, beverage plant and a silk mill.

WOODSTOCK

1951	1954	1956
3,996[c]	4,000	4,308[d]
0	0	0
3,996	4,000	4,308

August 9, 1954

Municipally owned and operated

Saint John River and wells

In 1954 river water was pumped to reservoir with alum addition, rapid sand-filtered (2) and repumped with chlorination to system. In 1955, one well only being used with no treatment and river water as a standby supply.*

Concrete reservoir 200
Standpipe 400

1954	1956
0.30	0.40

The major industrial users are a dairy, a woodworking plant and the C.N. Rys. and C.P. Ry.

* In 1958 two wells, capacity 1 m.g.d. were being used. These two wells are on Island Park in the centre of the Saint John River.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC

Municipality	AMQUI			BARRE
Population served:	1951	1955	1958	
In municipality	2,599[c]	5,200 (3,247)[d]	3,300	*see* St. Cyprien
Outside municipality	0	0	0	
Total	2,599	5,200*	3,300	
Date(s) of survey	July 8, 1955; 1958			
Ownership	Municipally owned and operated			
Source of supply	Pearson Creek			
Treatment	Water from dam on creek, 1 mile distant is pumped with chlorination to reservoir and system.			
Storage capacity (thousand gallons)	Impounding dam reservoir .....10,000 Concrete reservoir ..... 180 Elevated tank .....(1958) 200			
Consumption (average in m.g.d.)	1955: 0.21 (Max. 0.234)		1958: 0.60	
Industrial use	Main users are a saw mill and a furniture factory.			
Remarks:	* About 96 per cent served.			

Municipality	NOTRE-DAME-DU-LAC			RIVIÈRE-BLEUE			
Population served:	1951	1954	1956	1951	1954	1956	1958
In municipality	1,364[c]	1,200	1,512[d]	1,334[c]	1,500	1,481[d]	2,500
Outside municipality	0	0	0	0	0	0	0
Total	1,364	1,200*	1,512	1,334	1,500	1,481	2,500
Date(s) of survey	August 5, 1954; 1959			August 4, 1954			
Ownership	Municipally owned and operated			Municipally owned and operated			
Source of supply	Springs and surface run-off**			Five springs, ½ mile distant			
Treatment	No treatment; water supplied by gravity to system.			No treatment; water flows by gravity to system.			
Storage capacity (thousand gallons)	None			Concrete reservoir 45			
Consumption (average in m.g.d.)	1954: 0.072			1954: 0.025			
Industrial use	No major user			No major user			
Remarks:	* About 50 per cent served ** A new system to serve 1,000 under consideration to use Lac Temiscouata water with chlorination. This system was in operation in 1959.						

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC – (Continued)

CABANO

1951	1954	1956	1958
2,594[c]	2,800	2,350[d]	3,000
0	0	0	0
2,594	2,800	2,350	3,000

August 4, 1954; 1958 .....
Municipally owned and operated .....
Three deep wells .....
No treatment; pumped to tank and system

Elevated tank 116

1954	1958
0.050	0.100

No data .....
.....

CAUSAPSCAL

1951	1955	1958
2,609	4,000 (2,957)[d]	3,200
0	0	0
2,609	4,000	3,200

July 8, 1955; 1958 .....
Municipally owned and operated .....
Two artesian wells, 12 feet apart .....
No treatment; pumped to system
Plant capacity - 750,000 g.p.d.

One underground reservoir 300

1955	1958
0.250	0.175

Only users are a lumber mill and creameries.
.....

LAC-AU-SAUMON

1951	1955	1958
1,622[c]	1,800	1,700
0	0	0
1,622	1,800*	1,700

July 7, 1955 .....
Municipally owned and operated .....
Lac Angus, 1½ miles distant .....
No treatment; water flows by gravity to reservoir and system.

One concrete reservoir 168

1958
0.075

No major user. .....

* About 95 per cent served.

ST. CAMILLE-DE-LELLIS

1951	1956	1957
560[c]	639	1,690
0	0	0
560	639	1,690*

March 6, 1958 .....
Privately owned and operated by A. Audet
Spring and well** .....
No treatment; water is pumped to reservoirs and system.
Two tanks .....400 and 500 gallons
One reservoir (fire protection only) .. 60
No data .....

No major industrial users .....
* 800 served .....
** Spring is the main supply

ST. CYPRIEN

1951	1956	1957
128[c]	353[d]	1,030
0	0	0
128	353	1,030*

February 2, 1958 .....
Municipally owned and operated .....
Artesian wells .....
No treatment; water is pumped to system.
No data .....
No data .....

No data .....
* Not all served .....

ST. ELEUTHÈRE

1956	1958
1,033[c]	1,870*
0	0
1,033	1,870*

March 19, 1958 .....
Privately owned and operated by Wilbrod Théberge
Spring .....
No treatment; water flows by gravity to system.
None .....
No data .....

No major industrial user .....
* Only 750 served .....

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC — (Continued)

Municipality	ST.-FABIEN-DE-PANET	ST.-JOSEPH-DE-LA-RIVIÈRE BLEUE
Population served:	1958	
In municipality	1,559	
Outside municipality	0	*See* Rivière Bleue
Total	1,559*	
Date(s) of survey	April 15, 1958	
Ownership	Municipally owned and operated	
Source of supply	Well near village	
Treatment	No treatment; water is pumped to system.	
Storage capacity (thousand gallons)	One tank 14	
Consumption (average in m.g.d.)	About 15,000 to 18,000 g.p.d. (Plant capacity .....25,000 g.p.d.)	
Industrial use	No major industrial user	
Remarks:	* About 500 served with water	

Municipality	STE.-ROSE-DU-DÉGELÉ			STE.-SABINE		
Population served:	1951	1954	1956	1951	1956	1957
In municipality	1,017[c]	2,605	1,764[d]	382[c]	453[d]	1,060
Outside municipality	0	0	0		No data	0
Total	1,017	2,605*	1,764			1,060*
Date(s) of survey	August 5, 1954			January 21, 1958		
Ownership	Municipally owned and operated			Privately owned and operated by Messrs. Laureat and Justin Mercier		
Source of supply	Springs			Spring or artesian well		
Treatment	Water is pumped, with chlorination, to system.			No treatment; by gravity to system		
Storage capacity (thousand gallons)	Concrete reservoir 145			Reservoir 13		
Consumption (average in m.g.d.)	No data			1958 about 3,000 g.p.d.		
Industrial use	No data			No major user		
Remarks:	* About 51 per cent served with water.			* About 450 served with water		

[c] Population according to ninth census of Canada, 1951.
[d] Population according to tenth census of Canada, 1956.

DESCRIPTION OF MUNICIPAL WATER SYSTEMS

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC – (Concluded)

STE.-JUSTINE

1954	1956	1958
2,000	884[d]	1,800
0		0
2,000*		1,800*

August 3, 1954

La Societe d'Aqueduc de Ste. Justine, Langevin, Que.

Springs

No treatment; water is pumped to system from reservoirs.

Two concrete reservoirs .....50 and 43

Not known

No major user

* About 95 per cent served. Includes Ste. Justine Station.

ST.-MAGLOIRE-DE-BELLECHASSE

1951	1956	1958
580[c]	2,000 (777)[d]	1,800
0	0	0
580	2,000*	1,800**

July 23, 1956; Jan. 21, 1958

Municipally owned and operated

Spring

No treatment; pumped to reservoir and system.

One tank (steel) 30

1956	1957
10,000 g.p.d.	13,000 g.p.d.

Plant capacity ..... 25,000 g.p.d.

Major users are a creamery and a furniture plant.

* Only 650 served.

** 800 served

ST.-PAMPHILE

1956	1957
3,300 (4,534)[d]	3,700
0	0
3,300	3,700*

July 20, 1956; Jan. 28, 1958.

Owned and operated by Syndicate Cooperatif d'Aqueduc

Two wells, 113 feet deep. Spring being considered as new source.

No treatment; water is pumped to system.

None

1956

6,000 g.p.d.

No major industrial user.

* About 400 served with water

SAYABEC

1951	1955	1958
2,220[c]	2,400 (2,281)[d]	2,500
0	0	0
2,220	2,400	2,500

July 8, 1955

Municipally owned and operated

Lac Malfaix, 4½ miles distant

No treatment; water flows by gravity via Sauvage River to system.

None

1955	1958
Not known	0.160 (est.)

No major user

VAL-BRILLANT

1951	1955
867[c]	1,000 (939)[d]
0	0
867	1,000

January 8, 1955

Municipally owned and operated

Lauzier Creek, 1 mile distant

No treatment; water from behind dam flows by gravity to system.

One underground concrete reservoir 105

No data

No data

TABLE III

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

No.	Municipality	BELLEORAM	BOTWOOD	BUCHANS	
	Source(s)	Rabbit's Pond	Peter's Pond River	Sandy Lake	
		Raw and finished water	Raw and finished water	Raw water	Finished water
	Sampling point	Town tap	Town tap		Town tap
1	Date of sampling	July 16/56	July 3/56	Sept. 1/56	Sept. 1/56
2	Storage period (days)	87:92	10:14	18:23	18:23
3	Sampling temperature, °C.	.....	.....	17.8	.....
4	Test temperature, °C.	25.6	23.8	18.8	18.7
5	Oxygen consumed by $KMnO_4$	12	10.0	14.5	13
6	Carbon dioxide (CO_2), (calculated)	6.0	2.2	2.7	3.7
7	pH	5.7	7.0	6.6	6.2
8	Colour	70	50	45	40
9	Turbidity	5	0	0.3	0
10	Suspended matter, dried at 105°C.	7.2	.....	.....	.....
11	Suspended matter, ignited at 550°C.	4.1	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	42.8	.....	34.8	30.8
13	Ignition loss at 550°C.	26.8	.....	20.8	16.8
14	Specific conductance, micromhos at 25°C.	32.4	46.1	18.78	22.3
15	Calcium (Ca)	0.8	6.2	2.4	2.5
16	Magnesium (Mg)	0.3	0.8	0.2	0.3
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.08	0.12	0.08	0.11
19	Manganese (Mn)	0.01	0.0	0.0	0.01
20	Aluminum (Al)	0.44	0.05	0.12	0.14
21	Copper (Cu)	0.0	0.0	Slight trace	0.0
22	Zinc (Zn)	0.0	0.1	0.2	0.2
23	Sodium (Na)	4.1	2.0	1.0	1.0
24	Potassium (K)	0.2	0.2	0.2	0.2
25	Ammonia (NH_3)	0.2	0.2	0.2	0.2
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	4.0	14.3	6.2	3.3
28	Sulphate (SO_4)	2.4	1.6	2.8	2.7
29	Chloride (Cl)	6.0	5.1	1.1	3.2
30	Fluoride (F)	0.0	0.0	0.0	0.0
31	Nitrate (NO_3)	0.4	4.0	0.2	1.6
32	Silica (SiO_2), colorimetric	2.3	3.8	2.4	2.8
33	Carbonate hardness as $CaCO_3$	3.2	11.7	6.8	2.7
34	Non-carbonate hardness as $CaCO_3$	0.0	7.1	1.7	4.8
35	Total hardness as $CaCO_3$	3.2	18.8	8.5	7.5
36	Sum of constituents	19.0	30.9	13.6	16.3
37	Per cent sodium	59.4	18.2	21.6	19.4
38	Saturation index at test temperature	−5.4	−2.5	−3.6	−4.4
39	Stability index at test temperature	16.5	12.0	14.0	15.0
	Remarks:				

TABLE III– (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

CARBONEAR	CHANNEL–PORT AUX BASQUES	CORNER BROOK							No.
Little Island Pond	A small river (dammed lake)	Cornerbrook River (Lake)							
Raw and finished water	Raw and finished water	Raw and finished water							
Town tap	Town tap	Town tap				At 3-mile dam reservoir			
Nov. 16/56 10:13	June 27/56 20:28	Sept. 15/53 34:120	Aug. 8/55 15:29	June 11/56 9:16	July 3/56 15:20	July 26/56† 12	Mar. 23/54† 10	Nov. 2/56† 19	1 2
.....	.....	.....	16.1	7.8	11.1	.....	.....	.....	3
27.2	23.6	22.6	26.2	24.2	24.2	.....	.....	.....	4
.....	15	.....	.....	13	8.4	.....	.....	.....	5
1.2	1.0	2.4	1.0	1.4	2.3	16	8	8.8	6
7.0	7.1	6.6	7.7	7.4	7.3	6.5	6.8	7.3	7
30	120	20	35	40	35	20	.....	45	8
0.7	0.2	9	0	0	0	2	3	2	9
.....	.....	1.2	.....	.....	.....	.....	.....	.....	10
.....	.....	0.4	.....	.....	.....	.....	.....	.....	11
35.6	50.4	29.4	.....	40.8	57.6	70	40	36	12
16.0	29.6	12.8	.....	8.4	36.8	.....	.....	.....	13
33.8	44.0	32.5	98.1	58.77	67.0	.....	.....	.....	14
1.5	3.5	2.7	10.1	7.4	8.7	8.8	9.6	6.4	15
0.6	0.6	0.6	1.7	1.0	1.2	1.5	1.4	2.4	16
.....	.....	0.09	.....	.....	.....	0.2	0.2	0.2	17
0.05	0.18	0.05	.....	0.06	0.04	.....	.....	.....	18
0.01	Trace	.....	.....	0.0	0.0	.....	.....	.....	19
0.23	0.05	.....	.....	0.09	0.08	0.0	0.0	0.0	20
0.02	0.0	.....	.....	0.0	0.0	.....	.....	.....	21
0.2	0.0	.....	.....	0.1	0.0	.....	.....	.....	22
3.5	4.0	2.4	2.3	2.4	2.4	.....	.....	.....	23
0.2	0.4	0.7	0.4	0.4	0.4	.....	.....	.....	24
0.1	0.2	.....	0.1	0.2	0.2	0.1	0.0	0.2	25
0	0	0	0	0	0	0	0	0	26
7.6	7.6	5.9	32.5	21.9	28.0	31.7	31.7	26.8	27
2.6	3.8	4.9	3.5	3.2	2.6	2.7	0	0	28
5.2	7.3	4.2	3.9	4.4	4.2	9.7	6.1	7.3	29
0.05	0.0	0.1	.....	0.0	0.0	.....	.....	.....	30
0.4	2.4	0.2	0.2	5.2	1.6	.....	.....	.....	31
1.6	2.0	2.2	1.5	2.1	2.0	2.0	4.4	2.3	32
4.5	6.2	4.8	26.7	18.0	23.0	26	26	22	33
1.7	5.0	4.4	5.5	4.6	3.6	2	4	4	34
6.2	11.2	9.2	32.2	22.6	26.6	28	30	26	35
20.0	27.9	21.0	39.7	37.2	37.0	.....	.....	.....	36
46.9	41.4	34.1	13.2	17.7	15.6	.....	.....	.....	37
–3.3	–2.9	–3.6	–1.2	–1.8	–1.8	–2.5	–2.2	–1.9	38
13.6	12.9	13.8	10.1	11.0	10.9	11.5	11.2	11.1	39

† Data supplied by Alchem Ltd., Burlington, Ont.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

No.	Municipality	CURLING		DEER LAKE	FORTUNE	
	Source(s)	Cornerbrook River (2nd pond reservoir)		Grand Lake	Fortune Brook	
				Raw and finished water	Raw and finished water	
	Sampling point	At reservoir		Town tap	Town tap	
1	Date of sampling	Sept. 13/56		Sept. 27/56	Feb. 28/56†	Nov. 26/56
2	Storage period (days)	40:42		14:19	22	18:43
3	Sampling temperature, °C.	16.1		9.6	.....	4.4
4	Test temperature, °C.	24.4		25.4	.....	23.3
5	Oxygen consumed by $KMnO_4$	7.1		12	.....	16
6	Carbon dioxide (CO_2), (calculated)	4.5		1.4	2.5	2.5
7	pH	6.4		7.2	6.8	6.4
8	Colour	40		20	40	50
9	Turbidity	6		4	2	.....
10	Suspended matter, dried at 105° C.	4.9		3.2	.....	.....
11	Suspended matter, ignited at 550° C.	0.3		0.6	.....	.....
12	Residue on evaporation, dried at 105° C.	53.6		42.0	20	.....
13	Ignition loss at 550° C.	32.8		12.0	.....	.....
14	Specific conductance, micromhos at 25° C.	57.1		39.7	.....	50
15	Calcium (Ca)	3.6		4.0	4.0	1.8
16	Magnesium (Mg)	1.1		0.7	0	0.7
17	Iron (Fe) Total	.....	*see also*	.....	0.4	.....
18	Dissolved	0.10	Corner Brook	0.01	.....	0.10
19	Manganese (Mn)	0.0		0.0	.....	0.0
20	Aluminum (Al)	.....		.....	0.0	0.09
21	Copper (Cu)	0.0		0.0	.....	0.0
22	Zinc (Zn)	0.3		0.2	.....	0.0
23	Sodium (Na)	4.3		2.6	.....	5.5
24	Potassium (K)	0.6		0.3	.....	0.3
25	Ammonia (NH_3)	0.1		0.15	0.1	0.2
26	Carbonate (CO_3)	0		0	0	0
27	Bicarbonate (HCO_3)	7.1		14.3	9.8	3.8
28	Sulphate (SO_4)	6.7		1.7	0.0	3.4
29	Chloride (Cl)	7.8		3.2	0.8	10.0
30	Fluoride (F)	0.0		0.0	.....	0.0
31	Nitrate (NO_3)	1.2		1.2	.....	0.8
32	Silica (SiO_2), colorimetric	0.7		3.6	2.7	3.1
33	Carbonate hardness as $CaCO_3$	5.8		11.7	8	3.1
34	Non-carbonate hardness as $CaCO_3$	7.7		1.2	2	4.3
35	Total hardness as $CaCO_3$	13.5		12.9	10	7.4
36	Sum of constituents	30.0		24.3	.....	27.7
37	Per cent sodium	38.1		29.9	.....	57.1
38	Saturation index at test temperature	−3.6		−2.4	−3.0	−4.2
39	Stability index at test temperature	13.6		12.0	12.8	14.8

Remarks:

† Analysis supplied by Alchem Limited, Burlington, Ont.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

FRESHWATER	GANDER AIRPORT	GANDER TOWNSITE	GRAND BANK		GRAND FALLS			No.
Larkin's Pond*	Gander Lake	Gander Airport System	Grand Bank Brook		Exploits River			
Raw and finished water	Raw and finished water		Raw and finished water		Raw water	Finished water		
Town tap	At tap Bldg. 64		Town tap			Town tap		
Nov. 20/56 7:22	July 5/56 8:12		July 3/56 10:14	Aug. 6/56 22:30	Oct. 4/55 13:49	Sept. 17/53 20:118	Oct. 17/56 9:13	1 2
.....	10.0		7.2	.....	9.4	.....	11.7	3
.....	23.8		23.5	22.4	23.9	19.9	24.2	4
.....	10		7.4	14	6.9	.....	14	5
3.6	1.2		.....	4.2	1.6	1.6	3.0	6
6.7	6.3		.....	6.4	6.8	7.4	6.6	7
.....	40		30	30	35	30	40	8
.....	0		0.9	0	2	2	2	9
.....	.....		.....	.....	.....	.....	.....	10
.....	.....		.....	.....	.....	.....	.....	11
.....	18.8		74.0	55.2	32.8	42.6	30.4	12
.....	4.8		43.2	21.2	15.2	12.2	16.4	13
.....	24.2		.....	62.5	42.3	55.4	32.5	14
4.4	1.6		3.6	4.3	2.9	5.9	2.9	15
1.0	0.7		1.4	0.8	0.4	1.5	0.7	16
.....	.....	*see* Gander Airport	.....	.....	.....	.....	.....	17
.....	0.08		0.2	0.15	0.02	0.03	0.05	18
.....	Trace		0.02	0.03	0.0	.....	0.01	19
.....	0.05		0.09	0.04	0.07	.....	0.07	20
.....	0.0		0.0	Slight trace	0.01	.....	0.0	21
.....	0.05		.....	0.0	0.05	.....	0.15	22
6.2	1.7		5.4	5.5	1.3	3.6	1.9	23
.....	0.3		0.3	0.3	0.2	0.9	0.3	24
.....	0.2		.....	0.2	0.2	.....	0.2	25
0	0		.....	0	0	0	0	26
11.3	1.5		.....	6.9	6.1	23.1	7.4	27
4.6	2.6		3.1	2.4	3.9	3.8	4.6	28
11.2	4.6		.....	11.9	1.9	4.3	3.2	29
.....	0.0		0.0	0.0	0.0	0.2	0.0	30
.....	2.4		2.4	2.0	0.8	0.2	0.4	31
1.6	2.6		3.5	4.2	2.2	2.4	2.4	32
9.3	1.2		.....	5.7	3.9	18.9	6.1	33
5.8	5.7		.....	8.3	0.0	1.9	4.0	34
15.1	6.9		14.7	14.0	3.9	20.8	10.1	35
24.5	17.4		.....	35.2	16.7	34.2	20.4	36
47.2	32.5		.....	44.4	22.8	26.3	26.0	37
−3.0	−4.7		.....	−3.6	−3.4	−2.0	−3.5	38
12.7	15.7		.....	13.6	13.6	11.4	13.6	39

* *See also* Placentia, Nfld.

See also Station No. 111 Table II

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

No.	Municipality	GREENSPOND	HARBOUR GRACE	JERSEYSIDE	LEWISPORTE
	Source(s)	Pond	Bannerman Lake	Larkin's Pond	Stanhope Lake
		Raw and finished water	Raw and finished water		Raw and finished water
	Sampling point	Town tap	Town tap		Town tap
1	Date of sampling	Jan.2/57	July 11/56		Nov. 20/56
2	Storage period (days)	29:37	7:12		10:22
3	Sampling temperature, °C.	.....	14.1		1.7
4	Test temperature, °C.	24.2	24.1		20.9
5	Oxygen consumed by $KMnO_4$	25	5.4		14
6	Carbon dioxide (CO_2), (calculated)	12	0.9		2.3
7	pH	6.3	7.0		7.0
8	Colour	120	10		30
9	Turbidity	10	0.3		0
10	Suspended matter, dried at 105° C.	23.4	.....		.....
11	Suspended matter, ignited at 550° C.	12.4	.....		.....
12	Residue on evaporation, dried at 105° C.	106	35.2		52.4
13	Ignition loss at 550° C.	50.4	14.8		24.4
14	Specific conductance, micromhos at 25° C.	119	29.0		50.9
15	Calcium (Ca)	5.7	1.7		4.4
16	Magnesium (Mg)	1.4	0.3	*See* Placentia	1.1
17	Iron (Fe) Total	.....	.....		.....
18	Dissolved	0.83	0.03		Trace
19	Manganese (Mn)	0.04	0.0		0.0
20	Aluminum (Al)	0.14	0.03		0.0
21	Copper (Cu)	0.0	0.1		0.0
22	Zinc (Zn)	0.8	0.0		0.05
23	Sodium (Na)	12.7	3.3		3.5
24	Potassium (K)	1.6	0.2		0.4
25	Ammonia (NH_3)	0.1	0.1		0.1
26	Carbonate (CO_3)	0	0		0
27	Bicarbonate (HCO_3)	13.8	5.9		15.1
28	Sulphate (SO_4)	7.6	1.9		2.9
29	Chloride (Cl)	20.3	4.3		5.7
30	Fluoride (F)	0.0	0.0		0.0
31	Nitrate (NO_3)	0.4	0.6		1.2
32	Silica (SiO_2), colorimetric	4.4	1.1		1.8
33	Carbonate hardness as $CaCO_3$	11.3	4.8		12.4
34	Non-carbonate hardness as $CaCO_3$	8.7	0.7		3.1
35	Total hardness as $CaCO_3$	20.0	5.5		15.5
36	Sum of constituents	62.7	16.5		28.5
37	Per cent sodium	51.6	52.9		32.9
38	Saturation index at test temperature	−3.3	−3.4		−2.7
39	Stability index at test temperature	12.9	13.8		12.4
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

PLACENTIA	ST. ANTHONY	ST. JOHN'S						No.
Larkin's Pond	I.G.A. Reservoir	Petty Harbour Long Pond and Windsor Lake						
Raw and finished water	Raw and finished water	Long Pond		Windsor Lake		Long Pond and/or Windsor Lake		
		Raw and finished water						
Town tap	Town tap	At tap		At pump		At tap Whitewag St., St. John's	At tap at Fort William	
July 23/56	Sept. 11/56	Dec. 6/56	Apr. 28/58	June 5/56	Apr. 28/58	Apr. 28/58	Apr. 30/58	1
23:28	37:44	12:33	15:28	8:17	17:30	17:30	15:28	2
3.9	12.8	1.1	.....	5.0	.....	.....	.....	3
25.4	25.1	23.0	26.7	24.6	26.7	26.8	26.7	4
12	19	15	5.3	5.9	3.7	3.2	3.6	5
1.9	4.0	1.3	1.4	1.8	0.5	1.2	0.8	6
7.0	7.0	6.2	6.1	6.2	6.6	6.6	6.8	7
30	70	30	25	10	10	10	15	8
0	5	3	0.8	0.7	0.3	0.3	2	9
.....	2.6	.....	.....	.....	.....	.....	.....	10
.....	0.6	.....	.....	.....	.....	.....	.....	11
50.8	68.8	.....	28.4	34.0	27.6	32.0	31.6	12
13.2	32.4	.....	10.4	8.0	8.4	22.0	21.2	13
70.8	69.3	34.4	32.8	36.4	35.7	37.1	35.7	14
4.6	5.5	0.8	0.6	0.9	0.8	1.0	0.9	15
1.0	1.8	0.5	0.5	0.5	0.5	0.6	0.6	16
.....	.....	.....	.....	.....	.....	.....	.....	17
0.01	0.17	0.03	0.0	0.03	0.02	0.0	0.07	18
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	19
0.11	0.0	0.12	0.0	0.01	0.02	0.0	Trace	20
0.10	0.0	0.01	0.0	0.0	0.0	0.24	0.0	21
0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.2	22
7.0	5.5	3.8	3.8	4.3	4.3	4.3	4.3	23
0.3	0.6	0.5	0.4	0.3	0.3	0.3	0.2	24
0.1	0.3	0.2	0.1	0.2	0.05	0.05	0.05	25
0	0	0	0	0	0	0	0	26
12.2	25.4	1.5	1.2	1.8	1.3	3.0	3.0	27
3.8	3.2	2.5	2.9	2.7	3.8	4.0	4.5	28
11.2	7.5	6.5	6.5	7.1	6.9	6.7	6.5	29
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30
0.8	0.8	0.8	0.1	1.6	0.2	0.3	0.1	31
2.0	0.9	1.3	0.8	1.6	1.2	1.5	1.7	32
10.0	20.8	1.2	1.0	1.5	1.1	2.5	2.5	33
5.6	0.3	2.9	2.6	4.4	3.0	2.5	2.2	34
15.6	21.1	4.1	3.6	5.9	4.1	5.0	4.7	35
36.9	38.5	17.4	16.2	19.9	18.7	20.5	20.6	36
47.6	34.2	58.0	67.0	59.2	66.7	61.5	63.3	37
-2.7	-2.3	-5.1	-5.2	-4.9	-4.6	-4.3	-4.1	38
12.4	11.6	16.4	16.5	16.0	15.8	15.2	15.0	39

TABLE III– (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

No.			
	Municipality	ST. JOHN'S EAST	ST. LAWRENCE
	Source(s)	Windsor Lake	Deep well
			Raw and finished water
	Sampling point		Town tap
1	Date of sampling		Sept. 8/56
2	Storage period (days)		18:24
3	Sampling temperature, °C.		3.3
4	Test temperature, °C.		23.4
5	Oxygen consumed by $KMnO_4$		9.2
6	Carbon dioxide (CO_2), (calculated)		1.4
7	pH		8.1
8	Colour		0
9	Turbidity		0
10	Suspended matter, dried at 105°C.		.....
11	Suspended matter, ignited at 550°C.		.....
12	Residue on evaporation, dried at 105°C.		646
13	Ignition loss at 550°C.		84.4
14	Specific conductance, micromhos at 25°C.		1,066
15	Calcium (Ca)		93.4
16	Magnesium (Mg)		1.7
17	Iron (Fe) Total	*See* St. John's	.....
18	Dissolved		Trace
19	Manganese (Mn)		Trace
20	Aluminum (Al)		0.24
21	Copper (Cu)		0.03
22	Zinc (Zn)		0.1
23	Sodium (Na)		105
24	Potassium (K)		1.7
25	Ammonia (NH_3)		0.1
26	Carbonate (CO_3)		0
27	Bicarbonate (HCO_3)		122
28	Sulphate (SO_4)		8.0
29	Chloride (Cl)		259
30	Fluoride (F)		2.0
31	Nitrate (NO_3)		0.8
32	Silica (SiO_2), colorimetric		20
33	Carbonate hardness as $CaCO_3$		100
34	Non-carbonate hardness as $CaCO_3$		140
35	Total hardness as $CaCO_3$		240
36	Sum of constituents		552
37	Per cent sodium		48.4
38	Saturation index at test temperature		+0.6
39	Stability index at test temperature		6.9
	Remarks:		

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

A. ISLAND OF NEWFOUNDLAND

(In parts per million)

SPRINGDALE		STEPHENVILLE		WINDSOR	No.
Sullivan's Pond		Island Pond		Exploits River	
Raw and finished water		Raw and finished water		Raw water	
Town tap	At town pump	At reservoir	At tap	Direct from river at Grand Falls	
Sept. 16/53 21:119	July 6/56 7:11	Dec. 11/56 24:37	Jan. 30/59 6:12	Mar. 23/56 48:63	1 2
.....	.....	.....	7.2	.....	3
19.9	23.4	23.0	23.5	.....	4
.....	6.2	20	6.1	11	5
5.5	2.6	3.4	3	1.4	6
6.9	7.0	7.7	7.7	6.9	7
30	20	80	35	40	8
10*	0.2	0	0	0	9
14.7*	.....	.....	.....	.....	10
9.2	.....	.....	.....	.....	11
44.4	40.4	135	144	40.8	12
15.4	15.2	38.0	103	19.6	13
54.9	45.9	206	226	30.6	14
7.1	6.1	27.6	30.0	3.1	15
1.1	1.2	5.5	7.1	0.3	16
1.3*	.....	.....	.....	.....	17
0.06	0.05	0.11	0.07	.....	18
.....	0.02	0.0	0.0	0.0	19
.....	0.04	0.2	0.0	0.03	20
.....	Trace	0.0	Trace	Trace	21
.....	0.0	0.0	0.0	0.2	22
2.8	1.7	6.7	6.3	1.9	23
0.9	0.2	0.7	0.5	0.3	24
.....	0.2	0.0	0.0	0.0	25
0	0	0	0	0	26
25.9	17.8	102	109	6.8	27
3.4	2.5	5.5	4.7	3.3	28
2.3	3.6	11.8	13.4	2.5	29
0.1	0.0	0.0	0.0	0.0	30
2.4	2.8	0.8	0.8	2.4	31
2.4	2.7	4.3	4.0	3.4	32
21.2	14.6	83.8	89.6	.....	33
1.2	5.6	7.7	14.4	3.4	34
22.4	20.2	91.5	104.0	9.0	35
35.3	29.8	113	121	20.0	36
20.6	15.1	13.5	11.6	30.1	37
-2.4	-2.4	-0.4	-0.3	-3.2	38
11.5	11.8	8.5	8.3	13.3	39

* Probably from corroding iron pipe.

See also Station No. 111, Table No. II

88095-5—7½

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

B. PRINCE EDWARD ISLAND

(In parts per million)

No.				
	Municipality	CHARLOTTETOWN		
	Source(s)	Wells		
		Raw and finisbed water		
	Sampling point	At Brackley Station pumps (18 wells)		At Main Station pumps (1 well)
1	Date of sampling	July 5/54†	Sept. 11/54	Sept. 11/54
2	Storage period (days)	.....	45:157	46:157
3	Sampling temperature, °C.	.....	7.8	8.3
4	Test temperature, °C.	.....	22.6 (16)	23.2 (15)
5	Oxygen consumed by $KMnO_4$	.....	4.3	3.1
6	Carbon dioxide (CO_2), (calculated)	3.4	1.8	1.8
7	pH	7.7	8.0 (7.4)	8.1 (8.0)
8	Colour	< 5	5	5
9	Turbidity	0.5	0	0
10	Suspended matter, dried at 105°C.	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	136	132	178
13	Ignition loss at 550°C.	62*	35.2	40.4
14	Specific conductance, micromhos at 25°C.	.....	232	298
15	Calcium (Ca)	23	22.0	20.1
16	Magnesium (Mg)	12	12.2	10.6
17	Iron (Fe) Total	.....	.....	.....
18	Dissolved	0.0	0.03	0.03
19	Manganese (Mn)	.....	0.01	0.01
20	Aluminum (Al)	.....	0.21	0.19
21	Copper (Cu)	.....	0.0	0.0
22	Zinc (Zn)	.....	.....	.....
23	Sodium (Na)	13††	4.3	26.0
24	Potassium (K)	.....	1.0	1.4
25	Ammonia (NH_3)	0.0	.....	.....
26	Carbonate (CO_3)	0	0 (0)	0 (0)
27	Bicarbonate (HCO_3)	54.9	110 (109)	148 (152)
28	Sulphate (SO_4)	11	8.0	13.9
29	Chloride (Cl)	12	9.5	8.9
30	Fluoride (F)	0.0	0.05	0.3
31	Nitrate (NO_3)	1.1	8.8	3.2
32	Silica (SiO_2), colorimetric	8	4.5	6.1
33	Carbonate hardness as $CaCO_3$	92	90.6 (89.0)	93.7
34	Non-carbonate hardness as $CaCO_3$	16	14.4 (16.5)	0.0
35	Total hardness as $CaCO_3$	108	105 (106)	93.7
36	Sum of constituents	189	125	163
37	Per cent sodium	.....	8.0	36.9
38	Saturation index at test temperature	−0.4	−0.2	0.0
39	Stability index at test temperature	8.5	8.4	8.1

Remarks: † Analyses supplied by Department of National Health and Welfare.
†† Calculated value.
* At 600°C.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

B. PRINCE EDWARD ISLAND

(In parts per million)

CHARLOTTETOWN (Concluded)		SUMMERSIDE					No.
Wells		Wells					
		600' deep wells	250' deep well	500' deep well	Mixed supply		
Raw and finished water		Raw and finished water					
At Malpeque Road Station pumps	At Union Station pumps (10 wells)	At pump			At tap		
Feb. 24/55	Sept. 11/54	Sept. 11/54	Sept. 11/54		July 7/54†	Aug. 9/56	1
12:15	45:157	46:157	46:157		.....	14:20	2
9.0	8.9	9.4	11.1		.....	.....	3
20.5	22.6 (16)	23.2 (14)	23.2 (16)		.....	21.7	4
1.9	2.6	2.9	2.9		.....	.....	5
1.3	1.7	2.0	2.0		2.8	1.1	6
8.2	8.1 (7.6)	8.0 (7.7)	8.0 (7.6)		7.8	8.3	7
5.0	5	5	5		<5	0	8
0.8	0	0	0		0.3	.....	9
.....	.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	11
131	140	211	197		22.2	.....	12
24.8	10.0	27.2	34.8		80*	.....	13
235	244	345	314		.....	279	14
16.5	24.3	45.7	52.6		45	48.2	15
10.1	13.0	2.1	1.5	Not producing at time of survey	1.0	0.7	16
.....	.....	.....	.....		.....	.....	17
0.04	0.06	0.09	0.03		0.0	0.01	18
0.0	0.0	0.01	Trace		.....	0.01	19
0.44	0.30	0.32	0.28		.....	0.07	20
0.0	0.02	0.18	0.0		.....	0.0	21
.....	.....	.....	.....		.....	0.5	22
14.8	4.2	18.6	6.6		26††	7.2	23
2.0	1.1	0.9	0.8		.....	0.7	24
.....	.....	.....	.....		0.0	0.1	25
0	0 (0)	0 (0)	0 (0)		0	0	26
126	124 (121)	120 (121)	129 (129)		55.9	120	27
5.8	7.6	15.6	20.2		16	14.4	28
5.6	9.3	27.8	13.0		24.0	11.6	29
0.05	0.0	0.08	0.0		0.2	.....	30
3.2	6.3	12	14		2.2	12	31
6.4	5.0	10	8.3		16	8.9	32
82.7	102 (99.4)	98.7 (99.4)	106 (106)		94	98.4	33
0.0	12.3 (15.2)	24.0 (24.1)	31.7 (34.4)		28	24.7	34
82.7	114 (115)	123 (124)	137 (140)		122	123	35
127	132	193	181		267	164	36
27.5	7.2	24.3	9.3		.....	11.2	37
−0.1	0.0	+0.2	+0.3		0.0	+0.5	38
8.4	8.1	7.4	7.4		7.8	7.3	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.	Municipality	AMHERST		ANNAPOLIS ROYAL
	Source(s)	Nappan River and wells		First Pond Lake (Surface run-off)
		Raw and finished water		Raw and finished water
		Nappan River*	Wells	
	Sampling point	At pumps		Town tap
1	Date of sampling	Aug. 18/54	Aug. 18/54	Aug. 23/54
2	Storage period (days)	18:159	16:198	18:220
3	Sampling temperature, °C.	18.3	7.5	17.8
4	Test temperature, °C.	23.2 (23)	23.2 (18)	18.6 (21)
5	Oxygen consumed by $KMnO_4$	.....	.....	.....
6	Carbon dioxide(CO_2), (calculated)	0.4	1.6	3.9
7	pH	8.2 (7.7)	8.2 (7.9)	6.7 (6.3)
8	Colour	50 (80)	5	100 (120)
9	Turbidity	4	0	5
10	Suspended matter, dried at 105°C.	4.1	.....	3.2
11	Suspended matter, ignited at 550°C.	2.7	.....	1.5
12	Residue on evaporation, dried at 105°C.	76.8	181	39.4
13	Ignition loss at 550°C.	20.0	21.0	17.4
14	Specific conductance, micromhos at 25°C.	95.6	290	36.7
15	Calcium (Ca)	11.2	28.4	2.0
16	Magnesium (Mg)	1.1	7.8	1.0
17	Iron (Fe) Total	.....	.....	.....
18	Dissolved	0.1	0.08	0.11
19	Manganese (Mn)	0.0	Trace	Trace
20	Aluminum (Al)	0.0	0.21	0.03
21	Copper (Cu)	0.0	0.0	0.03
22	Zinc (Zn)	.....	.....	.....
23	Sodium (Na)	5.8	21.8	3.5
24	Potassium (K)	0.8	1.9	0.4
25	Ammonia (NH_3)	.....	.....	.....
26	Carbonate (CO_3)	0 (0)	0 (0)	0 (0)
27	Bicarbonate (HCO_3)	39.0 (40.4)	155 (157)	11.3 (12.6)
28	Sulphate (SO_4)	4.7	12.1	3.1
29	Chloride (Cl)	5.0	12.0	4.5
30	Fluoride (F)	0.20	0.03	0.2
31	Nitrate (NO_3)	1.6	0.02	Trace
32	Silica(SiO_2), colorimetric	5.1	7.8	3.0
33	Carbonate hardness as $CaCO_3$	32.0	103 (103)	9.1 (10.2)
34	Non-carbonate hardness as $CaCO_3$	0.6	0.0 (0.0)	0.0 (0.0)
35	Total hardness as $CaCO_3$	32.6 (31.8)	103 (103)	9.1 (10.2)
36	Sum of constituents	54.8	168	23.5
37	Per cent sodium	9.8	30.7	43.2
38	Saturation index at test temperature	−0.6	+0.3	−3.5
39	Stability index at test temperature	9.4	7.6	13.7
	Remarks:	*An auxiliary supply.		

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

ANTIGONISH		BADDECK	BIRCH GROVE	BRIDGETOWN	No.
Brook and springs	Clydesdale River*	Springs and surface run-off	MacDonald's Lake	Croskill Lake	
Raw and finished water		Raw and finished water	Raw and finished water	Raw and finished water	
Town tap	At pump	Town tap	At pump	Town tap	
Aug. 30/54	Aug. 30/54	Sept. 1/54	Sept. 2/54	Aug. 23/54	1
18:213	18: 213	17:217	15:216	18:22	2
15.6	22.2	15.0	17.2	19.0	3
21.8 (21)	21.8 (25)	21.8 (23)	21.8 (22.5)	18.6 (23)	4
7.0	5.6	11	4.5	.....	5
3.0	2.8	1.7	6.0	1.4	6
6.9 (7.0)	7.0 (7.4)	7.4 (7.3)	5.5 (5.4)	7.6 (6.5)	7
8	8	45	10	10	8
0	0	4	0.8	0	9
.....	.....	2.6	.....	.....	10
.....	.....	0.7	.....	.....	11
49.4	54.8	48.4	24.8	48.0	12
7.6	8.0	18.0	6.4	8.2	13
82.6	93.1	58.8	44.3	70.0	14
4.4	4.8	5.3	1.1	7.6	15
1.0	1.1	1.3	0.9	1.2	16
.....	.....	.....	.....	.....	17
Trace	Trace	0.45	Trace	0.04	18
0.0	0.0	0.01	Trace	0.0	19
0.03	0.0	0.54	0.05	0.0	20
0.03	0.0	0.0	0.0	0.0	21
.....	.....	.....	.....	.....	22
8.5	10.0	3.2	4.7	4.1	23
0.6	0.7	0.5	0.4	0.4	24
.....	.....	.....	.....	.....	25
0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	26
14.7 (18.9)	16.7 (20.3)	24.5 (24.0)	1.1 (5.0)	29.7 (31.6)	27
3.8	3.6	2.6	4.9	3.6	28
14.1	16.6	5.1	6.8	5.3	29
0.02	0.04	0.1	0.05	0.05	30
0.4	0.6	0.6	0.3	Trace	31
4.1	3.8	1.4	0.5	5.6	32
12.1 (15.5)	13.7 (16.6)	18.6 (19.1)	0.9 (4.1)	23.9 (25.1)	33
3.0 (1.5)	2.8 (2.5)	0.0 (0.0)	5.6 (3.3)	0.0 (0.0)	34
15.1 (17.0)	16.5 (19.1)	18.6 (19.1)	6.5 (7.4)	23.9 (25.1)	35
44.3	49.6	33.2	19.6	42.6	36
52.0	55.5	23.2	58.7	26.7	37
−3.5	−2.6	−1.9	−5.1	−1.6	38
13.0	12.2	11.2	15.7	10.8	39

* An auxiliary supply.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.					
	Municipality	BRIDGEWATER			
	Source(s)	Hebbs Lake			
		Raw and finished water			
	Sampling point	Town tap			
1	Date of sampling	Aug. 21/54	Apr. 28/58	June 19/58	Sept. 4/58
2	Storage period (days)	19:214	11:22	15:25	8:20
3	Sampling temperature, °C.	20.0	.....	.....	.....
4	Test temperature, °C.	21.2 (24)	26.5 (26)	26.1	21.2
5	Oxygen consumed by $KMnO_4$	.....	4.1	6.0	2.4
6	Carbon dioxide (CO_2), (calculated)	7.8	1.2	.....	3.4
7	pH	5.8 (6.3)	6.5	4.9	5.8
8	Colour	15 (25)	25	25	15
9	Turbidity	0.9	4	0.8	0.8
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	25.0	.....	32.0	51.2
13	Ignition loss at 550°C.	13.0	.....	16.0	23.2
14	Specific conductance, micromhos at 25°C.	29.6	36.4	35.4	34.4
15	Calcium (Ca)	1.2	1.3	0.9	1.2
16	Magnesium (Mg)	0.5	0.8	0.7	0.7
17	Iron (Fe) Total	.....	.....	0.18	.....
18	Dissolved	0.04	0.19	0.10	0.07
19	Manganese (Mn)	0.02	0.07	0.04	0.04
20	Aluminum (Al)	0.17	0.0	0.09	0.01
21	Copper (Cu)	0.3	0.59	0.5	1.1
22	Zinc (Zn)	.....	0.34	0.2	0.2
23	Sodium (Na)	2.6	3.0	2.3	2.4
24	Potassium (K)	0.2	0.2	0.2	0.2
25	Ammonia (NH_3)	.....	0.1	0.05	0.05
26	Carbonate (CO_3)	0 (0)	0	0	0
27	Bicarbonate (HCO_3)	2.9 (5.0)	2.4	0	1.2
28	Sulphate (SO_4)	3.8	3.1	3.0	2.7
29	Chloride (Cl)	4.9	6.3	7.2	6.9
30	Fluoride (F)	0.0	0.0	0.0	0.0
31	Nitrate (NO_3)	0.0	0.1	0.0	0.1
32	Silica (SiO_2), colorimetric	0.4	2.0	1.2	1.5
33	Carbonate hardness as $CaCO_3$	2.4 (4.1)	2.0	0.0	1.0
34	Non-carbonate hardness as $CaCO_3$	2.7 (1.2)	4.5	5.4	4.9
35	Total hardness as $CaCO_3$	5.1 (5.3)	6.5	5.4	5.9
36	Sum of constituents	15.5	19.3	16.5	17.7
37	Per cent sodium	45.4	42.8	41.4	38.3
38	Saturation index at test temperature	−5.1	−4.3	−6.4	−5.5
39	Stability index at test temperature	16.0	15.1	17.7	16.8
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

CANNING		CENTREVILLE	DARTMOUTH		DIGBY	DOMINION	No.
Brook and springs		Supplied by Sydney Mines	Lamont and Topsail Lakes		Lily Lake	Supplied by Glace Bay	
Raw and finished water			Raw and finished water		Raw and finished water		
Brook	Springs						
Pump at dam	At reservoir		At pump	Town tap	Town tap		
Sept. 9/54	Sept. 9/54		Aug. 27/54	Oct. 30/54	Aug. 24/54		1
35:244	35:244		20:34	10:23	17:219		2
12.8	19.4		19.7	.....	18.3		3
22.3 (18.5)	22.3 (20)		20.9 (23)	24.1	18.6 (19)		4
3.1	4.3		4.5	2.0	.....		5
1.8	1.3		1.5	0.8	1.8		6
7.8 (7.5)	7.7 (8.4)		6.8 (7.3)	7.2	6.9 (6.2)		7
10	13		3	15	10 (20)		8
0.7	0		0	2	3		9
.....	.....		.....	.....	.....		10
.....	.....		.....	.....	.....		11
148	161		29.2	34.0	42.6		12
32.0	22.8		7.4	6.6	13.6		13
219	200		44.8	54.6	61.0		14
31.0	25.9		2.7	4.5	2.5		15
2.2	3.2		0.9	0.5	1.4		16
.....	.....	*See*	.....	.....	.....	*See*	17
0.0	0.0	Sydney Mines	0.02	0.21	0.09	Glace Bay	18
0.0	0.0	and	.....	0.0	0.01		19
0.0	0.02	North Sydney, N.S.	0.01	0.0	0.0		20
0.0	0.0		.....	.....	0.0		21
.....	.....		.....	.....	.....		22
7.1	7.1		3.4	3.8	5.3		23
1.9	0.5		0.4	0.5	0.2		24
.....	.....		.....	.....	.....		25
0 (0)	0 (0)		0 (0)	0	0 (0)		26
70.1 (70.0)	39.5 (42.9)		5.5 (7.6)	7.7	8.4 (7.6)		27
19.6	51.6		8.0	7.0	5.8		28
11.2	4.6		4.7	6.0	10.9		29
0.0	0.05		0.05	0.1	0.02		30
16	0.2		Trace	0.4	0.2		31
12	15		0.9	1.5	1.6		32
57.5 (58.0)	32.4 (35.2)		4.5 (6.2)	6.3	6.9 (6.2)		33
28.9 (28.4)	45.4 (44.4)		6.1 (4.6)	7.0	5.1 (6.5)		34
86.4 (86.4)	77.8 (79.6)		10.6 (10.8)	13.3	12.0 (12.7)		35
135	122		29.2	28.3	32.1		36
14.8	16.4		40.1	37.3	48.1		37
−0.4	−0.8		−3.5	−2.7	−2.8		38
8.6	9.3		13.8	11.6	12.5		39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.	Municipality	DONKIN			FAIRVIEW
	Source(s)	Spring fed Lake			
		Raw water	Finished water		
	Sampling point	At lake	At standpipe	Town tap	
1	Date of sampling	Sept. 2/54	Sept. 2/54	Sept. 7/55	
2	Storage period (days)	15:238	15:242	7:28	
3	Sampling temperature, °C.	20.3	13.9	.....	
4	Test temperature, °C.	21.2	21.2 (20)	22.8	
5	Oxygen consumed by $KMnO_4$	17	14	21	
6	Carbon dioxide (CO_2), (calculated)	3.3	1.3	3.3	
7	pH	6.5	7.0 (5.8)	6.5	
8	Colour	160	100 (120)	80	
9	Turbidity	6	2	.....	
10	Suspended matter, dried at 105°C.	9.0	.....	.....	
11	Suspended matter, ignited at 550°C.	4.5	.....	.....	
12	Residue on evaporation, dried at 105°C.	68.4	75.2	.....	
13	Ignition loss at 550°C.	20.4	26.8	.....	
14	Specific conductance, micromhos at 25°C.	93.9	97.8	103	
15	Calcium (Ca)	3.6	4.4	4.1	
16	Magnesium (Mg)	1.4	1.6	1.5	*See*
17	Iron (Fe) Total	1.3	1.15	.....	Halifax, N.S.
18	Dissolved	0.55	0.94	1.4	
19	Manganese (Mn)	0.0	0.01	Trace	
20	Aluminum (Al)	0.20	.....	0.0	
21	Copper (Cu)	0.0	0.74	0.0	
22	Zinc (Zn)	.....	.....	0.0	
23	Sodium (Na)	10.0	9.1	11.2	
24	Potassium (K)	0.5	0.7	0.5	
25	Ammonia (NH_3)	.....	.....	0.2	
26	Carbonate (CO_3)	0	0 (0)	0	
27	Bicarbonate (HCO_3)	6.3	7.1 (10.1)	6.5	
28	Sulphate (SO_4)	8.0	10.1	9.0	
29	Chloride (Cl)	16.7	17.3	18.7	
30	Fluoride (F)	.....	.....	.....	
31	Nitrate (NO_3)	0.6	0.6	0.4	
32	Silica (SiO_2), colorimetric	1.4	1.3	1.5	
33	Carbonate hardness as $CaCO_3$	5.2	5.8 (8.3)	5.3	
34	Non-carbonate hardness as $CaCO_3$	9.5	11.8 (9.7)	11.1	
35	Total hardness as $CaCO_3$	14.7	17.6 (18.0)	16.4	
36	Sum of constituents	46.1	50.3	51.5	
37	Per cent sodium	55.4	48.1	55.4	
38	Saturation index at test temperature	−3.6	−3.0	−3.6	
39	Stability index at test temperature	13.7	13.0	13.7	
	Remarks:		Note high copper probably due to piping.		

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

FLORENCE	GLACE BAY	GRANVILLE FERRY	HALIFAX				No.
	Sand Lake	Springs	Chain and/or Long Lake				
	Raw and finished water	Raw and finished water	Raw water				
	At pumps	Town tap	At intake				
	Sept. 2/54	Sept. 9/54	April 11/57	June 10/57	Sept. 10/57	Nov. 27/57	1
	17:217	47:244	14:20	22:45	15:29	8:19	2
	17.2	17.5	.....	.....	.....	.....	3
	21.8 (22)	22.6 (19)	24.3	22.4	21.6	24.9	4
	8.9	3.5	4.9	3.9	3.6	5.9	5
	16	1.2	6.5	1.3	4.1	5.0	6
	5.8 (4.8)	7.5 (8.0)	5.1	5.3	5.3	5.3	7
	15	15	25	5	10	25	8
	2	0	6	0	0.3	0.3	9
	.....	.....	.....	.....	.....	.....	10
	.....	.....	.....	.....	.....	.....	11
	39.2	50.4	44.0	30.8	40.8	35.2	12
	11.6	13.2	20.4	18.0	16.8	15.6	13
	62.8	67.6	42.6	42.3	39.8	41.8	14
	1.4	5.5	1.1	0.8	0.8	1.2	15
See	1.1	1.1	0.6	0.8	0.7	0.6	16
North Sydney, N.S.	.....	.....	.....	.....	.....	.....	17
	0.07	Trace	0.07	Trace	0.06	0.02	18
	0.03	Trace	0.04	0.02	0.04	0.04	19
	0.19	0.0	0.26	0.0	0.09	0.11	20
	0.01	0.0	0.0	0.0	0.0	0.0	21
	.....	.....	0.01	0.0	0.0	0.0	22
	6.5	5.9	3.8	4.0	3.6	4.3	23
	0.5	0.4	0.4	0.5	0.4	0.4	24
	.....	.....	0.05	0.05	0.05	0.05	25
	0	0 (0)	0	0	0	0	26
	5.9	22.8 (25.3)	0.5	0.5	0.6	0.7	27
	4.5	3.8	5.1	5.5 (5.7)	4.9	5.2	28
	11.9	5.6	7.1	6.9 (7.0)	6.4	7.8	29
	0.05	0.0	0.0	0.0	0.0	0.0	30
	0.2	0.8	0.0	0.1	0.1	0.1	31
	0.7	11	2.8	3.8	1.8	3.2	32
	4.8	18.3 (19.1)	0.4 (1.3)	0.4	0.5	0.6	33
	3.2	0.0 (0.0)	4.8	4.9	4.4	4.9	34
	8.0 (8.9)	18.3 (19.1)	5.2	5.3	4.9	5.5	35
	30.0	45.7	21.6	22.7	19.2	23.4	36
	58.8	40.6	52.3	58.8	55.8	57.7	37
	−4.8	−2.9	−6.2	−6.1	−6.1	−5.9	38
	15.4	13.3	17.5	17.5	17.5	17.1	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.					
	Municipality	HALIFAX (Cont'd)			
	Source(s)	Chain and/or Long Lake (Cont'd)			Spruce Hill Lake
		Raw water			Raw water
	Sampling point	At intake			At intake
1	Date of sampling	Feb. 24/58	May 23/58	Sept. 3/58	Aug. 27/54
2	Storage period (days)	16:28	18:33	12:21	19:34
3	Sampling temperature, °C.	.....	.....	.....	17.2
4	Test temperature, °C.	24.4	22.9	23.6	21.3 (22)
5	Oxygen consumed by $KMnO_4$	5.4	4.6	3.0	6.1
6	Carbon dioxide (CO_2), (calculated)	.....	.....	.....	.....
7	pH	5.0	5.0	5.4	4.9 (5.3)
8	Colour	30	25	20	15
9	Turbidity	0.3	0	0	0
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	39.6	34.8	42.0	22.6
13	Ignition loss at 550° C.	23.2	20.0	15.2	9.8
14	Specific conductance, micromhos at 25°C.	44.5	41.2	37.0	30.65
15	Calcium (Ca)	0.8	1.0	0.8	0.4
16	Magnesium (Mg)	0.9	0.5	0.6	0.4
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.06	Trace	0.03	0.05
19	Manganese (Mn)	0.05	0.02	0.11	0.05
20	Aluminum (Al)	0.12	0.13	0.17	0.07
21	Copper (Cu)	0.0	0.0	0.0	0.0
22	Zinc (Zn)	0.0	0.0	0.0	0.0
23	Sodium (Na)	4.1	3.8	3.4	3.4
24	Potassium (K)	0.3	0.3	0.3	0.4
25	Ammonia (NH_3)	0.1	0.2	0.1	0.01
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	0.0	0.0	0.0	0.5
28	Sulphate (SO_4)	6.2	4.7	5.0	3.6
29	Chloride (Cl)	7.3	7.0	6.0	4.4
30	Fluoride (F)	0.05	0.0	0.0	0.1
31	Nitrate (NO_3)	0.2	0.0	0.2	Trace
32	Silica (SiO_2), colorimetric	2.5	2.3	2.9	1.2
33	Carbonate hardness as $CaCO_3$	0.0	0.0	0.0	0.4 (3.1)
34	Non-carbonate hardness as $CaCO_3$	5.7	4.6	4.5	2.2
35	Total hardness as $CaCO_3$	5.7	4.6	4.5	2.6 (5.3)
36	Sum of constituents	22.7	19.8	19.5	14.5
37	Per cent sodium	55.3	59.2	55.0	69.8
38	Saturation index at test temperature	−6.3	−6.4	−6.0	−5.4
39	Stability index at test temperature	17.6	17.8	17.4	15.7
	Remarks:				Lead = 0.01

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

HALIFAX (Cont'd)							No.
Spruce Hill Lake (Cont'd)							
Raw water							
At intake							
Apr. 11/57 14:20	June 10/57 22:45	Sept. 10/57 15:29	Nov. 27/57 6:12	Feb. 24/58 16:28	May 23/58 18:33	Sept. 3/58 12:21	1
							2
							3
24.1	22.5	21.6	22.8	23.6	22.9	23.6	4
5.5	4.5	3.6	4.8	6.3	5.4	4.3	5
							6
5.1	5.4	5.8	5.2	5.3	4.8	5.3	7
25	10	5	25	40	30	25	8
5	0	0.8	0.3	0.3	0.8	0.8	9
3.3							10
0.7							11
37.2	26.4	30.8	22.4	38.4	31.2	21.6	12
12.4	14.0	15.6	3.2	18.4	17.2	14.8	13
37.3	34.7	36.7	36.6	48.2	37.5	34.3	14
0.5	0.9	1.0	0.6	0.9	0.5	0.5	15
0.7	0.6	0.5	0.8	0.7	0.6	0.5	16
							17
0.06	Trace	0.02	0.07	0.11	0.06	0.02	18
0.04	0.02	0.04	0.02	0.04	0.02	0.11	19
0.22	0.08	0.07	0.06	0.11	0.10	0.04	20
Trace	0.0	0.0	0.0	0.0	0.0	0.0	21
0.0	0.05	0.0	0.0	0.0	0.0	0.0	22
3.4	3.3	3.6	4.0	4.5	3.4	3.3	23
0.4	0.3	0.5	0.3	0.3	0.3	0.3	24
0.0	0.05	0.0	0.1	0.1	0.15	0.15	25
0	0	0	0	0	0	0	26
0.6	1.8	2.4	0.4	0.0	0.0	0.0	27
5.1	3.8	4.3	5.3	3.5	4.7	5.0	28
5.9	6.0	6.3	6.5	7.8	5.9	6.2	29
0.0	0.1	0.0	0.0	0.35	0.0	0.0	30
0.0	0.2	0.05	0.1	0.15	0.0	0.1	31
2.2	1.6	1.1	1.8	2.1	1.7	1.1	32
0.5	1.5	2.0	0.3	0.0	0.0	0.0	33
3.6	3.2	2.6	4.5	5.1	3.7	3.3	34
4.1	4.7	4.6	4.8	5.1	3.7	3.3	35
18.8	18.0	18.2	19.3	20.7	17.3	17.2	36
55.0	55.3	57.9	59.4	59.5	60.6	63.4	37
−6.2	−5.8	−5.3	−6.2	−6.0	−6.6	−6.0	38
16.5	17.0	16.4	17.2	17.3	18.0	17.3	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.					
	Municipality	HALIFAX (Cont'd)			
	Source(s)	Spruce Hill Lake	Chain or Long Lakes		
		Finished water	Finished water		
	Sampling point	At tap	At city tap or at main plant		
1	Date of sampling	Aug. 27/54	Aug. 27/54	Sept. 18/56	Jan. 24/57
2	Storage period (days)	20:34	20:34	10:15	7:14
3	Sampling temperature, °C.	19.4	18.3	18.0	.....
4	Test temperature, °C.	20.8 (22)	20.9 (23)	25.0	23.6
5	Oxygen consumed by $KMnO_4$	7.9	7.3	10.4	13.5
6	Carbon dioxide (CO_2), (calculated)	0.8	.....	1.1	2.6
7	pH	7.0 (7.0)	6.6 (7.3)	6.8	6.6
8	Colour	15	12	5	20
9	Turbidity	0	0	0	0
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	33.2	36.2	37.6	41.2
13	Ignition loss at 550°C.	13.6	15.0	21.6	12.8
14	Specific conductance, micromhos at 25°C.	41.8	44.5	47.2	59.5
15	Calcium (Ca)	3.5	3.2	3.6	4.8
16	Magnesium (Mg)	0.1	0.5	0.4	0.6
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.08	0.08	0.07	0.12
19	Manganese (Mn)	0.02	0.02	0.05	0.04
20	Aluminum (Al)	0.03	0.04	0.19	0.10
21	Copper (Cu)	0.13	0.04	0.0	0.0
22	Zinc (Zn)	.....	.....	0.0	0.05
23	Sodium (Na)	3.4	3.5	3.8	4.0
24	Potassium (K)	0.4	0.3	0.3	0.4
25	Ammonia (NH_3)	.....	.....	0.1	0.2
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	4.6	4.1	4.3	5.6
28	Sulphate (SO_4)	4.4	6.0	5.0	5.3
29	Chloride (Cl)	6.4	6.8	6.2	8.8
30	Fluoride (F)	0.1	0.1	1.5	1.0
31	Nitrate (NO_3)	Trace	Trace	0.0	0.4
32	Silica (SiO_2), colorimetric	1.9	2.0	2.6	3.9
33	Carbonate hardness as $CaCO_3$	3.8 (8.3)	3.4 (6.2)	3.6	4.6
34	Non-carbonate hardness as $CaCO_3$	5.4 (2.9)	6.6 (5.0)	7.0	9.8
35	Total hardness as $CaCO_3$	9.2 (11.2)	10.0 (11.2)	10.6	14.4
36	Sum of constituents	22.7	24.5	25.9	32.2
37	Per cent sodium	43.4	42.2	40.2	34.6
38	Saturation index at test temperature	−2.4	−3.8	−3.4	−3.4
39	Stability index at test temperature	12.7	14.2	13.6	13.4
	Remarks:	High pressure service. Lead −0.0 p.p.m.	Lead −0.0 p.p.m.		Low pressure service.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

HALIFAX (Cont'd)							No.
Chain or Long Lakes							
Finished water							
At city tap or at main plant							
Mar. 25/57 17:23	June 6/57 22:45	Sept. 10/57 15:29	Nov. 27/57 8:19	Feb. 24/58 17:28	May 23/58 18:33	Sept. 3/58 12:21	1
							2
							3
25.3	22.3	21.7	25.0	23.8	23.0	23.7	4
5.3	3.8	3.0	5.2	5.0	4.0	2.8	5
7.5	1.9	1.2	1.5	3.3	1.3	0.9	6
5.9	6.6	6.9	6.7	6.9	6.5	6.9	7
20	5	10	20	30	20	20	8
3	0.3	0.9	0.8	0	0	0	9
							10
							11
34.8	48.0	51.6	41.6	49.2	43.6	54.8	12
11.6	16.0	16.0	16.8	22.0	20.4	21.6	13
53.3	56.5	54.4	52.6	59.8	53.9	53.8	14
2.6	4.3	3.9	3.6	4.5	3.9	4.3	15
1.1	0.7	0.8	0.8	0.8	0.8	0.7	16
							17
0.06	Trace	0.08	0.10	0.12	0.06	0.08	18
0.02	0.02	0.02	0.04	0.02	0.01	0.02	19
0.37	Trace	0.03	0.06	0.09	0.06	0.18	20
0.0	0.0	0.0	0.0	0.0	0.0	0.0	21
0.0	0.0	0.0	0.0	0.0	0.0	0.0	22
4.2	4.1	4.0	4.9	4.5	4.2	3.8	23
0.3	0.3	0.4	0.3	0.3	0.3	0.3	24
0.05	0.05	0.0	0.05	0.1	0.1	0.05	25
0	0	0	0	0	0	0	26
3.9	4.8	4.3	4.6	5.4	2.6	4.5	27
4.6	5.9	6.1	7.2	5.3	4.9	5.3	28
9.5	8.7	8.2	9.0	8.8	8.6	8.0	29
0.5	1.0	0.5	0.5	0.9	0.9	1.0	30
0.2	0.2	0.05	0.1	0.1	0.1	0.2	31
3.4	3.0	2.5	3.3	2.8	2.8	2.2	32
3.2	3.9	3.5	3.8	4.4	2.1	3.7	33
7.8	9.7	9.5	8.5	10.1	10.9	9.9	34
11.0	13.6	13.0	12.3	14.5	13.0	13.6	35
28.8	30.6	28.7	32.2	31.0	27.9	28.3	36
39.9	38.6	38.5	44.3	38.1	39.7	35.2	37
−4.5	−3.6	−3.3	−3.5	−3.2	−3.9	−3.2	38
14.9	13.8	13.5	13.7	13.3	14.3	13.3	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.					
	Municipality	HALIFAX (Cont'd)			
	Source(s)	Spruce, Chain or Long Lakes			
		Mixed waters – city supply			
	Sampling point	At various taps			
1	Date of sampling	Aug. 27/54	July 18/55	Nov. 19/55	Jan. 10/56
2	Storage period (days)	20:34	16:22	.....	16:23
3	Sampling temperature, °C.	18.9	16.7	.....	6.1
4	Test temperature, °C.	20.9 (21.5)	29.0	24.0	22.5
5	Oxygen consumed by $KMnO_4$	6.2	11	.....	.....
6	Carbon dioxide (CO_2), (calculated)	3.0	1.3	1.4	1.4
7	pH	6.6 (7.6)	6.7	7.1	6.9
8	Colour	8	20	30	30
9	Turbidity	0	2	.....	.....
10	Suspended matter, dried at 105° C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550° C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105° C.	38.8	42.8	.....	.....
13	Ignition loss at 550° C.	13.8	16.0	.....	.....
13	Specific conductance, micromhos at 25° C.	45.3	49.9	62.1	51.2
15	Calcium (Ca)	3.5	3.5	4.3	4.3
16	Magnesium (Mg)	0.5	0.6	0.9	0.5
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.08	0.42	0.67	.....
19	Manganese (Mn)	0.02	0.06	0.02	.....
20	Aluminum (Al)	0.03	0.06	0.0	.....
21	Copper (Cu)	0.06	0.03	Trace	.....
22	Zinc (Zn)	.....	.....	.....	.....
23	Sodium (Na)	3.4	2.8	3.4	3.2
24	Potassium (K)	0.3	0.4	0.4	0.4
25	Ammonia (NH_3)	.....	0.2	0.0	0.0
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	7.1	4.3	10.4	6.6
28	Sulphate (SO_4)	5.0	5.3	2.8	3.6
29	Chloride (Cl)	6.7	7.6	7.2	7.3
30	Fluoride (F)	0.1	0.0	0.0	.....
31	Nitrate (NO_3)	Trace	0.4	0.8	0.8
32	Silica (SiO_2), colorimetric	2.0	1.8	2.4	2.7
33	Carbonate hardness as $CaCO_3$	5.8	3.5	8.5	5.4
34	Non-carbonate hardness as $CaCO_3$	5.0	9.4	5.9	7.4
35	Total hardness as $CaCO_3$	10.8	12.9	14.4	12.8
36	Sum of constituents	25.1	25.3	28.0	26.0
37	Per cent sodium	39.9	32.0	31.4	34.3
38	Saturation index at test temperature	–3.2	–3.4	–2.7	–3.1
39	Stability index at test temperature	13.3	13.5	12.5	13.1
	Remarks:	Lead – 0.0 p.p.m.		Lithium – 0.0 p.p.m.	

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

HALIFAX (Concluded)			HANTSPORT		INVERNESS	KENTVILLE	No.
Spruce, Chain or Long Lakes			Davison Lake	Artesian Wells	Springs	Magee Lake	
Mixed waters – city supply			Raw and finished water*		Raw and finished water	Raw water	
At various taps			From lake	At pump	Town tap	At intake	
Apr. 10/56 16:23	May 10/56 6:15	July 3/56 10:14	Aug. 20/54 19:173	Aug. 20/54 20:168	Aug. 31/54 17:218	Apr. 16/56 56:85	1 2
9.4	11.1	.....	14.4	11.2	14.6	7.2	3
23.4	23.0	23.4	21.8 (23)	21.8 (22)	21.8 (20)	22.9	4
.....	4.8	6.3	.....	.....	5.6	7.0	5
2.2	2.4	Trace	1.6	2.5	1.4	0	6
6.8	6.7	7.9	7.0 (7.1)	8.1 (7.6)	7.4 (7.2)	8.8	7
35	20	30	55 (80)	2	8	0	8
0	0.2	0	1	3	0.8	2	9
.....	.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	11
42.4	48.8	48.0	28.0	211	54.0	94.8	12
17.6	17.6	17.6	16.0	18.8	7.6	18.8	13
52.4	43.0	56.2	29.8	373	88.7	135	14
5.1	4.1	6.1	0.4	28.3	4.8	3.9	15
0.4	0.3	0.5	0.8	16.0	1.8	0.4	16
.....	.....	.....	.....	.....	.....	.....	17
0.29	0.24	0.07	0.8	0.8	0.01	0.10	18
0.02	0.04	0.02	0.0	0.0	0.0	0.0	19
0.07	0.28	0.31	0.24	0.25	0.02	Trace	20
.....	Trace	0.0	0.0	0.05	0.0	0.0	21
.....	0.1	0.3	.....	.....	.....	0.0	22
3.2	2.7	3.3	2.4	26.8	8.0	21.0	23
0.4	0.3	0.4	0.3	1.9	0.9	2.4	24
0.1	0.0	0.1	.....	.....	.....	0.0	25
0	0	0	0 (0)	0 (0)	0 (0)	3.6	26
8.0	7.2	11.1	9.4 (10.1)	199 (202)	19.9 (22.7)	49.4	27
4.6	3.6	2.8	0.4	31.5	6.8	3.3	28
6.5	6.4	7.4	3.2	5.0	11.2	6.5	29
.....	0.0	0.9	0.2	0.05	0.1	0.2	30
1.2	1.2	2.8	0.2	1.0	0.6	0.8	31
2.8	1.9	4.8	1.1	9.5	6.3	11	32
6.6	5.9	9.1	4.3	136 (140)	16.3 (18.6)	11.4	33
7.8	5.6	8.2	0.0	0.0 (0)	3.1 (2.6)	0.0	34
14.4	11.5	17.3	4.3	136 (140)	19.4 (21.2)	11.4	35
28.6	24.5	34.9	14.6	219	50.3	76.4	36
30.6	29.7	26.8	41.4	29.1	45.6	75.7	37
−3.0	−3.3	−1.7	−3.1	+0.3	−2.1	−0.4	38
12.8	13.3	11.3	13.2	7.5	11.6	9.6	39

*Town supply usually 60 per cent lake, 40 per cent wells.

See also Station No. 74, Table II.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.					
	Municipality	KENTVILLE			
	Source(s)	Magee Lake			
		Finished water			
	Sampling point	At army camp			
1	Date of sampling	Aug. 20/54	Apr. 16/56	Aug. 8/56	Dec. 13/56
2	Storage period (days)	20:196	56:85	7:12	46:167
3	Sampling temperature, °C.	17.8	5.6	10.6	5.6
4	Test temperature, °C.	21.2 (23)	23.8	25.6	23.6
5	Oxygen consumed by $KMnO_4$	.....	7.7	9.8	14
6	Carbon dioxide (CO_2), (calculated)	0.9	1.9	1.7	2.9
7	pH	7.4 (7.0)	6.8	6.9	6.7
8	Colour	15 (30)	5	10	40
9	Turbidity	0	3	0	1
10	Suspended matter, dried at 105°C.	.....	13.3	.....	.....
11	Suspended matter, ignited at 550°C.	.....	3.4	.....	.....
12	Residue on evaporation, dried at 105°C.	53.2	57.6	54.8	52.4
13	Ignition loss at 550°C.	14.4	15.2	12.4	16.8
14	Specific conductance, micromhos at 25°C.	60.7	74.1	72.5	67.0
15	Calcium (Ca)	7.0	7.8	7.3	4.2
16	Magnesium (Mg)	1.3	1.2	1.2	2.1
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	Trace	0.05	0.08	0.64
19	Manganese (Mn)	Trace	0.01	0.02	0.02
20	Aluminum (Al)	0.40	0.58	0.35	0.33
21	Copper (Cu)	0.0	0.0	0.0	Trace
22	Zinc (Zn)	.....	0.0	0.01	0.05
23	Sodium (Na)	2.9	2.8	2.9	3.5
24	Potassium (K)	0.4	0.5	0.4	0.5
25	Ammonia (NH_3)	.....	0.1	0.1	0.0
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	14.7	7.4	8.4	8.7
28	Sulphate (SO_4)	14.0	16.0	14.6	12.3
29	Chloride (Cl)	2.9	4.4	4.8	4.7
30	Fluoride (F)	0.25	1.0	0.75	0.3
31	Nitrate (NO_3)	0.0	1.2	2.4	0.6
32	Silica (SiO_2), colorimetric	2.2	3.8	3.9	3.8
33	Carbonate hardness as $CaCO_3$	12.1	6.1	6.9	7.2
34	Non-carbonate hardness as $CaCO_3$	10.7	18.3	16.3	11.9
35	Total hardness as $CaCO_3$	22.8 (23.4)	24.4	23.2	19.1
36	Sum of constituents	38.7	43.1	42.8	37.4
37	Per cent sodium	19.8	17.7	19.6	25.0
38	Saturation index at test temperature	−2.2	−2.9	−2.7	−3.2
39	Stability index at test temperature	11.8	12.6	12.3	13.1
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

LAWRENCETOWN	LEQUILLE	LIVERPOOL		LOUISBURG	LUNENBURG		No.
Springs and surface run-off		Spring-fed lake		Kelly Lake*	Cantelope Lake		
Raw and finished water		Raw and finished water		Raw and finished water	Raw and finished water		
Town tap		Town tap		Town tap	Town tap		
Aug. 21/54	Supplied from Annapolis Royal	Oct. 9/50†	Aug. 23/54	Sept. 3/54	Nov. 21/51	Aug. 21/54	1
19:214		17	18:200	18:257	7:21	19:214	2
18.3		.....	19.4	15.9	4.4	18.3	3
21.2 (24)		.....	18.6 (23)	21.0 (20.5)	24.0	21.1 (22.5)	4
.....		3	.....	7.6	.....	.....	5
1.9		3	7.9	2.1	1.4	1.7	6
6.9 (6.9)		5.8	5.8 (5.8)	6.9 (6.0)	6.7	6.8 (6.4)	7
15 (20)		15	10	45 (40)	5	2	8
0		10	2	0	3	0.8	9
.....		.....	.....	.....	2.6	.....	10
.....		.....	.....	.....	2.0	.....	11
45.2		.....	23.2	61.2	37.8	32.8	12
15.6		.....	6.2	20.8	9.0	10.8	13
41.0		.....	36.3	62.3	37.8	36.9	14
2.0		.....	1.6	5.3	2.5	2.1	15
0.7		.....	0.4	0.3	1.0	0.3	16
.....		0.1	.....	.....	0.18	.....	17
0.02		.....	0.04	0.17	0.03	Trace	18
0.0		.....	0.0	0.01	.....	0.0	19
0.24		.....	0.04	0.08	.....	0.16	20
0.45		.....	0.04	0.14	.....	0.18	21
.....		.....	.....	.....	.....	.....	22
3.9		4.6	4.0	5.0	3.4	3.4	23
0.5		.....	0.4	0.4	0.3	0.3	24
.....		.....	.....	.....	.....	.....	25
0		0	0 (0)	0	0	0	26
9.0		1.2	2.9 (2.6)	10.0 (10.1)	4.4	6.3	27
4.1		1.9	3.5	0.9	5.9	3.6	28
4.9		7.8	7.1	13.3	7.2	5.0	29
0.2		.....	0.09	.....	0.05	0.0	30
Trace		.....	0.2	0.4	0.0	0.3	31
3.6		1.2	0.9	3.1	9.6	0.5	32
7.4		1.0	2.4 (2.1)	8.2	3.6	5.2	33
0.5		3.2	3.2	6.3	6.8	1.3	34
7.9		4.2	5.0	14.5	10.4 (10.1)	6.5 (6.4)	35
25.0		.....	19.7	33.9	32.2	18.9	36
44.4		.....	65.4	40.5	41.7	47.9	37
−3.3		.....	−5.2	−3.3	−3.7	−3.6	38
13.5		.....	16.2	13.5	14.1	14.0	39

† Analysis supplied by The Permutit Co. of Canada.

* Joined to Gull, Peter, Morrison and Stewart Lakes.

88095-5—8½

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.	Municipality	MAHONE BAY	MIDDLETON		MULGRAVE
	Source(s)	Oakland Lake	Lily Lake and well		Chain of Lakes Brook
		Raw and finished water	Lily Lake	Well	Raw and finished water
			Raw and finished water		
	Sampling point	Town tap	Town tap	Well	Town tap
1	Date of sampling	Aug. 21/54	Aug. 21/54		Aug. 31/54
2	Storage period (days)	20:214	19:214		17:212
3	Sampling temperature, °C.	18.6	17.8		14.4
4	Test temperature, °C.	21.1 (22)	21.2 (24)		21.8 (21)
5	Oxygen consumed by $KMnO_4$	.....	.....		6.5
6	Carbon dioxide (CO_2), (calculated)	2.4	1.9		2.2
7	pH	6.4 (6.4)	7.2 (6.8)		7.4 (6.6)
8	Colour	35 (35)	55 (80)		8
9	Turbidity	2	3		0
10	Suspended matter, dried at 105°C.	.....	.....		.....
11	Suspended matter, ignited at 550°C.	.....	.....		.....
12	Residue on evaporation, dried at 105°C.	44.8	70.4		53.8
13	Ignition loss at 550°C.	20.0	25.2		8.0
14	Specific conductance, micromhos at 25°C.	37.1	72.3		87.2
15	Calcium (Ca)	1.4	6.5		7.7
16	Magnesium (Mg)	0.6	1.6		2.0
17	Iron (Fe) Total	.....	.....	No data	.....
18	Dissolved	0.03	0.15		0.02
19	Manganese (Mn)	0.0	0.0		0.01
20	Aluminum (Al)	0.1	0.16		0.0
21	Copper (Cu)	0.17	0.3		0.0
22	Zinc (Zn)	.....	.....		.....
23	Sodium (Na)	3.7	4.3		5.7
24	Potassium (K)	0.3	0.4		0.5
25	Ammonia (NH_3)	.....	.....		.....
26	Carbonate (CO_3)	0	0		0 (0)
27	Bicarbonate (HCO_3)	3.8	19.3		32.9 (35.4)
28	Sulphate (SO_4)	5.1	10.1		5.7
29	Chloride (Cl)	5.7	4.8		6.3
30	Fluoride (F)	0.4	0.4		0.03
31	Nitrate (NO_3)	Trace	0.3		0.4
32	Silica (SiO_2), colorimetric	0.4	2.1		3.8
33	Carbonate hardness as $CaCO_3$	3.1	15.8		27.0 (29.0)
34	Non-carbonate hardness as $CaCO_3$	2.9	7.0		0.4 (0.3)
35	Total hardness as $CaCO_3$	6.0 (6.8)	22.8 (23.4)		27.4 (29.3)
36	Sum of constituents	19.8	40.6		48.4
37	Per cent sodium	52.8	27.3		30.6
38	Saturation index at test temperature	−3.3	−2.2		−0.8
39	Stability index at test temperature	14.0	11.6		9.0
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

NEW GLASGOW	NEW WATERFORD	NORTH SYDNEY	OXFORD	PARRSBORO	PICTOU	No.
Forbes Lake	Waterford Lake	Potter's Lake	Wells and springs	Streams and spring	Wells	
Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	
Town tap	Town tap	Town tap	Town tap	Town tap	Town tap	
Sept. 7/54	Sept. 3/54	Sept. 1/54	Sept. 10/54	Aug. 19/54	Sept. 8/54	1
17:237	18:241	17:217	46:158	15:197	16:245	2
18.3	21.7	20.6	12.8	14.4	10.0	3
21.2 (20)	21.0 (25.5)	21.8 (23.5)	22.6 (18)	23.2 (22)	19.9 (17)	4
3.4	5.8	8.2	3.0	.....	2.0	5
1.7	1.9	0.4	1.3	1.3	11	6
7.3 (7.6)	6.5 (6.0)	7.5 (7.4)	7.9 (6.3)	7.4 (6.5)	7.3 (7.1)	7
20	10 (20)	10	5	30	20	8
0	0	2	1	0.7	4	9
.....	.....	.....	.....	.....	4.0	10
.....	.....	.....	.....	.....	0.3	11
56.4	63.2	39.6	115	51.6	174	12
16.4	21.6	11.2	9.6	18.0	13.2	13
96.5	93.8	50.7	191	53.6	280	14
10.6	5.3	2.4	11.8	5.3	35.3	15
0.7	1.5	0.9	4.0	0.8	4.5	16
.....	.....	.....	.....	.....	.....	17
0.0	0.02	0.0	0.14	0.03	1.1	18
Trace	Trace	0.0	0.0	Trace	0.01	19
0.01	0.17	0.05	0.39	0.0	0.27	20
0.04	0.0	0.0	0.1	0.0	0.0	21
.....	.....	.....	.....	.....	.....	22
2.8	6.5	4.6	18.4	3.3	15.6	23
0.7	0.8	0.5	1.5	0.5	1.9	24
.....	.....	.....	.....	.....	.....	25
0 (0)	0	0	0 (0)	0 (0)	0 (0)	26
19.4(22.7)	3.8	9.9	60.8 (64.4)	20.8 (22.7)	127 (127)	27
14.3	14.1	3.1	10.8	1.1	25.1	28
4.0	13.1	7.8	21.0	3.3	8.7	29
0.05	0.1	0.1	0.05	0.0	0.1	30
0.8	0.8	0.4	0.0	0.6	1.6	31
2.0	1.1	1.0	9.5	4.4	13	32
15.9 (18.6)	3.1	8.1	45.9 (44.6)	16.5	104 (104)	33
13.4 (13.2)	16.3	1.6	0.0 (0)	0.0	2.6 (2.7)	34
29.3 (31.8)	19.4	9.7	45.9 (44.6)	16.5	107 (107)	35
45.6	45.4	25.8	108	29.6	170	36
16.7	40.0	47.5	44.3	29.4	23.1	37
−1.9	−3.7	−2.6	−0.8	−2.0	−0.7	38
11.1	13.9	12.7	9.5	11.4	8.7	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.	Municipality	PORT WILLIAMS		SPRINGHILL	STELLARTON
	Source(s)	Well and springs		Springs	East River
		Well	Springs	Raw and finished water	Raw and finished water
		Raw and finished water			
	Sampling point	At pump	At reservoir	Town tap	Direct from river
1	Date of sampling	Sept. 9/54	Sept. 9/54	Aug. 18/54	Sept. 8/54
2	Storage period (days)	28:244	28:244	16:198	16:236
3	Sampling temperature, °C.	8.9	16.7	15.0	16.4
4	Test temperature, °C.	21.7 (17)	21.7 (19)	23.2 (20)	21.2 (20)
5	Oxygen consumed by $KMnO_4$	.....	.....	.....	2.5
6	Carbon dioxide (CO_2), (calculated)	2.1	0.9	0.9	1.3
7	pH	8.0 (7.4)	8.9	7.5 (7.9)	7.5 (7.5)
8	Colour	0	3	8	10
9	Turbidity	0	0	1	0
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	169	148	45.2	90.8
13	Ignition loss at 550°C.	21.6	35.6	16.0	22.4
14	Specific conductance, micromhos at 25°C.	262	207	44.2	144
15	Calcium (Ca)	43.8	27.2	1.8	16.7
16	Magnesium (Mg)	2.0	1.8	1.6	2.2
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.08	0.0	Trace	0.0
19	Manganese (Mn)	0.0	0.0	0.01	0.0
20	Aluminum (Al)	0.21	0.04	Trace	0.0
21	Copper (Cu)	0.0	0.0	0.0	0.0
22	Zinc (Zn)	.....	.....	.....	.....
23	Sodium (Na)	4.7	7.7	3.1	5.2
24	Potassium (K)	1.7	1.2	0.5	0.8
25	Ammonia (NH_3)	.....	.....	.....	.....
26	Carbonate (CO_3)	0	2.4	0 (0)	0 (0)
27	Bicarbonate (HCO_3)	123	36.0	13.8 (15.1)	26.6 (27.9)
28	Sulphate (SO_4)	15.8	27.8	0.0	30.4
29	Chloride (Cl)	10.6	22.1	2.4	6.7
30	Fluoride (F)	0.0	0.0	0.01	0.1
31	Nitrate (NO_3)	4.0	1.6	5.2	0.8
32	Silica (SiO_2), colorimetric	13	7.5	5.1	4.4
33	Carbonate hardness as $CaCO_3$	101	33.5	11.1	21.8 (22.8)
34	Non-carbonate hardness as $CaCO_3$	16.7	41.8	0	28.9 (28.1)
35	Total hardness as $CaCO_3$	118 (119)	75.3 (75.3)	11.1	50.7 (50.9)
36	Sum of constituents	157	117	26.5	80.4
37	Per cent sodium	7.8	17.9	36.5	17.9
38	Saturation index at test temperature	+0.2	+0.4	−2.5	−1.4
39	Stability index at test temperature	7.6	8.1	12.5	10.3
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

SYDNEY			SYDNEY MINES	TRENTON		No.
Dumeresq and Middle Lakes			Purchased from North Sydney	Wells		
Raw and finished water				Park St. well	7th St. well	
				Raw and finished water		
Town tap				At pump	At pump	
Nov. 3/50†	Nov. 14/52†	Sept. 3/54				1
		14:121				2
		17.8				3
		21.2 (23)				4
		7.7				5
80	12	6.0		4	3	6
5.5	6.4	5.8 (4.8)		7.7	7.8	7
0	0	45 (50)		3		8
	3	2		3	15	9
Some	Trace					10
						11
33	81	36.0				12
		16.0				13
		43.1				14
2.3	9.6	1.4		45.6	44.0	15
0.0	1.9	0.8		11.1	10.2	16
	0.1		*See*	0.1	2.9	17
		0.15	North Sydney,	0.1	0.1	18
		0.08	N.S.	0.1	0.9	19
	0.0					20
		0.56				21
						22
		3.3		(12.0 as Na	(6.4 as Na	23
		0.6		(	(	24
	0.0					25
0	0	0		0	0	26
17.1	17.1	2.3		141	132	27
2.9	13.5	3.3		48	42	28
6.7	11.0	7.8		12.8	7.1	29
		0.1		0.15	0.2	30
		0.6				31
0.9	3.5	1.8		13	15	32
5.7	14	1.9		116	109	33
0	18	4.9		44	43	34
5.7	32	6.8		160	152	35
		21.6		212	190	36
		44.7		14.0	8.4	37
−4.3	−2.6	−5.2		0	0	38
14.1	11.6	16.2		7.7	7.8	39

† Analyses supplied by Alchem Limited, Burlington, Ontario.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

No.				
	Municipality	TRENTON (Concl'd)	TRURO	
	Source(s)	Wells	Lepper Brook and wells	
		Mixed wells	Lepper Brook	Wells*
		Raw and finished water	Raw and finished water	
	Sampling point	Town tap	Town tap	At wells
1	Date of sampling	Sept. 7/54	Aug. 19/54	Aug. 19/54
2	Storage period (days)	17:246	15:158	19:158
3	Sampling temperature, °C.	15.6	17.2	10.3
4	Test temperature, °C.	21.2 (18.5)	23.2 (22)	21.9 (17)
5	Oxygen consumed by $KMnO_4$	3.3	.....	.....
6	Carbon dioxide (CO_2), (calculated)	3.4	2.6	0.8
7	pH	7.8 (7.3)	7.0 (6.5)	8.4 (7.0)
8	Colour	0	60	0
9	Turbidity	0	1	0
10	Suspended matter, dried at 105°C.	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	218	48.8	218
13	Ignition loss at 550°C.	29.6	14.8	17.2
14	Specific conductance, micromhos at 25°C.	335	50.9	370
15	Calcium (Ca)	43.3	3.6	23.4
16	Magnesium (Mg)	10.7	1.5	7.9
17	Iron (Fe) Total	.....	.....	.....
18	Dissolved	0.51	0.30	Trace
19	Manganese (Mn)	0.0	0.02	0.0
20	Aluminum (Al)	0.37	0.0	0.06
21	Copper (Cu)	0.0	0.08	0.0
22	Zinc (Zn)	.....	.....	.....
23	Sodium (Na)	8.1	2.9	38.8
24	Potassium (K)	1.6	0.4	1.0
25	Ammonia (NH_3)	.....	.....	.....
26	Carbonate (CO_3)	0 (0)	0 (0)	2.6 (0)
27	Bicarbonate (HCO_3)	138 (139)	16.5 (17.7)	109 (116)
28	Sulphate (SO_4)	44.5	1.9	40.0
29	Chloride (Cl)	9.8	4.2	30.5
30	Fluoride (F)	0.15	0.0	0.1
31	Nitrate (NO_3)	0.2	0.8	3.2
32	Silica (SiO_2), colorimetric	19	3.8	16
33	Carbonate hardness as $CaCO_3$	113 (114)	13.5	90.9 (93.4)
34	Non-carbonate hardness as $CaCO_3$	39.0 (38.0)	1.7	0 (0)
35	Total hardness as $CaCO_3$	152 (152)	15.2	90.9 (93.4)
36	Sum of constituents	206	27.6	209
37	Per cent sodium	10.0	27.8	47.7
38	Saturation index at test temperature	-0.0	-2.7	+0.2
39	Stability index at test temperature	7.8	12.4	8.0
	Remarks:			* Auxiliary supply,

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

C. NOVA SCOTIA

(In parts per million)

WESTVILLE		WINDSOR		WOLFVILLE	YARMOUTH	No.
Middle River and wells		Mill Lake		Brooks and streams (artificial lake)	Lake George	
Middle River	Wells					
Raw and finished water		Raw and finished water		Raw and finished water	Raw and finished water	
At intake pump		Town tap		Town tap	Town tap	
Sept. 8/54		Dec. 21/46	Aug. 20/54	Aug. 20/54	Aug. 24/54	1
16:236		8:34	18:173	19:173	20:219	2
17.8		.....	18.3	18.3	17.8	3
21.2 (21)		.....	21.9 (24.5)	21.8 (24)	19.4 (18)	4
2.7		.....	.....	.....	19.0	5
2.9		6.5	0.7	1.3	12	6
7.1 (7.5)		6.1	6.9 (7.5)	7.2 (6.9)	5.6 (5.9)	7
8		60	35 (55)	35 (40)	120	8
0		3	0	0	2.7	9
.....		.....	.....	.....	.....	10
.....		.....	.....	.....	.....	11
128		35.0	30.0	40.8	27.8	12
24.8		16.0	15.6	13.2	8.0	13
215		.....	24.8	52.8	46.3	14
10.2		1.3	1.0	3.6	1.7	15
2.8		1.0	0.3	1.5	0.6	16
.....		.....	.....	.....	.....	17
0.0	No data*	0.01	0.12	0.24	0.03	18
0.0		.. ..	0.0	0.0	Trace	19
0.0		.....	0.05	0.13	0.04	20
0.0		.....	0.05	0.23	0.04	21
.....		.....	.....	.....	.....	22
25.6		)3.2 as Na	2.2	3.1	4.9	23
0.8		)	0.2	0.5	0.6	24
.....		.....	.....	.....	.....	25
0		0	0	0 (0)	0	26
22.1		5.1	3.2	14.4 (17.7)	2.9	27
10.5		4.0	2.0	5.5	4.0	28
45.1		4.3	2.6	4.3	8.9	29
0.05		.....	0.1	0.1	0.1	30
0.8		1.8	0.4	0.4	0.6	31
3.9		1.3	1.4	3.0	1.1	32
18.1		4.2	2.6	11.8	2.4 (4.4)	33
18.9		3.1	1.1	3.4	4.3 (5.5)	34
37.0 (38.2)		7.3	3.7	15.2	6.7 (9.6)	35
111		19.4	12.0	29.7	24.0	36
60.1		.....	51.2	28.0	57.5	37
−2.1		−4.5	−4.1	−2.6	−5.2	38
11.3		14.1	15.1	12.4	16.0	39

* Wells dry at time of survey.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	ALBERT	ANDOVER	ATHOLVILLE	BATH
	Source(s)	Springs	Brook and springs	Artesian well (Well No. 1)	Springs and surface run-off
		Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water
	Sampling point	Town tap	Town tap	Town tap	Town tap
1	Date of sampling	Apr. 6/55	Aug. 7/54	Jan. 17/55	Aug. 9/54
2	Storage period (days)	14:19	10:129	11:18	9:133
3	Sampling temperature, °C.	7.2	12.8	4.4	12.8
4	Test temperature, °C.	24.8	23.5 (20)	17.3	22.9 (21)
5	Oxygen consumed by $KMnO_4$	5.8	.....	1.4	.....
6	Carbon dioxide (CO_2), (calculated)	1.4	2.7	1.9	2.0
7	pH	6.9	8.0 (8.0)	8.0	8.0 (7.4)
8	Colour	5	0	5	20
9	Turbidity	0	0.7	0	3
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	26.4	179	134	136
13	Ignition loss at 550°C.	7.6	20.0	20.0	20.0
14	Specific conductance, micromhos at 25°C.	37.0	288	220	212
15	Calcium (Ca)	2.9	52.7	29.6	38.0
16	Magnesium (Mg)	0.8	3.7	3.1	3.0
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.02	0.0	0.01	0.01
19	Manganese (Mn)	Trace	0.0	0.0	0.0
20	Aluminum (Al)	0.02	0.0	0.05	0.05
21	Copper (Cu)	0.0	0.0	0.0	0.0
22	Zinc (Zn)	.....	.....	.....	.....
23	Sodium (Na)	2.0	2.6	9.6	1.3
24	Potassium (K)	0.2	0.7	0.3	0.3
25	Ammonia (NH_3)	.....	.....	.....	.....
26	Carbonate (CO_3)	0	0 (0)	0	0 (0)
27	Bicarbonate (HCO_3)	7.2	165 (161)	103	121 (129)
28	Sulphate (SO_4)	3.5	10.2	7.5	8.5
29	Chloride (Cl)	3.6	3.7	12.0	0.7
30	Fluoride (F)	Trace	0.05	0.0	0.05
31	Nitrate (NO_3)	1.1	3.2	0.6	0.8
32	Silica (SiO_2), colorimetric	4.7	6.9	7.6	6.1
33	Carbonate hardness as $CaCO_3$	5.9	136 (133)	84.8	99.2 (106)
34	Non-carbonate hardness as $CaCO_3$	4.6	11.4 (17.4)	1.8	7.9 (3.7)
35	Total hardness as $CaCO_3$	10.5	147 (150)	86.6	107 (109)
36	Sum of constituents	22.3	165	121	118
37	Per cent sodium	28.3	3.7	19.3	2.6
38	Saturation index at test temperature	−3.2	+0.4	−0.2	+0.1
39	Stability index at test temperature	13.3	7.2	8.4	7.9
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

BATHURST			CAMPBELLTON	CHATHAM	CLAIR	No.
Carter's Brook and Middle River			Surface run-off	Wells*	Thompson Lake	
Carter's Brook		Middle River*	Raw and finished water	Raw and finished water	Raw and finished water	
Raw and finished water						
At pumphouse		From river	Town tap	Town tap	Custom House tap	
Sept. 14/54	May 22/57	May 22/57	Sept. 15/54	Aug. 17/54	Mar. 23/55	1
24:155	5:16	5:16	23:245	13:171	8:78	2
11.3	8.9	12.2	13.3	11.1	.....	3
23.2 (18.5)	24.2	24.2	22.8 (16)	22.9 (17)	25.1	4
13	8.8	7.6	6.7	.....	3.0	5
2.0	2.3	1.8	1.9	1.1	3.7	6
7.8 (6.4)	7.7	7.2	7.6 (6.4)	8.2 (7.7)	7.4	7
75 (80)	20	35	15	0	20	8
6	6	5	5	0 (0)	2	9
6.8	.....	.....	15.9	.....	.....	10
2.4	.....	.....	11.7	.....	.....	11
115	.....	.....	98.0	131	68.4	12
40.8	.....	.....	20.4	30.8	8.4	13
140	130	46.6	91.1	192	108	14
24.1	22.9	6.9	13.8	22.8	16.7	15
1.8	0.9	0.4	1.6	4.0	1.8	16
.....	.....	.....	.....	.....	.....	17
0.04	0.03	0.03	0.07	0.2	0.22	18
0.0	0.0	0.0	Trace	0.0	0.0	19
0.03	0.0	0.0	0.0	0.34	0.06	20
0.0	Trace	Trace	0.0	0.0	0.01	21
.....	0.0	0.0	.....	.....	.....	22
2.0	2.2	1.4	2.5	9.9	1.5	23
0.5	0.7	0.5	0.4	1.6	0.6	24
.....	0.0	0.05	.....	.....	.....	25
0	0	0	0 (0)	0 (0)	0	26
74.8	71.2	19.9	46.3 (49.2)	100 (101)	57.9	27
5.2	5.4	4.7	5.0	10.6	4.5	28
3.4	1.9	1.1	2.1	4.1	0.4	29
0.04	.....	.....	0.0	0.15	0.05	30
Trace	0.4	0.2	7.2	0.3	1.2	31
4.2	4.8	3.8	12	17	5.9	32
61.4	58.4	16.3	38.0 (40.3)	73.3 (74.3)	47.5	33
6.1	2.4	2.6	3.0 (0)	0 (0)	1.6	34
67.5 (68.0)	60.8	18.9	41.0 (40.3)	73.3 (74.3)	49.1	35
78.2	74.2	28.9	61.6	120	61.4	36
6.0	7.2	13.4	11.5	21.7	6.1	37
−0.4	−0.6	−2.1	−2.0	0	−1.1	38
8.6	8.9	11.4	10.7	8.2	9.6	39
After heavy rains	High water.	High water.				

* An auxiliary supply.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	DALHOUSIE			
	Source(s)	Charlo River, spring-fed brook and surface run-off			
		Charlo River			Brook and surface run-off
		Raw and finished water			
	Sampling point	At pump intake			At NcNeish dam intake
1	Date of sampling	Sept. 14/54	Jan. 24/56†	July 10/56†	Sept. 14/54
2	Storage period (days)	24:239	:3	:13	24:239
3	Sampling temperature, °C.	11.3	.....	.....	10.6
4	Test temperature, °C.	22.8 (14)	.....	.....	23.2 (16)
5	Oxygen consumed by $KMnO_4$	16	.....	.....	7.5
6	Carbon dioxide (CO_2), (calculated)	2.3	2.6	.....	1.4
7	pH	7.5 (7.4)	7.8	8.2	7.5 (7.2)
8	Colour	70 (120)	0	10	40 (40)
9	Turbidity	6	2	2	5
10	Suspended matter, dried at 105°C.	13.3	Trace	Trace	6.7
11	Suspended matter, ignited at 550°C.	11.8	.....	.....	2.8
12	Residue on evaporation, dried at 105°C.	88.8	75	110	71.6
13	Ignition loss at 550°C.	34.0	.....	.....	24.8
14	Specific conductance, micrombos at 25°C.	81.0	.....	.....	69.3
15	Calcium (Ca)	14.2	27.0	19.2	7.5
16	Magnesium (Mg)	1.2	2.4	1.5	1.8
17	Iron (Fe) Total	.....	Trace	0.0	.....
18	Dissolved	Trace	.....	.....	0.02
19	Manganese (Mn)	0.0	.....	.....	Trace
20	Aluminum (Al)	0.0	0.05	0.0	0.12
21	Copper (Cu)	0.0	.....	.....	0.14
22	Zinc (Zn)	.....	.....	.....	.....
23	Sodium (Na)	1.6	.....	.....	3.2
24	Potassium (K)	0.4	.....	.....	0.4
25	Ammonia (NH_3)	.....	0.0	0.2	.....
26	Carbonate (CO_3)	0	0	0	0 (0)
27	Bicarbonate (HCO_3)	45.4	63.4	65.9	26.0 (27.7)
28	Sulphate (SO_4)	3.5	6.8	4.1	7.4
29	Chloride (Cl)	1.0	7.3	3.6	2.2
30	Fluoride (F)	0.0	.....	.....	0.0
31	Nitrate (NO_3)	1.2	.....	.....	0.4
32	Silica (SiO_2), colorimetric	7.3	5.0	3.9	14
33	Carbonate hardness as $CaCO_3$	37.2	52	54	21.3 (22.8)
34	Non-carbonate hardness as $CaCO_3$	3.2	18	0	4.8 (4.4)
35	Total hardness as $CaCO_3$	40.4 (40.3)	70	54	26.1 (27.2)
36	Sum of constituents	52.8	.....	.....	49.8
37	Per cent sodium	7.9	.....	.....	20.2
38	Saturation index at test temperature	−1.2	−0.5	−0.2	−1.7
39	Stability index at test temperature	9.9	8.8	8.6	10.9
	Remarks: † Analyses supplied by Alchem Limited, Burlington, Ont.	After heavy rains.			After heavy rains

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

DIEPPE	EDMUNDSTON				No.
	Wells				
Supplied by Moncton, N.B.	Old well No. 1*			New well No. 1	
	Raw and finished water				
	At pumps			At well	
	Dec. 12/55	Dec. 28/55	Jan. 4/56	Oct. 23/58	1
	7:17	8:14	6:14	7:13	2
	6.7	.....	.....	.....	3
	23.2	25.5	25.8	23.0	4
	43	41	5.6	.....	5
	1.8	1.2	2.7	11	6
	8.1	8.3	7.6	6.5	7
	60	55	25	5	8
	.....	0	.....	.....	9
	5.8	.....	.....	.....	10
	1.4	.....	.....	.....	11
	288	262	82.8	.....	12
	129	96.4	6.8	.....	13
	286	302	123	74.3	14
	45.1	46.9	20.5	8.7	15
	8.2	9.5	2.0	1.8	16
See	.....	.....	.....	0.18	17
Moncton, N.B.	0.11	0.42	0.12	0.01	18
	7.4*	8.7*	Trace*	0.0	19
	0.51	0.45	0.0	0.03	20
	Slight trace	0.0	0.0	0.0	21
	0.0	0.0	0.0	0.05	22
	2.5	2.9	1.7	2.9	23
	0.6	0.5	0.7	0.5	24
	0.3	.....	.....	0.1	25
	0	0	0	0	26
	139	153	65.8	28.5	27
	33.8	16.2	6.7	5.7	28
	10.3	10.3	1.5	1.7	29
	.....	0.0	0.0	0.0	30
	2.4	4.0	2.4	0.8	31
	11	9.9	4.2	7.4	32
	114*	125*	54.0	23.4	33
	32.3	30.7	5.4	5.7	34
	146	156	59.4	29.1	35
	189	186	72.3	43.6	36
	3.3	3.5	5.8	17.4	37
	+0.4	+0.6	−0.7	−2.6	38
	7.3	7.1	9.0	11.7	39
	* Note varying quality of water, particularly the manganese content.			Phosphate as PO_4 =0.0 ppm.	

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	EDMUNDSTON (Continued)			
	Source(s)	Well			
		New well No. 1	Old well No. 2*		New well No. 2
		Raw and finished water			
	Sampling point	At pump	At pumps		
1	Date of sampling	Oct. 19/59	Dec. 28/55	Nov. 13/56	Oct. 19/59
2	Storage period (days)	21:30	8:14	13:29	21:30
3	Sampling temperature, °C.	7.8	.....	.....	7.8
4	Test temperature, °C.	25.9	25.4	28.3	26.0
5	Oxygen consumed by $KMnO_4$	.....	12	.....	.....
6	Carbon dioxide (CO_2), (calculated)	7.5	1.1	5.3	4
7	pH	6.8	8.3	7.5	7.2
8	Colour	0	20	20	0
9	Turbidity	0	0	.....	0
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	56.8	170	.....	52.4
13	Ignition loss at 550°C.	23.6	31.6	.....	15.6
14	Specific conductance, micromhos at 25°C.	74.0	252	194	84.7
15	Calcium (Ca)	9.3	41.5	31.5	11.0
16	Magnesium (Mg)	1.7	5.4	3.7	2.2
17	Iron (Fe) Total	0.05	.....	0.13	0.10
18	Dissolved	0.05	0.0	Trace	0.04
19	Manganese (Mn)	0.02	1.1	0.0	0.01
20	Aluminum (Al)	0.02	0.17	0.24	0.01
21	Copper (Cu)	0.0	0.0	Slight trace	0.0
22	Zinc (Zn)	0.0	0.0	0.0	0.0
23	Sodium (Na)	2.2	2.3	2.1	2.2
24	Potassium (K)	0.4	0.4	0.4	0.5
25	Ammonia (NH_3)	0.0	0.0	0.05	0.0
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	30.5	132	112	40.0
28	Sulphate (SO_4)	6.6	14.9	6.8	6.1
29	Chloride (Cl)	1.3	4.8	1.6	1.5
30	Fluoride (F)	0.0	0.1	0.0	0.0
31	Nitrate (NO_3)	2.0	0.6	1.2	0.6
32	Silica (SiO_2), (colorimetric)	7.3	8.7	9.4	6.6
33	Carbonate hardness as $CaCO_3$	25.0	108	91.9	32.8
34	Non-carbonate hardness as $CaCO_3$	5.2	17.8	1.9	3.7
35	Total hardness as $CaCO_3$	30.2	126	93.8	36.5
36	Sum of constituents	45.9	157	112	50.4
37	Per cent sodium	13.4	3.7	4.5	11.4
38	Saturation index at test temperature	−2.2	+0.6	−0.4	−1.6
39	Stability index at test temperature	11.2	7.1	8.3	10.4
	Remarks: † Analyses supplied by Alchem Limited, Burlington, Ont.	Phosphate as PO_4 = 0.0 ppm.	* Note varying quality of water, particularly the manganese content.		Phosphate as PO_4 = 0.0 ppm.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

EDMUNDSTON (Concluded)					FAIRVILLE (now Lancaster)	
Well*						
Old well No. 3	New well No. 3		Mixed wells (old)			No.
Raw and finished water						
At pumps			Town tap			
Dec. 28/55 8:14	Nov. 13/56 13:29	Oct. 19/59 25:30	Aug. 6/54 6:116	Jan. 10/56† :6		1 2
.....	.....	6.7	11.8	.....		3
25.3	28.0	24.7	22.6 (21)	.....		4
32	.....	.....	.....	.....		5
1.3	7.5	3.5	5.1	27		6
8.2	7.3	7.2	7.5 (7.0)	6.8		7
60	20	5	10	60		8
0	.....	0	2	2		9
.....	.....	.....	.....	Trace		10
.....	.....	.....	.....	.....		11
206	.....	48.8	172	170		12
64.8	.....	25.6	62.4	.....		13
260	180	73.7	174	.....		14
39.7	23.3	9.6	27.5	32		15
7.6	6.3	1.9	4.3	7.3		16
.....	1.8	0.06	.....	0.2	*See*	17
0.99	0.03	0.06	0.02	.....	Lancaster	18
4.5	0.91	0.0	0.0	.....	and	19
0.29	0.15	0.06	0.09	0.13	Saint John, N.B.	20
Trace	Trace	0.0	.....	.....		21
0.2	0.2	0.0	.....	.....		22
2.5	2.1	2.1	2.1	.....		23
0.4	0.4	0.5	0.3	.....		24
.....	0.2	0.1	.....	0.5		25
0	0	0	0	0		26
134	99.5	34.1	100 (101)	97.6		27
18.3	7.6	6.5	7.3	26		28
6.8	1.7	1.7	1.3	12		29
0.0	0.0	0.0	0.1	.....		30
0.4	1.2	0.3	0.8	.....		31
11	11	5.9	12	10		32
110	81.6	28.0	82.0	80		33
20.3	2.4	3.8	4.2	30		34
130	84.0	31.8	86.2	110		35
159	104	45.4	105	.....		36
3.7	4.9	12.2	5.0	.....		37
+0.4	−0.8	−1.7	−0.6	−1.2		38
7.4	8.9	10.6	8.7	9.2		39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	FREDERICTON			
	Source(s)	Saint John River		Mixed wells or mainly Wilmot Park well	
		Raw water*	Finished water	Raw and finished water	
	Sampling point	At intake pump	At filter plant	At city tap, pump or well reservoir	
1	Date of sampling	Aug. 12/54	Aug. 12/54	Aug. 30/55	Feb. 13/56
2	Storage period (days)	13:50	13:139	3:20	14:21
3	Sampling temperature, °C.	17.2	17.5	.....	8.3
4	Test temperature, °C.	22.2	22.7 (23)	24.0	22.4
5	Oxygen consumed by $KMnO_4$	.....	.....	10	.....
6	Carbon dioxide (CO_2), (calculated)	1.6	0.3	2.2	2.1
7	pH	7.3 (6.9)	8.4 (7.4)	7.6	7.6
8	Colour	45 (70)	25 (35)	0	5
9	Turbidity	8	4 (10)	0	0
10	Suspended matter, dried at 105°C.	.....	10.8	.....	.....
11	Suspended matter, ignited at 550°C.	.....	3.9	.....	.....
12	Residue on evaporation, dried at 105°C.	.....	98.8	167	141
13	Ignition loss at 550°C.	.....	23.2	30.0	25.6
14	Specific conductance, micromhos at 25°C.	111	133	257	223
15	Calcium (Ca)	14.1	22.0	29.6	24.1
16	Magnesium (Mg)	2.1	1.5	3.7	3.5
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	.....	0.03	0.01	0.01
19	Manganese (Mn)	.....	0.0	0.01	Trace
20	Aluminum (Al)	.....	0.8	0.23	0.01
21	Copper (Cu)	.....	0.0	0.0	Trace
22	Zinc (Zn)	.....	.....	0.0	0.0
23	Sodium (Na)	1.5	1.6	9.3	11.2
24	Potassium (K)	0.9	0.3	3.2	2.9
25	Ammonia (NH_3)	.....	.....	0.0	0.0
26	Carbonate (CO_3)	0 (0)	1.2 (0)	0	0
27	Bicarbonate (HCO_3)	18.8(22.7)	41.8 (42.9)	56.1	51.2
28	Sulphate (SO_4)	24.8	25.3	31.0	29.6
29	Chloride (Cl)	3.9	4.3	13.0	14.5
30	Fluoride (F)	.....	0.0	0.0	0.0
31	Nitrate (NO_3)	0.6	0.6	24	12
32	Silica (SiO_2), colorimetric	3.9	4.1	9.5	10
33	Carbonate hardness as $CaCO_3$	15.4	35.3 (35.2)	46.0	42.0
34	Non-carbonate hardness as $CaCO_3$	28.6	25.8 (27.0)	43.1	32.5
35	Total hardness as $CaCO_3$	44.0 (43.5)	61.1 (62.2)	89.1	74.5
36	Sum of constituents	60.6	81.7	157	133
37	Per cent sodium	5.8	5.2	17.6	23.7
38	Saturation index at test temperature	−1.8	−0.1	−0.7	−0.9
39	Stability index at test temperature	10.9	8.9	9.0	9.4
	Remarks:	* After pre-chlorination. *See also* Table II, Station No. 8.			

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

FREDERICTON						No.
Mixed wells or mainly Wilmot Park well						
Raw and finished water						
At city tap, pump or well reservoir						
Mar. 15/56	Apr. 14/56	May 15/56	July 16/56	Sept. 10/56	June 7/57	1
33:41	20:26	3:10	8:16	9:14	7:12	2
7.8	8.3	8.3	8.9	8.3	10.0	3
23.0	23.7	22.4	23.8	18.9	25.6	4
.....	3.4	.....	7.5	8.9	.....	5
1.3	0.9	8.8	7.0	7.2	6.9	6
7.8	8.0	7.0	7.1	7.1	7.1	7
5	5	0	0	0	0	8
0	0	0	0	0	5	9
.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	11
.....	.....	.....	146	133	139	12
.....	.....	.....	25.6	21.6	18.4	13
215	212	210	217	204	199	14
23.0	22.0	21.6	23.0	21.1	20.2	15
3.7	2.9	3.0	3.4	2.9	3.0	16
.....	.....	.....	.....	.....	.....	17
.....	Trace	Trace	Trace	Trace	0.02	18
.....	.....	.....	Trace	0.01	0.02	19
.....	0.0	0.04	0.15	0.18	0.16	20
.....	0.0	0.0	0.0	Slight trace	.....	21
.....	0.0	0.0	0.2	0.0	.....	22
11.7	12.9	12.8	12.2	11.8	12.0	23
2.8	2.8	2.6	2.9	2.6	2.4	24
0.0	0.0	0.0	0.1	0.1	.....	25
0	0	0	0	0	0	26
51.4	52.3	52.4	53.4	53.0	58.6	27
28.8	26.1	27.4	27.7	25.6	22.8	28
14.6	14.5	13.0	13.3	12.8	11.2	29
.....	0.0	.....	0.0	0.0	0.0	30
8.0	10	8.0	12	6.0	4.8	31
9.7	9.9	9.7	11.1	10	9.6	32
42.2	42.9	43.0	43.8	43.5	48.1	33
30.4	23.9	23.2	27.6	21.1	14.6	34
72.6	66.8	66.2	71.4	64.6	62.7	35
128	127	124	132	119	115	36
25.0	28.5	28.6	25.9	27.1	28.1	37
−0.7	−0.5	−1.5	−1.3	−1.5	−1.3	38
9.2	9.0	10.0	9.7	10.1	9.7	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.					
	Municipality	FREDERICTON (Continued)			
	Source(s)	Mixed wells (Cont'd)		South side of Saint John River Wilmot Park well	
		Raw and finished water			
	Sampling point	At city tap or pump		At pumps	
1	Date of sampling	Sept. 16/57	Jan. 21/58	Aug. 30/55	Feb. 13/56
2	Storage period (days)	4:10	6:13	3:20	14:21
3	Sampling temperature, °C.	8.9	7.2	7.8	7.8
4	Test temperature, °C.	23.6	27.4	23.9	22.2
5	Oxygen consumed by $KMnO_4$	1.8	1.8	10	.....
6	Carbon dioxide (CO_2), (calculated)	1.4	2.6	10	0.9
7	pH	7.9	7.6	6.8	8.0
8	Colour	5	5	5	5
9	Turbidity	0.3	0.3	0	0
10	Suspended matter, dried at 105° C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550° C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105° C.	214	128	150	143
13	Ignition loss at 550° C.	31.6	14.8	28.0	29.2
14	Specific conductance, micromhos at 25° C.	213	205.5	235	222
15	Calcium (Ca)	22.5	19.7	26.1	24.4
16	Magnesium (Mg)	4.0	3.2	3.0	2.9
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.03	0.02	0.03	0.02
19	Manganese (Mn)	0.02	0.02	Trace	Trace
20	Aluminum (Al)	0.05	0.05	0.27	0.02
21	Copper (Cu)	.....	0.0	0.04	Trace
22	Zinc (Zn)	.....	0.0	0.0	0.0
23	Sodium (Na)	12.3	10.9	9.6	11.2
24	Potassium (K)	2.2	2.4	3.1	2.9
25	Ammonia (NH_3)	0.0	0.0	0.0	0.0
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	69.7	61.8	40.5	51.2
28	Sulphate (SO_4)	24.8	20.4	33.5	29.5
29	Chloride (Cl)	12.2	10.3	12.9	14.2
30	Fluoride (F)	0.0	0.0	0.0	0.0
31	Nitrate (NO_3)	3.6	2.6	24	12
32	Silica (SiO_2), colorimetric	9.2	8.9	9.5	11
33	Carbonate hardness as $CaCO_3$	57.2	50.7	33.2	42.0
34	Non-carbonate hardness as $CaCO_3$	15.4	11.6	44.3	30.8
35	Total hardness as $CaCO_3$	72.6	62.3	77.5	72.8
36	Sum of constituents	125	109	142	133
37	Per cent sodium	26.0	26.5	20.1	24.1
38	Saturation index at test temperature	−0.5	−0.8	−1.7	−0.5
39	Stability index at test temperature	8.9	9.2	10.2	9.0
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

FREDERICTON (Continued)						
South side of Saint John River				North side of Saint John River		No.
Wilmot Park well				Range well		
Raw and finished water						
At pumps				At town tap	At pump	
Mar. 15/56	Apr. 14/56	May 15/56*	July 16/56	Aug. 12/54	Aug. 30/55	1
19:22	20:26	3:10	8:16	13:152	3:20	2
7.8	7.8	8.3	8.9	14.2	8.3	3
25.3	23.9	22.5	23.8	22.7 (23)	23.9	4
.....	3.5	.....	7.8	.....	9.9	5
4.1	1.1	8.8	8.8	.....(1.9)*	2.6	6
7.3	7.9	7.0	7.0	8.2 (7.5)	7.8	7
5	5	0	0	0 (5)	0	8
0	0	0	0	0.6	0	9
.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	11
.....	.....	.....	144	109	124	12
.....	.....	.....	28.4	7.8	14.8	13
217	212	215	216	166	195	14
23.3	21.9	21.7	23.3	24.6	27.4	15
3.0	2.8	3.0	3.3	1.8	1.5	16
.....	.....	.....	.....	.....	.....	17
.....	Trace	0.02	Trace	Trace	0.04	18
.....	.....	.....	Trace	0.0	Trace	19
.....	0.04	0.03	0.05	0.1	0.0	20
.....	Trace	0.0	0.04	0.0	0.0	21
.....	0.0	0.0	0.05	.....	Slight trace	22
11.7	12.9	12.4	12.0	8.9	9.9	23
2.8	2.8	2.7	2.8	0.4	0.5	24
0.0	0.0	0.0	0.1	.....	0.0	25
0	0	0	0	0 (0)	0	26
51.4	53.3	53.1	53.6	98.6 (93.3)	101	27
28.8	25.4	26.9	27.9	7.3	11.7	28
14.3	14.2	13.2	13.0	0.7	1.8	29
.....	0.0	.....	0.0	0.1	0.0	30
8.0	10	8.0	12	0.4	0.4	31
9.7	9.8	9.8	10	12	12	32
42.2	43.7	43.6	44.0	68.8 (68.5)	74.5	33
28.3	22.5	22.9	27.7	0 (0)	0.0	34
70.5	66.2	66.5	71.7	68.8 (68.5)	74.5	35
127	126	124	131	105	115	36
25.6	28.6	27.8	25.6	21.7	22.3	37
−1.1	−0.6	−1.5	−1.4	+0.7	−0.3	38
9.5	9.1	10.0	9.8	8.1	8.4	39

*Sampled after aeration.

*Field test at 17°C.

88095-5—0½

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	FREDERICTON (Continued)			
	Source(s)	South side of Saint John River			
		Killarney well	Bridge St. well* (Rock well)	Saunders St. well – well No. 2** (Gravel wall well)	
	Sampling point	Raw and finished water			
		At pumps			
1	Date of sampling	Aug. 30/55	Nov. 5/58	July 1958	Sept. 22/58
2	Storage period (days)	3:20	16:21	.....	35:36
3	Sampling temperature, °C.	7.2	8.9	.....	9.5
4	Test temperature, °C.	24.0	25.0	26.6	24.3
5	Oxygen consumed by $KMnO_4$	9.6	.....	2.4	.....
6	Carbon dioxide (CO_2), (calculated)	3.3	1.8	6.8	.....24 .....
7	pH	7.7	8.0	7.1	6.5
8	Colour	5	0	5	.....
9	Turbidity	0	0.9	.....	.....
10	Suspended matter, dried at 105°C.	.....	.....	.....	.....
11	Suspended matter, ignited at 550°C.	.....	.....	.....	.....
12	Residue on evaporation, dried at 105°C.	140	.....	89.2	.....
13	Ignition loss at 550°C.	18.8	.....	13.6	.....
14	Specific conductance, micromhos at 25°C.	213	428	143.2	151.1
15	Calcium (Ca)	34.5	48.4	14.6	.....
16	Magnesium (Mg)	1.9	3.0	2.5	.....
17	Iron (Fe) Total	.....	.....	0.03	0.10
18	Dissolved	0.05	0.01	0.01	Trace
19	Manganese (Mn)	0.20	0.0	1.49	2.50
20	Aluminum (Al)	0.24	0.06	0.07	.....
21	Copper (Cu)	0.0	0.0	Trace	.....
22	Zinc (Zn)	0.0	0.0	0.05	.....
23	Sodium (Na)	4.3	36.3	7.7	.....
24	Potassium (K)	0.5	0.6	0.6	.....
25	Ammonia (NH_3)	0.0	0.05	0.0	.....
26	Carbonate (CO_3)	0	0	0	0
27	Bicarbonate (HCO_3)	104	111	52.7	49.5
28	Sulphate (SO_4)	16.8	101	16.3	.....
29	Chloride (Cl)	2.7	12.4	6.1	.....
30	Fluoride (F)	0.0	0.2	0.0	.....
31	Nitrate (NO_3)	0.4	0.2	0.3	.....
32	Silica (SiO_2), colorimetric	13	11	11	.....
33	Carbonate hardness as $CaCO_3$	85.1	91.4	43.2	40.6
34	Non-carbonate hardness as $CaCO_3$	8.8	41.7	3.5	12.0
35	Total hardness as $CaCO_3$	93.9	133.1	46.7	52.6
36	Sum of constituents	125	246.6	86.9	.....
37	Per cent sodium	8.8	37.0	24.8	.....
38	Saturation index at test temperature	−0.3	+0.2	−1.5	.....
39	Stability index at test temperature	8.3	7.6	10.1	.....
	Remarks:		* Drilled 1956 to replace Range and Killarney wells,	** To augment Wilmot Park well (well No. 1).	

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

FREDERICTON (Concluded)		GRAND FALLS			HARTLAND	No.
South side of Saint John River		Brook	Wells (new)		Springs	
Saunders St. well (cont'd)	Test hole well 2-59					
Raw and finished water		Raw and finished water			Raw and finished water	
At pumps		Town tap	At pumps		Town tap	
Oct. 15/58	about Mar. 10/59	Aug. 6/54	Sept. 21/57	Dec. 4/57	Aug. 9/54	1
15:16	about 13	6:130	4:12	5:12	9:133	2
9.5	.....	15.6	.....	.....	10.0	3
24.2	24.4	22.6 (19.5)	21.7	24.8	22.9 (19.5)	4
.....	1.3	.....	1.9	1.8	.....	5
23	2	2.8	1.9	2.5	1.0	6
6.5	8.0	8.0 (7.7)	8.2	8.1	8.3 (8.0)	7
.....	0	30 (25)	5	5	0	8
.....	0	2	Clear	Clear	0.7	9
.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	11
.....	189	240	.....	245	133	12
.....	9.2	39.6	.....	36.4	15.2	13
147.8	294	367	263	415	230	14
.....	34.3	67.4	46.1	54.6	38.9	15
.....	5.1	4.4	4.9	17.1	3.0	16
0.12	0.05	.....	.....	.....	.....	17
0.0	0.03	0.01	Trace	Trace	0.01	18
2.2	0.08	0.0	Trace	0.01	0.0	19
.....	0.05	0.0	0.02	0.07	0.01	20
.....	0.0	0.0	0.0	0.0	0.0	21
.....	0.0	.....	0.0	0.0	.....	22
.....	21.6	2.7	1.8	6.2	2.5	23
.....	1.1	0.5	0.6	3.0	0.5	24
.....	0.0	.....	0.0	0.0	.....	25
0	0	0 (0)	0	0	0 (0)	26
47.4	129	175 (177)	150	213	118 (121)	27
.....	36.0	27.6	10.4	25.8	10.3	28
.....	5.5	10.4	3.5	10.7	2.9	29
.....	0.0	0.1	0.0	0.0	0.05	30
.....	Trace	6.0	1.2	5.0	8.0	31
.....	0.2	5.7	6.8	8.0	7.2	32
38.9	106	144 (145)	123	175	96.8 (99.4)	33
12.3	0.8	42.5 (45.3)	12.3	31.6	12.6 (10.9)	34
51.2	107	186 (190)	135	207	109 (110)	35
.....	175	211	149	235	131	36
.....	30.2	3.1	2.8	6.0	4.7	37
.....	+0.1	+0.5	+0.5	+0.6	+0.4	38
.....	7.8	7.0	7.2	6.9	7.5	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	LANCASTER*	MARYSVILLE	MILLTOWN	MONCTON
	Source(s)	Spruce Lake and well	Wells	Purchased from St. Stephen, N.B.	Surface run-off Irishtown Reservoir
		Raw and finished water	Raw and finished water		Raw and finished water
	Sampling point	Town tap	Town tap		At pumps
1	Date of sampling		Aug. 13/54		Mar. 20/53†
2	Storage period (days)		12:150		–:10
3	Sampling temperature, °C.		10.6		.....
4	Test temperature, °C.		22.7 (20.5)		.....
5	Oxygen consumed by $KMnO_4$		.....		.....
6	Carbon dioxide (CO_2), (calculated)		1.2		0.8
7	pH		8.1 (7.2)		7.6
8	Colour		0 (0)		Slight
9	Turbidity		0		9
10	Suspended matter, dried at 105° C.		.....		Some
11	Suspended matter, ignited at 550° C.		.....		.....
12	Residue on evaporation, dried at 105° C.		116		49.0
13	Ignition loss at 550° C.		7.2		.....
14	Specific conductance, micromhos at 25° C.		175		.....
15	Calcium (Ca)		24.4		7.2
16	Magnesium (Mg)		2.6		2.0
17	Iron (Fe) Total	*See*	.....	*See*	0.9
18	Dissolved	Saint John, N.B.	Trace	St. Stephen, N.B.	.....
19	Manganese (Mn)		0.01		.....
20	Aluminum (Al)		0.02		0.0
21	Copper (Cu)		0.0		.....
22	Zinc (Zn)		.....		.....
23	Sodium (Na)		9.2		.....
24	Potassium (K)		0.4		.....
25	Ammonia (NH_3)		.....		0.1
26	Carbonate (CO_3)		0 (0)		0
27	Bicarbonate (HCO_3)		91.8 (93.3)		18.3
28	Sulphate (SO_4)		15.3		17.0
29	Chloride (Cl)		0.8		2.0
30	Fluoride (F)		0.1		.....
31	Nitrate (NO_3)		0.4		.....
32	Silica (SiO_2), colorimetric		13		3.5
33	Carbonate hardness as $CaCO_3$		71.6 (70.4)		15.0
34	Non-carbonate hardness as $CaCO_3$		0 (0)		9.0
35	Total hardness as $CaCO_3$		71.6 (70.4)		24.0
36	Sum of constituents		111		.....
37	Per cent sodium		21.7		.....
38	Saturation index at test temperature		–0.1		–1.7
39	Stability index at test temperature		8.3		11.0

Remarks: † Analyses supplied by Alchem Ltd., Burlington.

Previously called Fairville.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

MONCTON (Concl'd)				NEWCASTLE	PERTH	No.
Surface run-off				Wells	Spring-fed Had's Brook	
Irishtown Reservoir	McLaughlin Reservoir					
Raw and finished water				Raw and finished water	Raw and finished water	
	At pumps	At city tap		Town tap	Town tap	
Aug. 17/54	Aug. 17/54	July 9/48†	Dec. 5/56	Aug. 17/54*	Aug. 7/54	1
16:176	16:176	.....	48:168	20:206	10:129	2
17.8	14.1	.....	5.6	16.7	19.4	3
22.3 (18)	22.3 (16)	.....	26.3	22.9 (18.5)	23.5 (23)	4
.....	.....	.....	.....	.....	.....	5
3.4	3.3	14	4.5	0.8	1.5	6
6.8 (7.1)	6.9 (6.7)	6.5	6.9	8.4 (6.8)	7.5 (8.0)	7
70 (100)	60 (80)	.....	40	0 (0)	10	8
3	3	.....	12	0 (0)	0	9
.....	.....	137	7.6	.....	.....	10
.....	.....	.....	4.6	.....	.....	11
48.4	53.2	59.0	60.4	176	44.4	12
28.0	26.4	.....	22.0	.....	15.2	13
31.9	45.4	.....	69.3	277	55.1	14
2.9	4.7	4.4	7.5	26.8	5.5	15
0.6	0.9	1.9	1.4	2.9	2.3	16
.....	.....	.....	.....	.....	.....	17
0.36	0.23	.....	0.19	0.04	0.01	18
0.0	0.0	.....	0.0	Trace	Trace	19
0.0	0.03	.....	0.43	0.13	0.02	20
0.04	0.0	.....	Trace	0.03	0.0	21
.....	.....	.....	0.0	.....	.....	22
1.7	2.0	.....	3.1	27.0	1.4	23
0.4	0.8	.....	0.8	1.1	0.4	24
.....	.....	.....	0.1	.....	.....	25
0 (0)	0	0	0	2.4 (0)	0 (0)	26
13.2 (13.9)	16.5	24.4	23.3	126 (131)	29.0 (30.3)	27
1.5	4.3	6.8	7.4	20.0	3.1	28
1.4	2.0	5.2	3.6	11.0	0.2	29
0.0	0.0	.....	0.0	0.2	0.1	30
0.6	1.2	.....	0.8	Trace	0.2	31
0.9	2.1	1.6	2.4	11	7.6	32
9.7	13.5	19.0	19.1	78.8	23.1 (24.4)	33
0	1.9	0.0	5.4	0.0	0.0 (0)	34
9.7	15.4 (17.0)	19.0	24.5	78.8	23.1 (24.4)	35
16.9	26.4	.....	39.2	165	35.1	36
25.3	20.4	.....	19.1	42.0	11.4	37
−3.1	−2.7	−2.9	−2.2	+0.4	−1.7	38
13.0	12.3	12.3	11.3	7.6	10.9	39

* 80% of one soft well water.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	PLASTER ROCK	ROTHESAY	SACKVILLE	ST. ANDREWS
	Source(s)	Tobique River	Brook	Artesian wells	Chamcook Lake
		Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water
	Sampling point	Town tap	Town tap	Town tap	Town tap
1	Date of sampling	Aug. 7/54	Aug. 14/54	Aug. 18/54	Aug. 11/54
2	Storage period (days)	11:135	13:168	18:159	9:145
3	Sampling temperature, °C.	18.9	15.0	15.6	14.4
4	Test temperature, °C.	22.9	21.7 (23)	23.2 (23)	23.4 (21)
5	Oxygen consumed by $KMnO_4$				
6	Carbon dioxide (CO_2), (calculated)	1.3	3.2	0.4	1.9
7	pH	7.8 (8.2)	7.2 (7.0)	8.3 (7.3)	6.9
8	Colour	40 (55)	90 (110)	20	15
9	Turbidity	2	1	0.7	2
10	Suspended matter, dried at 105°C.				
11	Suspended matter, ignited at 550°C.				
12	Residue on evaporation, dried at 105°C.	64.4	57.2	87.6	32.0
13	Ignition loss at 550°C.	29.2	25.2	14.8	14.0
14	Specific conductance, micromhos at 25°C.	81.8	75.3	128	42.3
15	Calcium (Ca)	12.5	8.7	12.9	4.7
16	Magnesium (Mg)	1.4	1.1	2.0	0.1
17	Iron (Fe) Total				
18	Dissolved	0.08	0.1	0.5	0.16
19	Manganese (Mn)	0.0	0.0	0.0	Slight trace
20	Aluminum (Al)	0.05	0.3	0.0	0.2
21	Copper (Cu)	0.1	0.1	Trace	0.92
22	Zinc (Zn)				
23	Sodium (Na)	1.5	2.4	5.1	2.3
24	Potassium (K)	0.3	0.4	0.7	0.3
25	Ammonia (NH_3)				
26	Carbonate (CO_3)	0 (0)	0 (0)	0 (0)	0
27	Bicarbonate (HCO_3)	46.9 (47.9)	30.2 (30.2)	38.8 (40.4)	10.6
28	Sulphate (SO_4)	3.6	2.2	17.7	3.9
29	Chloride (Cl)	0.6	3.4	3.3	4.0
30	Fluoride (F)	0.10	0.5	0.1	0.05
31	Nitrate (NO_3)	0.6	0.6	0.2	0.8
32	Silica (SiO_2), colorimetric	5.1	5.9	19	1.1
33	Carbonate hardness as $CaCO_3$	36.9	24.8 (24.8)	31.8 (33.1)	8.7
34	Non-carbonate hardness as $CaCO_3$	0.0	1.4 (2.8)	8.6 (9.8)	3.4
35	Total hardness as $CaCO_3$	36.9 (37.2)	26.2 (27.6)	40.4 (42.9)	12.1
36	Sum of constituents	49.0	40.6	80.2	23.7
37	Per cent sodium	7.9	15.4	20.8	24.6
38	Saturation index at test temperature	−0.9	−2.1	−0.5	−2.8
39	Stability index at test temperature	9.6	11.4	9.3	12.5
	Remarks:	*See also* Table II, Station 27.			

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

ST. GEORGE	SAINT JOHN					No.
Artesian wells	Spruce Lake*		Loch Lomond**			
Raw and finished water	Raw and finished water					
Town tap	Town tap		Town tap			
Aug. 11/54	Nov. 16/50†	Aug. 13/54	Oct. 15/48††	Aug. 13/54	Mar. 14/57	1
9:145	.....	12:169	.....	12:169	26:99	2
14.4	.....	18.9	.....	21.1	5.0	3
23.4	.....	22.2 (21.5)	.....	22.7 (23)	24.1	4
.....	3.9	.....	.....	.....	5.8	5
3.7	3	0.4	1.3	0.5	2.5	6
7.3	6.5	7.3 (6.9)	7.1	7.7 (7.3)	6.8	7
0	10	15	.....	20	15	8
0.7	5	1	.....	1	2	9
.....	.....	.....	Some	.....	.....	10
.....	.....	.....	.....	.....	.....	11
83.6	.....	28.8	36	30.4	46.8	12
13.6	.....	16.8	.....	18.0	24.0	13
117	.....	31.9	.....	42.9	44.3	14
13.9	2.4	1.5	6.8	4.2	4.0	15
3.0	0.2	0.7	1.2	0.7	1.0	16
.....	0.2	.....	.....	.....	.....	17
Trace	.....	Trace	.....	0.2	0.0	18
0.0	.....	0.01	.....	0.01	0.0	19
.....	.....	0.08	.....	0.2	0.31	20
0.03	.....	0.1	.....	0.2	0.0	21
.....	.....	.....	.....	.....	0.1	22
4.7	(3.7 as Na	2.3	.....	1.9	2.3	23
0.6	(	0.2	.....	0.3	0.3	24
.....	.....	.....	.....	.....	0.0	25
0 (0)	0	0	0	0	0	26
44.0 (47.9)	6.1	3.8	15.9	12.9	10.1	27
8.5	1.9	1.6	11	2.9	5.8	28
5.4	6.4	5.4	4.4	4.0	4.3	29
0.1	.....	0.0	.....	0.0	0.0	30
6.0	.....	0.2	.....	0.4	0.5	31
14	1.3	2.0	0.9	1.8	2.4	32
36.1	5.0	3.1	13	10.6	8.3	33
10.9	2.6	3.5	9	2.8	5.8	34
47.0	7.6	6.6	22	13.4 (14.0)	14.1	35
77.9	19.1	16.0	.....	23.2	26.1	36
19.3	55.5	40.0	.....	21.4	23.4	37
−1.6	−3.8	−3.4	−2.3	−1.9	−3.0	38
10.5	14.1	14.1	11.7	11.5	12.8	39

* Supplies Saint John West and Lancaster.
** Supplies Saint John and Saint John East, that is everything east of Saint John River.
† Analysis supplied by The Permutit Co. of Canada, Ltd.
†† Analysis supplied by Alchem Limited.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.	Municipality	ST. LEONARD	ST. QUENTIN	ST. STEPHEN	SHEDIAC
	Source(s)	Big Brook	Range 14 Lake	Well	Wells No. 1 well
		Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water
	Sampling point	Town tap	Town tap	Town tap	At pumps
1	Date of sampling	Aug. 6/54	Jan. 22/55 13:18	Aug. 10/54 10:154	Sept. 13/54 25:307
2	Storage period (days)	6:130			
3	Sampling temperature, °C.	16.7	.....	13.3	8.9
4	Test temperature, °C.	22.6	19.1	23.4 (17)	23.2 (15)
5	Oxygen consumed by $KMnO_4$	.....	2.3	.....	2.8
6	Carbon dioxide (CO_2), (calculated)	2.5	0.7	12	2.8
7	pH	7.6 (7.7)	8.1	6.9 (6.4)	8.0 (7.1)
8	Colour	75 (70)	15	20	7
9	Turbidity	4.9	0	1	4
10	Suspended matter, dried at 105°C.	4.7	.....	.....	3.8
11	Suspended matter, ignited at 550°C.	0.5	.....	.....	3.1
12	Residue on evaporation, dried at 105°C.	90.8	163	41.6	368
13	Ignition loss at 550°C.	30.4	12.0	12.0	35.2
14	Specific conductance, micromhos at 25°C.	109	264	47.7	573
15	Calcium (Ca)	17.9	51.5	5.7	62.2
16	Magnesium (Mg)	1.2	1.9	0.3	14.4
17	Iron (Fe) Total	.....	.....	.....	.....
18	Dissolved	0.05	Trace	0.02	0.5
19	Manganese (Mn)	0.0	0.0	0.01	.....
20	Aluminum (Al)	0.0	0.16	0.10	0.2
21	Copper (Cu)	0.0	0.0	0.10	Trace
22	Zinc (Zn)	.....	.....	.....	.....
23	Sodium (Na)	2.6	1.0	2.8	34.2
24	Potassium (K)	0.4	0.4	0.4	1.8
25	Ammonia (NH_3)	.....	.....	.....	.....
26	Carbonate (CO_3)	0	0	0 (0)	0 (0)
27	Bicarbonate (HCO_3)	59.5	162	19.6 (22.7)	181 (182)
28	Sulphate (SO_4)	3.8	4.9	3.8	64.6
29	Chloride (Cl)	2.2	1.3	1.6	13.0
30	Fluoride (F)	0.2	0.05	0.0	0.2
31	Nitrate (NO_3)	1.2	1.4	0.6	24
32	Silica (SiO_2), colorimetric	5.2	3.9	8.9	7.0
33	Carbonate hardness as $CaCO_3$	48.8	133	15.5 (17.0)	149 (149)
34	Non-carbonate hardness as $CaCO_3$	0.8	3.4	0.0 (0)	65.9 (65.3)
35	Total hardness as $CaCO_3$	49.6	136	15.5 (17.0)	215 (214)
36	Sum of constituents	64.0	146	34.0	341
37	Per cent sodium	10.1	1.6	26.6	25.4
38	Saturation index at test temperature	−0.9	+0.4	−2.5	+0.5
39	Stability index at test temperature	9.4	7.3	11.9	7.0
	Remarks:				Well most used.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

SHEDIAC (Cont'd)	SUNNY BRAE	SUSSEX	TIDEHEAD *			No.
Wells		Ward's Creek	Wells			
No. 2 well	Purchased from Moncton, N. B.		No. 1 well Murray Sturgeon's well	No. 2 well Harry Flann's well	No. 3 well Walter Nichol's well	
Raw and finished water		Finished water*	Raw and finished water			
At pumps		At filter plant tap	At pumps			
Sept. 13/54		Aug. 14/54	July 8/57	July 6/57	July 8/57	1
25:155		13:163	.....	.....	.....	2
8.9		18.3	.....	.....	.....	3
23.2 (16)		21.7 (23)	25.2	25.2	25.2	4
2.5		.....	.....	.....	.....	5
1.7		1.4	2.0	.....	4.0	6
8.1 (7.3)		7.9 (7.9)	8.0	.....	7.9	7
3		0 (0)	.....	.....	.....	8
0		0	.....	.....	.....	9
.....		.....	.....	.....	.....	10
.....		.....	.....	.....	.....	11
176		95.2	.....	.....	.....	12
13.6		19.6	.....	.....	.....	13
300		151	243	382	587	14
27.0		16.7	.....	.....	.....	15
5.3		2.3	.....	.....	.....	16
.....	*See*	.....	.....	.....	.....	17
0.03	Moncton, N.B.	Trace	.....	.....	.....	18
Trace		0.0	.....	.....	.....	19
0.24		0.02	.....	.....	.....	20
0.0		0.0	.....	.....	.....	21
.....		.....	.....	.....	.....	22
24.8		6.6	.....	.....	.....	23
0.8		0.7	.....	.....	.....	24
.....		.....	.....	.....	.....	25
0 (0)		0 (0)	0	0	0	26
135 (139)		66.3 (68.2)	136	193	227	27
11.2		5.9	.....	.....	.....	28
18.1		3.7	2.3	7.7	57.9	29
0.3		0.0	.....	.....	.....	30
0.0		0.6	3.5	15	9.4	31
11		9.1	.....	.....	.....	32
89.2 (91.2)		51.1 (53.1)	112	158	186	33
0.0 (0)		0.0 (0)	9.2	26.6	54.2	34
89.2 (91.2)		51.1 (53.1)	121	184	240	35
165		78.3	.....	.....	.....	36
37.0		21.6	.....	.....	.....	37
+0.1		−0.6	.....	.....	.....	38
7.9		9.1	.....	.....	.....	39

* For raw water *see* Station No. 38, Table II.

* System not in operation: above wells being considered for use.

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

No.				
	Municipality	TIDEHEAD* (Cont'd)		
	Source(s)	Wells		
		No. 4 well Alfred Garage well	No. 5 well School well	
		Raw and finished water		
	Sampling point	At pump		
1	Date of sampling	July 8/57	June 6/57	July 8/57
2	Storage period (days)		6	
3	Sampling temperature, °C.			
4	Test temperature, °C.	25.2	21.0	25.0
5	Oxygen consumed by $KMnO_4$			
6	Carbon dioxide (CO_2), (calculated)	4.0	3.6	
7	pH	8.0	8.0	8.3
8	Colour		0	
9	Turbidity			
10	Suspended matter, dried at 105°C.			
11	Suspended matter, ignited at 550°C.			
12	Residue on evaporation, dried at 105°C.			
13	Ignition loss at 550°C.			
14	Specific conductance, micromhos at 25°C.	430	436	478
15	Calcium (Ca)		75.6	
16	Magnesium (Mg)		5.2	
17	Iron (Fe) Total			
18	Dissolved			
19	Manganese (Mn)			
20	Aluminum (Al)			
21	Copper (Cu)			
22	Zinc (Zn)			
23	Sodium (Na)		6.1	
24	Potassium (K)		2.2	
25	Ammonia (NH_3)		0.0	
26	Carbonate (CO_3)	0	0	
27	Bicarbonate (HCO_3)	251	229	
28	Sulphate (SO_4)		20.3	
29	Chloride (Cl)	2.3	8.7	8.7
30	Fluoride (F)			
31	Nitrate (NO_3)	7.5		13
32	Silica (SiO_2), colorimetric		7.7	
33	Carbonate hardness as $CaCO_3$	206	188	
34	Non-carbonate hardness as $CaCO_3$	14.0	22.3	
35	Total hardness as $CaCO_3$	220	210	204
36	Sum of constituents		251	
37	Per cent sodium		5.9	
38	Saturation index at test temperature		+0.6	
39	Stability index at test temperature		6.8	
	Remarks:	*System not in operation: above wells being considered for use.		

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

D. NEW BRUNSWICK

(In parts per million)

TIDEHEAD (Concl'd)	WOODSTOCK			No.
Wells	Saint John River		Well, 96 feet deep	
No. 6 well A. Gerrard's well				
Raw and finished water	Raw water	Finished water	Raw and finished water	
At pump	At filter plant		At pump	
July 8/57		Aug. 9/54	Sept. 23/54	1
.....		9:133	8:20	2
.....		18.3	.....	3
25.2		22.9 (21)	21.5	4
.....		.....	.....	5
1.2		1.5	1.6	6
8.3		7.1 (7.0)	8.2	7
.....		0 (30)	3	8
.....		7 (10)	0	9
.....		6.2	.....	10
.....		2.8	.....	11
.....		80.4	186	12
.....		18.4	19.8	13
355		119	306	14
.....		14.7	50.0	15
.....		2.1	6.7	16
.....	*See*	.....	.....	17
.....		0.02	0.02	18
.....	Table II, Station No. 6	Trace	.....	19
.....		0.2	0.06	20
.....		0.0	.....	21
.....		.....	.....	22
.....		1.5	3.3	23
.....		0.3	1.4	24
.....		.....	.....	25
0		0 (0)	0	26
170		11.1 (12.6)	168	27
.....		35.0	18.2	28
9.6		2.4	5.1	29
.....		0.05	0.0	30
15		1.2	0.4	31
.....		4.4	9.0	32
139		9.1 (10.3)	137.6	33
21.0		36.2 (34.3)	14.7	34
160		45.3 (44.6)	152	35
.....		67.4	76.8	36
.....		6.5	4.5	37
.....		−2.2	+0.6	38
.....		11.5	7.0	39

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC

(In parts per million)

No.	Municipality	AMQUI	BARRE	CABANO	CAUSAPSCAL
	Source(s)	Pearson Creek		Wells	Artesian wells
		Raw and finished water		Raw and finished water	Raw and finished water
	Sampling point	Town tap		Town tap	Town tap
1	Date of sampling	July 8/55		Aug. 4/54	July 8/55
2	Storage period (days)	19:27		7:79	19:159
3	Sampling temperature, °C.	17.4		15.0	8.9
4	Test temperature, °C.	27.1 (26)		21.8 (15.5)	27.0
5	Oxygen consumed by $KMnO_4$	.....		.....	.....
6	Carbon dioxide (CO_2), (calculated)	1.6		3.1	1.8
7	pH	8.3 (8.1)		7.9 (7.3)	8.3 (7.5)
8	Colour	15		30	0
9	Turbidity	0		2	0
10	Suspended matter, dried at 105° C.	.....		.....	.....
11	Suspended matter, ignited at 550° C.	.....		.....	.....
12	Residue on evaporation, dried at 105° C.	189		193	238
13	Ignition loss at 550° C.	27.2		20.4	92.8
14	Specific conductance, micromhos at 25° C.	331		297	412
15	Calcium (Ca)	53.4		35.8	59.4
16	Magnesium (Mg)	9.3	*See*	15.0	13.3
17	Iron (Fe) Total	.....	St. Cyprien, Que.	.....	.....
18	Dissolved	0.0		0.02	0.01
19	Manganese (Mn)	0.0		0.0	0.01
20	Aluminum (Al)	0.08		0.21	0.15
21	Copper (Cu)	0.0		.....	0.02
22	Zinc (Zn)	.....		.....	.....
23	Sodium (Na)	2.1		4.3	6.4
24	Potassium (K)	0.7		0.7	0.7
25	Ammonia (NH_3)	0.2		.....	0.0
26	Carbonate (CO_3)	0		0	0 (0)
27	Bicarbonate (HCO_3)	203		141	229 (232)
28	Sulphate (SO_4)	4.8		43.0	15.8
29	Chloride (Cl)	1.9		0.9	6.2
30	Fluoride (F)	0.0		0.2	0.0
31	Nitrate (NO_3)	2.4		0.2	8.0
32	Silica (SiO_2), colorimetric	5.1		7.7	7.1
33	Carbonate hardness as $CaCO_3$	166		115	188 (190)
34	Non-carbonate hardness as $CaCO_3$	5.3		35.7	14.7 (14)
35	Total hardness as $CaCO_3$	171		151	203 (204)
36	Sum of constituents	180		177	230
37	Per cent sodium	2.6		57.0	6.4
38	Saturation index at test temperature	+0.9		0.0	+1.0
39	Stability index at test temperature	6.5		7.9	6.3
	Remarks:				

TABLE III – (Continued)

Chemical Analyses of Civic Water Supplies

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC

(In parts per million)

LAC-AU-SAUMON	NOTRE-DAME--DU-LAC	RIVIÈRE BLEUE	ST. CAMILLE--DE-LELLIS	ST.-CYPRIEN	ST.-ELEUTHÈRE	ST.-FABIEN-DE-PANET	No.
Lac Angus*	Springs and surface run-off*	Springs	Spring and well	Artesian wells	Spring	Well	
Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	
Town tap	Town tap	Town tap	At town tap	At town tap	At town tap	At town tap	
July 8/55	Aug. 5/54	Aug. 4/54	Mar. 6/58	Feb. 15/58	Mar. 19/58	May, 1958	1
19:159	6:117	7:79	5:13	16:25	6:12	.....	2
13.9	13.3	13.9	5.4	.....	.....	.....	3
27.1 (23.5)	21.8 (17)	21.8 (15)	23.8	24.4	23.2	26.6	4
.....	.....	.....	1.2	1.5	1.2	4.8	5
1.1	4.0	2.4	0.5	8.9	2.8	4.2	6
8.3 (8.0)	7.6 (7.2)	8.1 (7.3)	7.6	7.4	8.1	6.9	7
10	75 (80)	5	5	5	0	30	8
0	9	2	0.3	0	0.4	0.8	9
.....	4.1	.....	.....	.....	.....	.....	10
.....	2.6	.....	.....	.....	.....	.....	11
148	113	165	105	149	273	55.8	12
63.2	14.4	9.0	16.0	16.4	20.8	13.4	13
252	154	281	169	269	433	57.6	14
39.7	27.2	49.0	23.3	45.7	82.0	8.2	15
7.6	2.7	7.8	4.0	5.3	4.9	1.0	16
.....	.....	.....	.....	.....	.....	.....	17
0.0	0.09	0.002	0.02	0.01	Trace	0.04	18
0.0	0.0	0.0	0.02	0.0	Trace	0.0	19
0.08	0.27	0.21	0.0	0.08	0.09	0.0	20
0.0	.....	.....	0.0	0.0	0.0	0.0	21
.....	.....	.....	0.4	0.3	0.5	0.3	22
1.5	1.4	.....	3.2	1.6	3.0	1.2	23
0.6	1.2	1.6	0.4	0.5	0.2	0.4	24
0.0	.....	0.4	0.05	0.0	0.05	0.1	25
0 (0)	0 (0)	0.0 (0)	0	0	0	0	26
151 (154)	95.8 (93.5)	178 (174)	86.2	150	220	22.2	27
5.4	1.5	7.7	9.1	10.9	42.2	4.8	28
0.8	1.7	0.5	2.2	1.4	4.9	1.7	29
0.0	0.4	0.0	0.15	0.0	0.0	0.0	30
2.4	1.2	1.2	0.6	4.8	1.5	2.0	31
6.2	3.9	7.8	15	6.7	7.9	3.2	32
124 (126)	78.6 (76.6)	146 (143)	70.7	123	180	18.2	33
6.5	0.3	8.4	3.9	12.5	44.3	6.4	34
130	78.9	154	74.6	136	225	24.6	35
139	88.6	164	101	151	256	33.8	36
2.4	3.6	2.2	8.4	2.5	2.8	9.2	37
+0.6	−0.5	+0.5	−0.6	−0.3	+0.8	−2.2	38
7.1	8.6	7.3	8.8	8.0	6.5	11.3	39

* Or discharge from Lac Angus.

* In 1959 Lac Temiscouata was being used. *See* Table II, Station No. 19.

TABLE III – (Concluded)

Chemical Analyses of Civic Water Supplies

E. SAINT JOHN RIVER DRAINAGE BASIN IN QUEBEC

(In parts per million)

ST.-PAMPHILE			STE.-ROSE-DU-DÉGELÉ	STE.-SABINE	SAYABEC	VAL-BRILLANT	No.
Wells			Springs	Artesian well or spring	Sauvage Creek (Lac Malfaix)	Lauzier Creek	
Mixed wells (2)	Well No. 3	Spring No. 5*					
Raw and finished water			Raw and finished water	Raw and finished water	Raw and finished water	Raw and finished water	
At tap		At spring	Town tap	At town tap	Town tap	Town tap	
Jan. 27/58 10:17	Apr. 15/58 14:21	Feb. 10/58 8:14	Aug. 5/54 6:117	Jan. 28/58 9:16	July 8/55 17:152	July 8/55 17:159	1 2
.....	.....	.....	13.3	.....	16.7	17.2	3
23.0	25.6	21.2	21.8 (17)	22.5	27.5 (27.5)	27.5 (26)	4
1.6	2.6	1.6	.....	1.4	.....	.....	5
3.3	8.2	2.6	3.8	6.3	1.6	1.2	6
8.0	6.5	8.0	7.5 (6.9)	6.7	7.8 (7.9)	8.3 (8.1)	7
5	10	5	30	0	30	10	8
0	0.3	0	3	0	0	0	9
.....	.....	.....	2.0	.....	.....	.....	10
.....	.....	.....	0.9	.....	.....	.....	11
282	96.0	173	84.4	51.2	87.2	160	12
51.6	44.4	25.2	11.6	19.6	17.2	65.2	13
449	120	260	129	57.7	127	280	14
65.1	12.6	50.8	20.4	6.9	22.0	45.0	15
11.6	2.4	5.0	2.5	1.3	1.0	7.6	16
.....	.....	.....	.....	.....	.....	.....	17
0.03	Trace	0.0	0.02	0.01	0.01	0.01	18
0.01	0.0	0.0	0.0	0.01	0.0	0.0	19
0.03	0.04	0.05	0.03	0.02	0.04	0.07	20
Trace	0.0	0.0	.....	Slight trace	0.0	0.02	21
1.0	0.0	0.0	.....	0.0	.....	.....	22
9.6	4.3	2.2	1.9	1.4	1.7	1.7	23
0.5	1.2	1.7	0.6	0.2	0.6	0.5	24
0.0	0.15	0.0	.....	0.0	0.0	0.15	25
0	0.0	0	0 (0)	0	0 (0)	0	26
198	17.8	158	72.2 (70.8)	19.6	65.9 (70.8)	170	27
35.0	10.5	8.9	3.4	5.9	5.5	3.7	28
12.3	9.0	2.4	1.7	0.7	1.4	1.3	29
0.0	0.0	0.0	0.2	0.0	0.0	0.0	30
21	17	14	1.3	2.0	1.6	1.6	31
9.5	3.7	6.3	4.6	6.5	3.9	6.6	32
162	14.6	129	59.2 (58.0)	16.1	54.1 (58.0)	140	33
47.7	26.7	18.0	1.5 (1.4)	6.5	4.9	3.8	34
210	41.3	147	60.7 (59.4)	22.6	59.0	144	35
264	70.0	169	72.3	34.6	70.7	152	36
8.9	17.7	3.1	6.3	11.7	5.7	2.5	37
+0.6	−2.6	+0.3	−0.9	−2.6	−0.4	+0.7	38
6.8	11.7	8.3	11.3	11.9	8.6	6.9	39

* Possible new source of supply.

DISCUSSION

The drainage basins covered by this report (Table I) represent only 2.6 per cent of Canada, even though they include four provinces and a small part (0.8 per cent) of a fifth. The entire 98,670 square miles drained, is about midway in size between the Fraser River drainage basin and that of the Churchill River system.

This drainage area includes some of the oldest settled parts of Canada and in 1956 about 11 per cent of Canada's population dwelt here, 1 per cent less than it was in 1951. The percentage population served with water by organized systems is relatively small in comparison with the percentage so served in many of the other basins studied: this is due to the rural nature of most of the area, the percentage of population dwelling in incorporated communities being relatively low. Table I shows that in 1956, 40 per cent of the population was served with water from organized systems, an increase of about 1 per cent over that of 1951. Only in Nova Scotia and in the Saint John River basin in New Brunswick was the percentage of the population served higher than this average.

The chemical quality of the larger and industrially important rivers of the area is reported in Table II. It is believed that most surface waters not studied are similar in chemical character to nearby waters dealt with in this Table (*see also* Figure 2). Since the entire area lies within the same major geological region – the Appalachian – and has essentially the same climate, most rivers should be generally similar in character. Table II does show, however, sufficient differences in some watersheds to indicate significant variations in local geological and climatic conditions. Generally, surface waters range from very soft to the upper limit of medium hard although most are very soft when classified as follows:

Soft water	– up to 60 p.p.m. total hardness as $CaCO_3$
Medium hard water	– 61 to 120 p.p.m. total hardness as $CaCO_3$
Hard water	– 121 to 180 p.p.m. total hardness as $CaCO_3$
Very hard water	– Greater than 180 p.p.m. total hardness as $CaCO_3$
Very soft water	– Up to and including 30 p.p.m. total hardness as $CaCO_3$

Mineralization in waters of this area is mostly due to the hardness salts, principally the bicarbonates of calcium and magnesium. Since waters are low in these hardness salts, or soft, they are correspondingly low in total mineral content. However, the relative content of sodium chloride is often high, especially in waters near the coast: this is believed due to the pick-up of sea water spray by rain and wind. Other rivers, especially those of Prince Edward Island, are tidal for most of their courses and their industrial usefulness is at present almost nil.

Rivers and streams of the basin rising along the south shore of the St. Lawrence River and in the Gaspé Peninsula – the Matapedia, Restigouche, and Madawaska, for example – are harder and more mineralized than the short coastal rivers and those rising farther south in the central plateau of New Brunswick, such as the Miramichi and Salmon.

Figure 3 shows graphically the variation in water hardness of the Saint John River and its tributaries in August, 1954. Although this variation is appreciable it remains within the range of the soft water classification. Inflow of harder waters from the north (Madawaska River, etc.) and from the United States (Presquile River) is reflected in an increase in the hardness of the main Saint John River. However, the appreciable inflow from the central plateau of New Brunswick, from rivers such as the Nashwaak and Salmon quickly lowers the hardness of the main river so that near its mouth it is very soft – 25 to 30 p.p.m. hardness – even though slightly upstream the Kennebecasis River adds a somewhat harder water.

The rivers of mainland Nova Scotia are even softer than those of New Brunswick, most having a hardness of less than 10 p.p.m. as $CaCO_3$. Most are very short and pick-up or solution of minerals is therefore small. Once again the influence of the sea is noted in the higher ratio of sodium chloride to other salts in these very soft waters. Annapolis River, flowing for some distance through a fertile cultivated valley and protected from the sea, is characteristic of the rivers of New Brunswick, being higher in hardness and mineral content than the very soft coastal waters of eastern Nova Scotia. The rivers of Cape Breton Island also resemble closely in chemical quality those of New Brunswick.

The short rivers or streams of Prince Edward Island are tidal for much of their courses and have very little industrial application; one of the larger rivers of this area, even though sampled well upstream was still found to

be tidal at all periods of the year (station No. 104).

Quality studies of surface waters on the island of Newfoundland were limited because parts of the island are difficult of access. However, it is believed that enough of the larger rivers in the more settled regions have been included (*see* Figure 2) to assume that those not studied will be generally similar in character. The surface waters studied were all very soft and low in mineralization, being very similar in quality to rivers along the east coast of mainland Nova Scotia. The relative amount of sodium chloride in these waters varies widely but it is believed that the higher ratio is again due to the influence of wind-borne sea spray.

Surface waters of the report area are of considerable interest because of their very low mineral content and consequently their very soft character. While many are highly coloured, few carry appreciable amounts of suspended matter. Tidal rivers and those flowing through heavily cultivated areas, especially in the Chignecto Isthmus and on Prince Edward Island, may at times be excessively turbid. Because of their very low mineral content, high carbon dioxide and low pH, surface waters of the area are very corrosive.

Figure 4 graphically illustrates the relationship between mineral content and discharge in the Saint John River at Hawkshaw, N.B. (Station No. 7) during the period July, 1954 to July, 1955. Spring run-off (high discharge) occurred from late March to late June, 1955, reaching a peak about early May. A corresponding drop in total hardness and mineralization occurred with rising discharge. As expected, a peak in mineralization and hardness was found in midwinter (February) when river discharge was low. In mid September, 1954 an even higher discharge occurred but was not accompanied by a corresponding decrease in mineralization. A turbidity increase paralleled this flash flood in September but no marked increase in turbidity was noted during the major spring run-off. Except for the short period of high turbidity in September, 1954, turbidity was below 10 units at all other periods studied. It is pointed out, however, that many smaller flash floods of short duration could have occurred and not been noted in the monthly sampling program; at such flood periods turbidity may have risen higher than 10 units.

Spring run-off in the Saint John River appears to be mainly due to melting snow and other run-off from streams which contain very little dissolved or suspended matter, hence low turbidity and mineralization. On the other hand floods such as that which occurred in September are probably due to heavy rainfall over much of the basin; this rapid run-off flowing over cultivated and probably freshly plowed lands picks up appreciable amounts of sediment without having time to dissolve it, and thus produces high turbidity with little change in mineralization. The extent of such rainfall is noted from Table II, where rises in turbidity and discharge are noted elsewhere on Saint John and tributary rivers. As expected, total hardness generally follows changes in total mineralization or conductivity since mineralization is due mainly to the hardness salts. The divergence of the curves in February, when discharge is low, indicates that at this period the ratio of other salts principally the alkali chlorides, has increased. While seasonal variations in hardness and mineralization are appreciable, the former ranging from 37 to 56 p.p.m. as $CaCO_3$, the water still remains at all times a soft water and for many industrial purposes such variations are of minor importance.

Figure 5 shows the relationship between discharge and mineralization of a typical coastal river in Nova Scotia, St. Mary's River at Stillwater (Station No. 90). Again the variations noted in hardness and mineralization are significant for most industrial and domestic uses, water hardness for example ranging only from 4 to 8 p.p.m. as $CaCO_3$. Divergences from, and crossing of the curves for conductivity and total hardness clearly show the effect of the solution of sodium chloride from wind-laden sea spray.

Discharge in this river from July, 1954 to late June, 1955 was variable, with peaks in October and December 1954, and in late March, 1955. Such peaks are to be expected, considering the smallness of the watershed and the consequent influence of heavy rain and snowfall. According to the data here reported, turbidity in this river is never appreciable but it is again evident that somewhat higher turbidities are found during flash floods in the fall rather than during the major spring run-off, when melting snow is the major contributor.

St. Mary's River differs from the Saint John at Hawkshaw in that mineralization was greatest during the late fall rather than midwinter. This, however, is just after the period of lowest discharge and so agrees with the relationship found between discharge and mineralization in most rivers. It will be noted that discharge, disregarding the several flash floods above-mentioned, rose from a low in September, 1954, to a peak about April, 1955. The lag in the decrease of mineralization with rising discharge in October, 1954, may be due to several factors, one

being that first run-off comprises more or less concentrated waters from swamp areas.

Figure 5 indicates appreciable variation in quality, but such variations are relatively small and insignificant in so far as the usefulness of, or the need for, treatment of the water is concerned.

Figure 6 is a similar graphical presentation of a typical Newfoundland river, Gander River at Glenwood (Station No. 113). Discharge was again highest in April and May, 1955 at the period of spring run-off. Another peak in discharge occurred in mid-January 1955, rising from a low in September, 1954. Turbidity, in contrast to most other rivers, was appreciable only during the period of low discharge and remained low, as in Saint John River at Hawkshaw, during the spring run-off when melting snows caused the major rise in discharge. The rise in discharge with low turbidity in January, 1955 was doubtless due partly to a January thaw and a run-off of melting snow carrying very little suspended matter. It is difficult to account for the marked rise in turbidity in late July, 1954 unless due to some local condition which did not materially affect discharge. Hardness and conductivity again follow essentially the same curve, indicating that mineralization is essentially due to the hardness salts. However, there is sufficient variation, particularly at times of high discharge to show that run-off is a softer water, probably melted snow.

Similar graphs can be plotted for other rivers from the data of Table II and variations in quality can generally be readily related either to general or local climatic or watershed conditions.

TABLE IV

Municipal Water Supplies in the Drainage Basins

Summary of data on systems, treatment and population served in 1951 and 1956

Drainage basin of	Census Year	Served with water by organized system			Number of and different types of water sources			Estimated population in hundreds served with waters classed as:		
		No. of communities	No. of systems	No. of sources	ground	surface	mixed	ground	surface	mixed
Island of Newfoundland	1956	24	23	21	1	20	0	18	1,286	0
	1951	24	23	21	1	20	0	15	1,130	0
Nova Scotia	1956	48	45	40	8	28	4	286	2,993	59
	1951	48	45	40	8	28	4	281	2,723	43
Prince Edward Island	1956	2	2	2	2	0	0	236	0	0
	1951	2	2	2	2	0	0	221	0	0
New Brunswick										
Saint John River	1956	18	16	15	5	8	2	382	968	17
	1951	18	16	15	5	8	2	340	872	16
Remainder	1956	15	14	14	8	5	1	257	230	430
	1951	15	14	14	8	5	1	241	207	340
Quebec										
Saint John River	1956	10	10	10	9	0	1	92	0	8
	1951	10	10	10	9	0	1	82	0	7
Restigouche River, etc.	1956	5	5	5	1	4	0	30	81	0
	1951	5	5	5	1	4	0	26	73	0
TOTALS	1956	122	115	107	34	65	8	1,301	5,558	514
	1951	122	115	107	34	65	8	1,206	5,005	406

TABLE IV

Municipal Water Supplies in the Drainage Basins

Summary of data on systems, treatment and population served in 1951 and 1956

No. of sources treated as follows:			Estimated population served with water treated as follows:			Estimated population served by organized water system as:		Percentage of population served using	
None	Chlorination	Additional treatment	None	Chlorination	Additional treatment	in hundreds	percentage of total	surface waters	untreated waters
10	12	1	203	1,040	61	1,304	38.2	98.6	15.6
10	12	1	165	929	51	1,145	32.4	98.7	14.4
14	20	6	333	1,649	1,356	3,338	48.0	89.7	10.0
14	20	6	319	1,575	1,153	3,047	47.4	89.4	10.5
1	1	0	69	167	0	236	23.7	0	29.2
1	1	0	62	159	0	221	22.5	0	28.1
8	6	1	398	935	34	1,367	57.9	70.8	29.1
8	6	1	356	840	32	1,228	54.9	71.0	28.9
9	5	0	278	639	0	917	28.8	25.1	30.3
9	5	0	256	532	0	788	27.0	26.3	32.5
9	1	0	91	9	0	100	17.8	0	91.0
9	1	0	84	5	0	89	18.2	0	94.4
4	1	0	79	32	0	111	31.9	73.0	71.7
4	1	0	73	26	0	99	31.2	73.7	73.7
55	46	8	1,451	4,471	1,451	7,373	40.0	75.4	19.7
55	46	8	1,315	4,066	1,236	6,617	39.1	83.2	19.9

TABLE V

Municipal Water Supplies in the Drainage Basin

Summary of data on water hardness, 1951 and 1956

Drainage basin of	Census Year	Number of sources considered	Number of systems using waters classed as				Estimated population served with waters classed as				Percentage of total population served in each basin with waters classed as				Weighted average hardness (1956) of waters (p.p.m. as $CaCO_3$)	
			soft	medium hard	hard	very hard	soft	medium hard	hard	very hard	soft	medium hard	hard	very hard		
Island of Newfoundland	1956	21	20	0	0	1	1,286	0	0	18	98.6	0	0	1.4	18.5	
	1951	21	20	0	0	1	1,130	0	0	15	98.7	0	0	1.3		
Nova Scotia	1956	40	36	4	0	0	3,187	151	0	0	95.5	4.5	0	0	12.9	
	1951	40	36	4	0	0	2,902	145	0	0	95.2	4.8	0	0		
Prince Edward Island	1956	2	0	1	1	0	0	167	69	0	0	70.8	29.2	0	109	
	1951	2	0	1	1	0	0	159	62	0	0	61.9	28.1	0		
New Brunswick																
Saint John River	1956	15	8	5	1	1	974	348	8	37	71.3	25.4	0.6	2.7	39.6	
	1951	15	8	5	1	1	889	307	8	24	72.4	25.0	0.7	1.9		38.7
Remainder	1956	14	8	5	1	0	687	211	19	0	74.9	23.0	2.1	0	37.4	
	1951	14	8	5	1	0	587	186	15	0	74.5	23.6	1.9	0		
Quebec																
Saint John River	1956	10	3	3	3	1	20	23	42	15	20.0	23.0	42.0	15.0	104	128
	1951	10	3	3	3	1	17	17	41	14	19.1	19.1	46.1	15.7		
Restigouche River etc.	1956	5	1	0	3	1	23	0	59	29	20.7	0	53.2	26.1	148	
	1951	5	1	0	3	1	22	0	51	26	22.2	0	51.5	26.3		
Totals	1956	107	76	18	9	4	6,177	900	197	99	83.8	12.2	2.7	1.3		
	1951	107	76	18	9	4	5,547	814	177	79	83.8	12.3	2.7	1.2		

Much of the data on municipal water quality (Table III) and on the operation of these organized water systems are summarized in Tables IV and V. It is difficult to maintain the data on these systems up-to-date since the number of such systems changes and variations in operation or treatment of older systems are continually occurring. Differences between the number of people served with water, and the local population indicated by federal census in municipal reports can usually be traced to the fact that some water systems actually serve only a part of the total population or supply unincorporated communities outside the municipality. In the calculation of Tables IV and V an average value for population served was used in some instances.

In Table IV information on the source and treatment of 115 systems using 107 different water sources is summarized: about 61 per cent of the latter are surface water supplies, although in Prince Edward Island and New Brunswick a higher proportion of the population uses ground waters. This high use of surface waters is to be expected because of the low mineralization and satisfactory chemical quality of these waters, particularly in Nova Scotia and the island of Newfoundland.

Fifty per cent of all water sources are untreated, while 92 per cent of the waters are used untreated or only after chlorination. This reflects the rural nature of the area and the generally satisfactory quality of most surface waters.

The importance of surface waters for municipal use is further evident from Table IV in that 75 to 80 per cent of the total population served use such waters. In the province of Nova Scotia and the island of Newfoundland where the surface waters are particularly low in mineralization, over 90 per cent of the people served use these waters. In the entire area about 20 per cent of the population served use waters that are untreated, not even chlorinated.

Table V summarizes the information on water hardness in these municipal systems. Over 71 per cent of the systems and about 84 per cent of the population used soft waters in 1956; 88 per cent of the systems and 96 per cent of the population served used water with less than 121 p.p.m. hardness, i.e. soft and medium hard waters. During the period 1951 to 1956 the percentage of population so served has shown little change throughout the area.

The weighted average hardness of these municipal waters further illustrates their soft character; only in Prince Edward Island where the two systems in operation use ground waters, and in the area of the basin in Quebec where use of ground waters also predominates, does the weighted average hardness approach a medium hard water.

SUMMARY

Surface waters of the Atlantic Provinces and Saint John River basins are generally very soft, ranging to the upper limit of a medium hard water in certain regions. While mineralization and hardness within this range may vary seasonally and from river to river, these variations are relatively insignificant, except for occasional high turbidity, for most municipal and industrial uses. Higher turbidities are usually due to flash run-off from cultivated lands and are of very short duration. However, because of the geological nature and smallness of many of the watersheds, rapid and wide variations in discharge are common. At periods of low flow, rivers of this character are particularly suspectible to pollution and to changes within the watershed. Consequently, it is necessary to maintain careful control of waste disposal and of the use to which waters are put in much of the area covered by this report. There is a marked similarity in quality and relationship between discharge and quality in many of these rivers and those of coastal British Columbia (W.S.R. No. 5).

The rivers above tidal influence are suitable for most industrial uses without excessive treatment and often without any treatment. However, because of their very low mineralization, low pH and high carbon dioxide content they are particularly corrosive, and treatment is desirable to counteract such corrosion even for municipal use. Also, the rapid run-off and resultant low flow at other seasons requires adequate storage of this run-off on many rivers if they are to be used for major industrial purposes. In many rivers additional long-term studies of quality related to discharge are desirable in order to show the extremes that can be expected.

Most municipalities use surface waters without appreciable treatment because of their ready availability and excellent quality. Ground waters are used only in areas where industry or population increase has affected the rivers, often by land cultivation. Such ground waters are necessarily used in other areas because available surface waters are tidal. In New Brunswick particularly, problems due to high manganese, iron and chloride content in ground waters has led to increasing consideration of surface waters.

These soft surface waters, more or less common to all coastal areas of Canada are of considerable importance to industry, especially when problems connected with discharge and corrosivity are anticipated. There is a need for a simple and effective means of combatting the corrosivity of these waters to make their use more attractive and economic to both industry and municipality.

APPENDIX A

Surface Water Sampling Locations – Island of Newfoundland, Maritime Provinces and the Saint John River Drainage Basin in Canada

APPENDIX A – (Continued)

Surface Water Sampling Locations – Island of Newfoundland, Maritime Provinces and the Saint John River Drainage Basin in Canada

APPENDIX A – (Concluded)

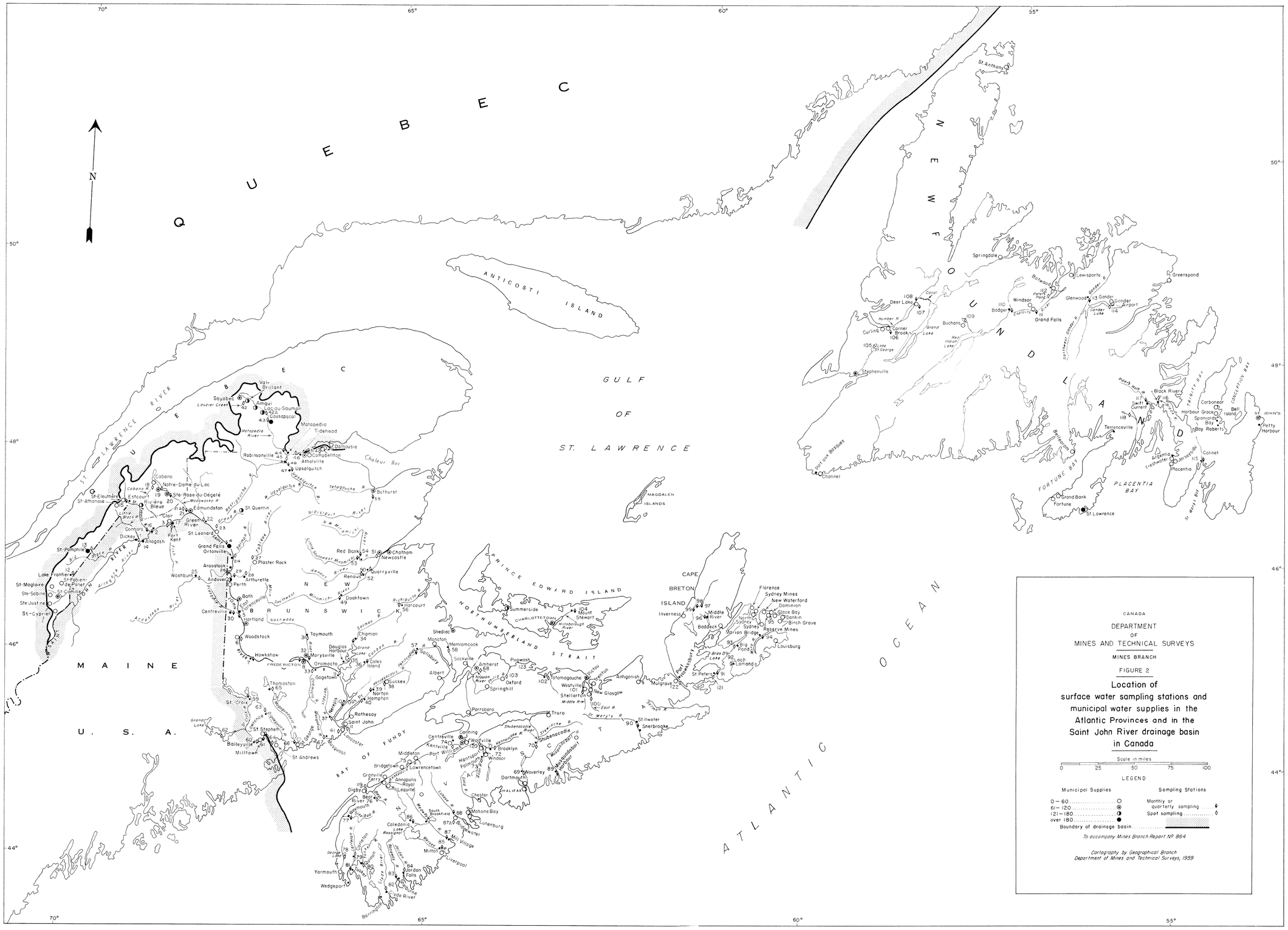
Surface Water Sampling Locations – Island of Newfoundland, Maritime Provinces and the Saint John River Drainage Basin in Canada

APPENDIX B

Municipal Water Systems – Island of Newfoundland, Maritime Provinces and the Saint John River Drainage Basin in Canada

APPENDIX B (Concluded)

Municipal Water Systems – Island of Newfoundland, Maritime Provinces and the Saint John River Drainage Basin in Canada



CANADA

DEPARTMENT
OF
MINES AND TECHNICAL SURVEYS

MINES BRANCH

FIGURE 2

Location of surface water sampling stations and municipal water supplies in the Atlantic Provinces and in the Saint John River drainage basin in Canada

Scale in miles
0 25 50 75 100

LEGEND

Municipal Supplies	Sampling Stations
0 – 60	Monthly or quarterly sampling
61 – 120	Spot sampling
121 – 180	
over 180	
Boundary of drainage basin	

To accompany Mines Branch Report No. 864

Cartography by Geographical Branch
Department of Mines and Technical Surveys, 1959