INTERNATIONAL ST. CROIX RIVER BOARD

ANNUAL REPORT

2007

ST. CROIX RIVER
MAINE AND NEW BRUNSWICK

2007 ANNUAL REPORT

of the

INTERNATIONAL ST. CROIX RIVER WATERSHED BOARD

covering

The Orders of Approval with respect to the control of the discharge of the St. Croix River at Forest City, Vanceboro, and the water levels of East Grand Lake, Spednic Lake, Grand Falls Flowage and Milltown Dam Forebay.

The Water Quality and Aquatic Ecosystem for the St. Croix River Boundary Waters.

SUBMITTED TO

THE INTERNATIONAL JOINT COMMISSION

by

THE INTERNATIONAL ST. CROIX RIVER WATERSHED BOARD

TABLE OF CONTENTS

1.0 GENERAL

1.1 Synopsis for 2007

For the third consecutive year, 2007 was a good water year on the St. Croix River system. Lake levels were maintained within normal levels and flows in the river provided satisfactory conditions for power generation, canoeing and kayaking, and support of aquatic life.

During the year flows and levels were maintained in accordance with IJC's Orders except for one very small weather incident at Forest City Dam. This shell ice event occurred in the late evening and early morning hours of December 1-2 decreasing the outflow at the dam. Domtar staff acted immediately to correct the ice build-up at the gate and increase the flow at the gate. This incident did not have any significant effects.

Several Board study efforts were either completed or nearing completion in 2007 including the GIS Atlas, the reservoir & rainfall/runoff modeling, participation in the USGS led effort to develop an International Watershed Boundary and Hydrography Data set, and the State of the Watershed Report.

A highlight of 2007 was the Board's designation as the IJC's first Watershed Board which was approved and announced by the Commissioners at the Semi-Annual IJC meeting in Washington. D.C. in April, 2007.

1.2 Board Membership

Board membership information is provided below. Please note that Canadian Board Member, Joe Arbour retired in fall of 2006 and that two new Board members joined the Canadian Section in December 2007.

<u>Canadian Section</u>
Bill Appleby, Canadian Co-Chair, Director, National Service Operations, Meteorological Service of Canada, Environment Canada

William Ayer, Liaison with New Brunswick Department of the Environment

Jessie Davies, Resident, St. Andrew's New Brunswick

Robert Stephenson, Ph.D., Director, St. Andrews Biological Station
St. Andrews, New Brunswick

Charles LeBlanc, Manager, Water Quality Monitoring, Science & Technology Branch, Environment Canada Atlantic

Peter Johnson, Canadian Secretary, Policy and Strategic Planning Division
Environment Canada, Atlantic Region

U.S. Section
Colonel Curtis Thalken, U.S. Co-Chair, District Engineer, U.S. Army Corps of Engineers, New England District

Edward Logue, Regional Director, Eastern Maine, Maine Dept. of Environmental Protection

Carol Wood, Office of Administration and Resources Management, U.S. EPA, New England Regional Office

Joan Garner Trial, Ph.D., Senior Atlantic Salmon Biologist, Maine Department of Marine Resources, Bureau of Sea Run Fisheries and Habitat

Robert M. Lent, Ph.D., Maine District Chief, United States Geology Survey

Barbara Blumeris, U.S. Secretary, U.S. Army Corps of Engineers, New England District

1.3 Designation as a Watershed Board

In April, 2007, the St. Croix Board became the IJC's first International Watershed Board. This designation is consistent with the IJC's International Watersheds Initiative (IWI). The IWI concept is to promote an integrated, ecosystem approach to issues arising in transboundary waters through enhanced local participation and strengthened local capacity. The approach recognizes the relationship between the watershed and the boundary waters. It also encourages a collaborative approach between Canada and U.S. to prevent and resolve issues at the local level.

The Board is very pleased and proud of this designation and looks forward to continuing to work with local stakeholders to assist them in their efforts to balance competing water resource uses along the Boundary water with a viewpoint that incorporates the St. Croix watershed in Maine and New Brunswick and the St. Croix estuary.

1.4 Annual Public / Stakeholder Meeting in Basin

The annual public meeting was held in Calais, Maine on the evening of August 28, 2007 at the Downeast Heritage Museum. IJC Commissioners Irene Brooks, Jack Blaney, and Allen Olson, IJC staff and St. Croix Board Members attended the meeting. Invited presenters included Donna Adams, Domtar; Jonathan Burtt, New Brunswick Department of the Environment; Townsend Barker and Heather Rausch, U.S. Army Corps of Engineers. Nine members of the public attended the meeting.

After welcoming meeting participants and providing introductory comments, Colonel Thalken introduced the Commissioners. Commissioners spoke briefly and announced the designation of the Watershed Board. The Commissioners also provided a certificate to Joe Arbour on his retirement form the Board. After these opening remarks the following presentations were provided.

Colonel Thalken provided a review of the Board's oversight role in the Basin and discussed some of the Board's special study efforts in 2007. Townsend Barker and Heather Rausch provided a brief presentation on the reservoir and rainfall/runoff modeling efforts. Donna Adams, Hydro Superintendent for Domtar, provided information on Water Management during 2007. Jonathan Burtt and Carol Wood provided presentations on Water Quality and Classification status.

Meeting participants were generally pleased with the presentations and there were no significant questions or concerns raised.

1.5 Annual Site Visit of Facilities in the Basin

Board members met with Domtar Officials in the Woodland Mill at Baileyville, Maine on the morning of the August 29, 2007 and then visited the dam sites (Forest City, Vanceboro, and Grand Falls). Board members met with NB Power officials on the afternoon of August 29th and visited the Milltown Dam. Visit notes and Information

describing the dams is provided in Appendix 2.

1.6 Policy of the Board Regarding Dam Regulation

The Board continued its policy of leaving the control of operation of the dams at Forest City, Vanceboro, and Grand Falls (owned and operated by Domtar, Inc.), and Milltown (owned and operated by New Brunswick Power) in the owners' hands, exercising only that oversight necessary to ensure adherence to the requirements of the Commission's Orders.

During the reporting period, the Board reviewed conditions prevailing in the river by the following means: a continuous record of water elevations of East Grand Lake and continuous record of discharge below Forest City Dam; a continuous record of water elevations of Spednic Lake and a continuous record of discharge at Vanceboro; a continuous record of water levels above the dam at Grand Falls; a continuous record of discharge at Baring, Maine; and monthly reports received from New Brunswick Power indicating daily forebay elevations obtained during regular work days at the Milltown Dam. Data are discussed in Section 2 of this report and summarized in Tables and Figures in the Appendices.

2.0 MANAGEMENT OF THE WATER LEVELS AND FLOWS

In 2007, the annual mean water level at East Grand Lake was 131.817 metres (432.47 feet), which is higher than the long term mean value of 131.792 metres (432.39 feet).

The annual mean flow from the lake at Forest City Stream was 6.24 m^3/s (220 cfs), 1% lower than the long term mean value of 6.31 m^3/s (223 cfs).

The annual mean water level for the year at Spednic Lake was 116.303 metres (381.571 feet) lower than the long term mean value of 116.284 metres (381.509 feet).

The annual mean flow as recorded at Vanceboro was 19.1 m^3/s (675 cfs), 6.4 % lower than the long term mean of 20.4 m^3/s (720 cfs).

The annual mean flow at Baring was 65.5 m^3/s (2313 cfs), which is 10 % lower than the long term mean at Baring of 72.8 m^3/s (2570 cfs).

2.1 East Grand Lake Reservoir and Discharges Below Forest City Dam

During the period from January 1 to December 31, the reservoir was operated between a maximum daily mean water level of 132.310 metres (434.80 feet) on 21 May, and a minimum daily mean of 131.140 metres (430.249 feet) on 2nd of November. The maximum lake level as prescribed by the Commission's Order is 132.570 metres (434.94 feet): the minimum is 130.496 metres (428.14 feet). The Order was maintained throughout the year.

The daily mean elevations are presented in Table I and depicted in Figure I of the Appendix.

The maximum daily mean for the reporting period was 23.7 m^3/s (837 cfs) on 27 of April and the minimum daily mean was 2.18 m^3/s (76.9 cfs) on 19 of August. The mean discharge for the year was 6.24 m^3/s (220 cfs).

Table II and Figure II of the Appendix presents the daily mean discharges below the Forest City Dam at the outlet of East Grand Lake for 2007.

The Commission's Order of 2.12 m^3/s (75 cfs) as a minimum flow was maintained

throughout the year with the exception of a shell ice event which occurred in the late evening and early morning hours of December 1-2. A total of 3 shell ice occurrences of short duration were quickly attended to by Domtar personnel who were dispatched to the site as a result of an alarm triggered by the data logger located below the dam at Forest City. The minimum flow reached occurred during the first event and was 0.544 M^3/s. Details of this incident and corrective actions taken were released by Domtar personnel via a memo dated December 3, 2007. A snapshot of the data collected below the dam at Forest City Stream during this event is depicted in figure VIII of the appendix.

2.2 Spednic Lake Reservoir and Discharges below Vanceboro Dam

During the year, levels in the Spednic Lake reservoir, ranged from a maximum daily mean of 117.433 metres (385.28 feet) on 7 June, to a minimum daily mean of 115.005 metres (377.31 feet) on 27 October. The maximum limit specified in the Commission's Order is 117.610 metres (385.86 feet). The allowable minimum level is 113.233 metres (371.50 feet) for the period January 1 to 30 April and 1 October to December 31 inclusive, and 114.757 meters (376.50 feet) for the period 1 May to 30 September inclusive. These orders were maintained throughout the year.

The daily mean elevations for the Spednic Lake Reservoir during the year are presented in Table III and depicted in Figure III of the Appendix.

The maximum daily mean discharge recorded from the outflow at the reservoir at Vanceboro was 83.3 m^3/s (2940 cfs) on 26 April and the minimum daily mean recorded was 6.20 m^3/s (219), on 29 November. The Commission's Order of a minimum flow of 5.66 m^3/s (200 cfs) was maintained throughout the year.

Daily mean discharges are presented in Table IV and depicted in Figure IV of the Appendix.

2.3 Water Levels above Grand Falls Dam

Table V of the Appendix and Figure V include a list of the water level elevations of the headpond above the Grand falls Dam. The recorded maximum daily mean elevation was 61.903 metres (203.09 feet) on 1 October and the minimum recorded elevation was 61.630 metres (202.20 feet) on 10 October.

The maximum prescribed elevation of 62.106 metres (203.76 feet), as set by the Commission, was not exceeded at any time during the year.

2.4 Discharges at Baring, Maine

Table VI of the Appendix and Figure VI presents and depicts the daily mean discharges of the St. Croix River at Baring, Maine. The mean discharge for the report period was 65.5 m^3/s (2310 cfs). The maximum daily mean was 368 m^3/s (13000 cfs) on 19 April. The minimum daily mean was 30.3 m^3/s (1070 cfs) on 21 August.

Domtar met the minimum flow requirement of 21.2 m^3/s (750 cfs) included in the formulation of the Mill's National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge Permit by Maine Department of Environmental Protection.

2.5 Headwater Elevations above Milltown Dam

Table VII and Figure VII of the Appendix present and depict daily water elevations in the forebay of the NB Power Corporation plant at Milltown, New Brunswick. These elevations refer to mean sea level datum. As daily observations of elevations are not obtained on holidays or weekends, maximum and minimum daily mean water levels are not quoted in this report.

3.0 WATER QUALITY

3.1 USGS Milltown Monitor

Water-quality values for the St. Croix River at the Milltown monitor were within the extreme values for the period of daily record during the summer of 2007 based on record since September 1969. Values were above the water-quality objectives for the river. The maximum dissolved oxygen value recorded was 10.1 mg/L on September 19; the minimum dissolved oxygen value recorded was 6.6 mg/L on July 19, and August 1. There was an instrument malfunction on August 22 which was corrected on August 27. Data for all parameters are missing during that period. The monthly statistics for August were computed without the data from those days.

St. Croix River at Milltown
Station # 01021050
Water-Quality Monitor
June – September 2007

Dissolved Oxygen (mg/L)
IJC objective = 5.0 mg/L minimum

	June	July	August	Sept.
Maximum	9.3	8.3	8.8	10.1
Minimum	6.8	6.6	6.6	7.8
Mean	8.4	7.5	7.7	9.1

Water Temperature (degrees centigrade)

	June	July	August	Sept.
Maximum	25.1	27.1	27.3	22.4
Minimum	16	19.7	19.2	16.3
Mean	20.3	23	23.5	19.1

pH (standard units)

	June	July	August	Sept.
Maximum	7.1	7.1	7.2	7.2
Minimum	6.8	6.8	6.7	6.9
Median	6.9	7	7	7.1

Specific conductance (microsiemens per centimeter at 25 C)

	June	July	August	Sept.
Maximum	89	110	103	120
Minimum	60	62	57	67
Mean	74	87	83	86

3.2 Environment Canada Monitoring Stations – Forest City and Milltown

3.2.1 Interpretation of Real-Time Monitoring Data

Environment Canada currently maintains two real-time monitoring stations on the St. Croix International River. The first location is at the outlet of the Grand Lake Dam in Forest City, Maine which is one of the sources of the St. Croix River. The second location is at the Milltown Dam located at the New Brunswick Power Generating Station in St. Stephen, New Brunswick.

During the first full year operating these two monitoring stations, considerable time and effort was spent on improving procedures to ensure consistent and reliable data was collected. With the operation of any real-time program, equipment failure is a likely event. There were several periods where either individual sensors or the entire multi-parameter probes were not working properly. There were also periods where sensors drifted significantly during the deployment period. In both of the above cases, the affected data was removed as it is not representative of the conditions at those locations at that time.

On the next few pages, monthly summaries for each of the following parameters (Specific Conductance, Dissolved Oxygen, pH, and Temperature) are presented for both monitoring stations. Yearly charts for each parameter are also included in Appendix 5.

It is interesting to note that measurements for DO, Temp, and pH at the USGS monitor and the Environment Canada monitor at Milltown matched very closely, however, the results for specific conductance differed considerably. What could possibly account for these differences is that there is approximately 500 metres of separation between Environment Canada’s monitoring probe and the USGS's. Also, Environment Canada’s measurements are taken before the water goes through the turbines at a depth of approximately 6-10' below the surface depending on elevation, while the USGS has their monitor set in the river after the dam and power station.

St. Croix River at Forest City, Maine

Dissolved Oxygen (mg/L)

	January[1]	February[2]	March[2]	April[2]	May[2]	Jun.[3]	July[3]	Aug.[3]	September	October	November	Dec.
Max	N/A	N/A	N/A	N/A	N/A	10.3	9.0	9.0	9.4	11.1	13.8	14.1
Min	N/A	N/A	N/A	N/A	N/A	8.6	8.5	8.4	8.3	9.1	10.7	13.2
Mean	N/A	N/A	N/A	N/A	N/A	9.2	8.8	8.7	9.0	9.8	12.1	13.6
% of monthly data used	N/A	N/A	N/A	N/A	N/A	46	35	36	100	100	87	78

1 Probe was not deployed in January because of concerns over ice formation

2 sensor malfunction - data unusable

3 Data for June, July, and August are partial month results because of sensor malfunction

Temperature (°C)

	January[1]	February	March	April	May	June	July	Aug.[2]	September	October	November	Dec.
Max	N/A	0.5	2.5	4.5	16.5	23.3	27.6	27.5	21.1	17.7	10.6	1.2
Min	N/A	0.2	0.4	1.9	3.7	10.3	18.8	19.2	15.6	8.5	1.0	-0.2
Mean	N/A	0.4	1.0	2.8	10.0	17.4	21.9	22.3	18.3	13.5	5.3	0.6
% of monthly data used	N/A	100	100	90	100	86	100	46	100	100	89	81

1 Probe was not deployed in January because of concerns over ice formation

2 Probe malfunction from Aug 3 to 21 - no data for this period

pH (std units)

	January[1]	February[2]	March[2]	April	May	June	July	Aug.[3]	September	October	November	Dec.
Max	N/A	N/A	7.1	6.9	7.1	7.3	7.7	7.5	7.4	7.3	7.3	7.3
Min	N/A	N/A	6.7	6.6	6.7	6.6	7.0	7.0	6.9	7.1	7.1	7.0
Mean	N/A	N/A	6.9	6.8	6.9	6.8	7.3	7.2	7.2	7.2	7.2	7.1
% of monthly data used	N/A	N/A	63	90	100	76	100	46	100	100	87	79

1 Probe was not deployed in January because of concerns over ice formation

2 pH sensor malfunction - data unusable before March 13th.

3 Probe malfunction from Aug 3 to 21 - no data for this period

Specific Conductance (uS/cm)

	January[1]	February	March	April[2]	May[2]	Jun[2]	July	Aug.[3]	Sept.[3]	Oct.[3]	November	Dec.
Max	N/A	32.5	32.6	N/A	N/A	38.3	41.8	N/A	N/A	34.7	37.1	33.4
Min	N/A	31.0	29.9	N/A	N/A	32.4	32.8	N/A	N/A	33.2	30.5	19.4
Mean	N/A	31.8	31.2	N/A	N/A	33.9	34.5	N/A	N/A	34.2	32.9	32.3
% of monthly data used	NA	100	100	NA	NA	33	100	NA	NA	80	100	100

1 Probe was not deployed in January because of concerns over ice formation

2 No data for period between April 2 and June 20

3 sensor malfunction from Aug 3 to October 6

St. Croix River at St. Stephen, NB

Dissolved Oxygen (mg/L)

	January	February	March	April	May	June	July	Aug.	Sept.[1]	October[1]	November	Dec.
Max	14.3	14.0	14.2	13.8	12.5	9.2	8.7	9.4	9.3	11.1	13.4	14.2
Min	13.1	13.4	13.0	11.8	9.1	6.9	6.6	6.7	7.4	9.5	10.3	13.3
Mean	13.8	13.7	13.7	12.7	10.6	8.2	7.4	7.8	8.1	10.3	12.0	13.7
% of monthly data used	92	100	100	97	82	85	84	79	27	49	100	100

1 data from September 12 to October 24 removed because of sensor malfunction

Temperature (°C)

	January	February	March	April	May	June	July	Aug.	Sept.	October	November	Dec.
Max	1.9	0.0	3.1	9.3	18.5	24.9	27.1	27.3	22.3	18.4	11.1	0.8
Min	-0.1	-0.1	-0.1	1.3	6.8	15.9	19.7	19.4	16.3	9.2	0.9	-0.1
Mean	0.2	-0.1	0.7	4.2	12.8	20.2	23.1	23.2	19.1	14.0	5.0	0.0
% of monthly data used	97	92	94	100	91	95	100	95	84	100	96	100

pH (std units)

	January	February	March	April[1]	May[1]	June[1]	July	Aug.	Sept.	October	Nov.[2]	Dec.
Max	7.0	7.0	7.2	7.2	N/A	7.1	7.3	7.4	7.2	7.2	7.2	7.1
Min	6.8	6.8	6.6	6.8	N/A	6.9	6.8	6.7	6.6	6.7	6.5	6.6
Mean	6.9	7.0	6.9	7.0	N/A	7.0	7.0	7.0	7.0	7.0	6.8	6.8
% of monthly data used	100	100	100	59	N/A	56	96	91	83	100	29	100

1 data from April 20 to June 13 removed because of sensor malfunction

2 data from November 8 to November 29 removed because of sensor malfunction

Specific Conductance (uS/cm)

	January	February	March	April	May	June	July	Aug.	Sept.	October	November	Dec.
Max	69.3	66.8	83.2	46.5	53.4	79.3	100.3	95.6	107.4	120.0	95.8	103.5
Min	33.8	47.2	33.1	23.0	21.2	46.8	57.6	49.8	56.6	50.9	42.3	50.2
Mean	50.4	57.2	53.2	34.9	39.1	62.6	79.9	73.8	75.1	93.9	59.5	80.2
% of monthly data used	94	90	100	100	87	92	96	92	81	100	93	100

3.2.2 Interpretation of Monthly Grab Samples

Staff from Environment Canada's Water Quality Monitoring Group along with staff from the New Brunswick Department of the Environment visited each real-time monitoring location on a monthly basis. During each of these visits, the multi-parameter sonde was removed from the water and taken off-site for cleaning and calibration. The following day, the newly calibrated sonde was re-deployed at the site and grab samples were collected for analysis at Environment Canada's Atlantic Environmental Testing Laboratory located in Moncton, NB. This laboratory is accredited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) for all parameters reported here.

St. Croix River at Forest City, Maine

The range of results for each parameter measured is shown on the next page alongside their applicable guideline for the protection of aquatic life[1,2,3]. Four parameters exceeded their applicable guideline.

All four parameter exceedances were from the same sample, collected on July 25, 2007. The dissolved portion of this sample exceeded the guidelines for Cd, Cu, Pb, and Zn. This is likely the result of contamination during sample collection because all other samples collected at this location were below the applicable guidelines. The fact that all extractable concentrations for these four same parameters were all well below the guidelines supports this conclusion.

One other sample, collected on January 31, 2007 had an elevated level of dissolved Zinc above the guideline. The extractable Zinc concentration for this same sample was at the reporting limit and thus points to field contamination again.

The above noted concentrations were removed from the range of results because they do not represent the actual environmental conditions at the time of sample collection.

It should be noted that Environment Canada has become aware of a possible Zinc contamination issue with the filters used in the field. Environment Canada has since added a pre-rinse procedure at the laboratory to ensure that the filters do not contaminate the samples.

St. Croix River at St. Stephen, New Brunswick

The range of concentrations for each parameter measured is shown on the next page alongside their applicable guideline for the protection of aquatic life. Four parameters exceeded their applicable guideline.

On January 31, 2007, the dissolved Zinc concentration exceeded the guideline but the extractable Zinc concentration for this same sample was 10 times lower. This suggests field contamination of the dissolved Zinc result and this measurement was thus not included in the yearly range.

On May 9, 2007, the extractable Zinc concentration was above the guideline. The dissolved Zinc result for this same sample, while not above the guideline, was also elevated in this sample.

On October 24, 2007, the phosphorous result was above the guideline. In seven out of the 11 samples collected in 2007, extractable Aluminium was above the guideline.

Results from 2007 Monthly Grab Samples

Parameter	Units	Forest City, ME	St. Stephen, NB	Aquatic Life Guidelines[4]
ALKALINITY TOTAL CACO3	MG/L	<20.0 - <20.0	<20 - <20	
ALUMINIUM Diss.	UG/L	2.6 - 10.9	36.9 - 96	100
ALUMINIUM Extr.	UG/L	6.4 - 16.4	50.5 - **130.8**	100
ANTIMONY Diss.	UG/L	<0.1 - <0.1	<0.1 - 0.1	
ANTIMONY Extr.	UG/L	<0.1 - <0.1	<0.1 - <0.1	
ARSENIC Diss.	UG/L	0.2 - 0.4	0.1 - 0.5	5
ARSENIC Extr.	UG/L	0.2 - 0.4	0.2 - 0.6	5
BARIUM Extr.	UG/L	1.9 - 2.2	3.7 - 15.9	
BERYLLIUM Extr.	UG/L	<0.1 - <0.1	<0.1 - <0.1	
CADMIUM Diss.	UG/L	<0.1 - <0.1	<0.1 - <0.1	0.005[5]
CADMIUM Extr.	UG/L	<0.1 - <0.1	<0.1 - <0.1	0.005[5]
CALCIUM Diss.	MG/L	4.2 - 4.55	2.4 - 6.82	
CARBON DISSOLVED ORGANIC	MG/L	2.9 - 4.5	5.6 - 11.5	
CARBON, TOTAL IN-ORG	MG/L	2.7 - 3.1	1.8 - 4.3	
CARBON, TOTAL ORGANIC	MG/L	3.6 - 4.5	6.2 - 9	
CHLORIDE	MG/L	1.5 - 1.8	2.2 - 9.8	150[3]
CHROMIUM Diss.	UG/L	<0.4 - 0.5	<0.1 - 0.4	8.9
CHROMIUM Extr.	UG/L	<0.4 - <0.4	0.4 - 0.6	8.9
COBALT Diss.	UG/L	<0.1 - <0.1	<0.1 - <0.1	

COBALT Extr.	UG/L	<0.1 - <0.1	<0.1 - 0.1	
COLOUR	HAZENUNI	7 – 17	21 - 65	
COPPER Diss.	UG/L	<0.2 – 0.4	0.2 - 0.8	2[5]
COPPER Extr.	UG/L	<0.2 - 0.4	0.3 - 0.7	2[5]
GRAN ALKALINITY	MG/L	10.05 - 11.33	6.25 - 16.42	
IRON Diss.	MG/L	<0.02 - <0.02	0.05 - 0.14	0.3
IRON Extr.	MG/L	<0.02 - <0.02	0.1 - 0.24	0.3
LEAD Diss.	UG/L	<0.1 - <0.1	<0.1 - 0.3	1[5]
LEAD Extr.	UG/L	<0.1 - <0.1	0.1 - 0.3	1[5]
MAGNESIUM Diss.	MG/L	0.62 - 0.66	0.54 - 0.86	
MANGANESE Diss.	UG/L	0.4 - 8.1	16.8 - 58.1	
MANGANESE Extr.	UG/L	3.2 - 8.2	24.3 - 80.8	
MOLYBDENUM Extr.	UG/L	<0.1 - <0.1	<0.1 - <0.1	73
NICKEL Diss.	UG/L	0.1 – 0.3	0.3 - 0.6	25[5]
NICKEL Extr.	UG/L	<0.1 - 0.2	0.3 - 0.6	25[5]
NITRATE-NITROGEN	MG/L	<0.01 - <0.02	<0.01 - 0.14	2.9
NITROGEN TOTAL	MG/L	0.16 - 0.22	0.24 - 0.4	
NITROGEN TOTAL Diss.	MG/L	0.12 - 0.21	0.22 - 0.47	
PH	PH UNITS	7.26 - 7.48	6.9 - 7.57	6.5-9
PHOSPHOROUS	MG/L	0.004 - 0.007	0.012 - **0.045**	0.03[2]
POTASSIUM Diss.	MG/L	0.3 - 0.34	0.35 - 1.47	
SILVER Extr.	UG/L	<0.1 - <0.1	<0.1 - <0.1	0.05
SODIUM DISSOLVED	MG/L	1.38 - 1.54	1.96 - 11.24	
SPECIFIC CONDUCTIVITY	US/CM	34.5 – 37	27.8 - 101.5	
STRONTIUM Extr.	UG/L	20.9 - 24.6	11.7 - 28.9	
SULPHATE	MG/L	2.2 - 2.4	2.47 - 12.57	
TITANIUM Extr.	UG/L	<0.1 - 0.3	0.6 - 1.9	
TOTAL SUSPENDED SOLIDS	MG/L	<1.0 - 52.5	<2.0 - 3.3	
TURBIDITY	NTU	0.2 - 0.6	0.6 - 3.7	
VANADIUM Diss.	UG/L	<0.1 - 0.3	0.2 - 0.7	
VANADIUM Extr.	UG/L	<0.1 - 0.1	0.3 - 0.7	
ZINC Diss.	UG/L	<0.3 – 0.9	1.2 – 6.3	7.5
ZINC Extr.	UG/L	<0.3 - 1.1	0.3 - 10.8	7.5

1. *http://www.ccme.ca/assets/pdf/aql_summary_7.1_en.pdf*

2. Dodds, W.K., J.R. Jones, and E. Welch. 1998. Suggested classification of stream trophic state: distributions of temperate stream types by chlorophyll, total nitrogen, and phosphorus. Water Research, 32: 1455-1462.

3. BCMOE. 2001. *British Columbia approved water quality guidelines (criteria) 1998 edition*. Environmental Protection Division, British Columbia Ministry of Environment. Updated August 24, 2001.

4. All values refer to the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines For the Protection of Aquatic Life Unless Otherwise Indicated.

5. Guideline value is calculated based on hardness as per CCME protocol

4.0 STATUS OF POLLUTION ABATEMENT

4.1 Maine

Calais, Baileyville, Domtar

Calais is continuing with their sewage treatment plant upgrades which are focusing on a Combined Sewer Overflow (CSO) abatement program. Baileyville is continuing with their storm water separation upgrades. Domtar shut down their paper machines and is only pulping at this time. This has reduced their discharge flow and loading to the River.

4.2 New Brunswick

McAdam

The McAdam WWTP continues to minimize phosphorous levels in the effluent (alum addition) which is more successful in summer than winter prior to discharge to Waklehegan Lake. The Clean Water Grant Studies of 2004 – 2005 found a number of factors that contribute to the high nutrient levels in the lake. The municipality has a number of combined sewers that contribute to the by- passing/overflows of raw sewage to the receiving waters that will need to be addressed in the near future.

St. Stephen

The new aerated lagoon along Dennis Stream operates within the annual effluent limits of 20 mg/l L for BOD and SS and is equipped with disinfection. The facility treats the municipal wastewater as well as process water from Ganong's.

Champlain Industrial Park

The extended aeration facility treats the domestic wastewater of approximately 85 employees as well as the industrial wastewater from the industrial park. The facility discharges treated effluent to Passamaquoddy Bay near the Waweig River estuary. The existing facility is at capacity and additional users will not be added unless the facility is upgraded. The facility has had the sludge return system completely replaced in 2007 which has improved plant performance and improved SS results.

East Coast Village MHP

The facultative lagoon treats the domestic wastewater of the 58 mobile homes in the park. The facility discharges treated effluent to the marshy headwaters of Meadow Brook. The receiving stream is not adequate to receive the wastewater. Eventually the

services from the municipality of St. Stephen may be extended to the mobile home park.

DFO Biological Station
The Fisheries Biological Station currently has an extended aeration system to treat the domestic waste from the office buildings of DFO (Fisheries and Oceans Canada). DFO is currently planning replacement of the main laboratory and office space at the site which will also include connection to the services from the municipality of St. Andrews. This project has been in the planning stage for some time and final decisions are expected within the next year.

Huntsman Marine Science Centre
The Huntsman Marine Science Centre has a trickling filter wastewater treatment system to service the laboratory and office complex. This facility may also connect to St. Andrews in the future.

Oak Bay Park
The Oak Bay Campground uses a trickling filter system to treat the domestic wastewater from 110 campsites prior to discharging the treated disinfected effluent to Oak Bay. This system does not meet the effluent requirements of the NB Department of the Environment and lessee has completed an assessment of the treatment facility and plans to meet with the Department in April to discuss the report and recommendations.

5.0 FISHERIES

5.1 Anadromous Fisheries

Alewives (*Alosa pseudoharengus*) and Atlantic salmon (*Salmo salar*) entering the St. Croix River have been monitored at a research trap at the Milltown dam since 1981. This head-of-tide dam is owned by the New Brunswick Power Corporation (NB Power). The fishway and research trap are located on the New Brunswick side of the structure and are under the jurisdiction of the Canada Department of Fisheries & Oceans (DFO).

In 2007, due to funding constraints, the research trap was operated only during the alewife run in May-June. The St. Croix International Waterway Commission (Commission), in partnership with the Atlantic Salmon Federation (ASF), carried out this

work under cooperative agreements with DFO, the U.S. Fish & Wildlife Service (USFWS) and the Maine Department of Marine Resources (DMR).

A late 2007 spring freshet extended the usual inundation of the lower end of the Milltown fishway and caused baffle damage that delayed the fishway opening by nearly two weeks. NB Power was able to repair the fishway, replacing 10 aging baffles with aluminum, by the second week of May and flooded the fishway late on May 14. The research trap was activated early on May 15 and operated until June 27 enumerating alewife and other species.

During the six weeks of trap operation (May 15 – June 27, 2007) a total of 1,294 alewife, ten white sucker, and three smallmouth bass were recorded at the trap. The 2007 St. Croix alewife run was a nearly 90% reduction from returns in 2005 and 2006. 2007 had the second lowest return since monitoring began in 1981, and the run was below the 10-year (1997-2006) average of 47,550 and 20-year (1987-2006) average of 536,144 fish. DMR determined that approximately 57% of the run were likely the offspring of the 2002 spawning cohort of only 900 fish.

The research trap was lifted on June 27, the final day for alewife recoveries in all but one of the last 20 years (in 2007, only 1 fish entered the trap after June 20). NB Power continued to operate the fishway, without monitoring, until mid fall.
Although no Atlantic salmon passed through the fishway before June 27, one or more likely entered undocumented later in the summer. An 87.5 cm male salmon was recovered, dead, from the dam intake racks on November 19. It was subsequently determined that the fish was aquaculture escapee.

5.2 Shellfish Harvesting

Since briefly being opened to shellfishing under a conditional harvest plan in 1999, Oak Bay was not reopened in subsequent years. However, a three year MOA (2005-2008) was signed in November, 2005 with a view to reactivate a conditionally approved shellfishery along the eastern portion of the bay beginning in 2006. The latter area was opened for harvesting the first week of March, 2006 but was closed soon after due to excessive rainfall and/or elevated bacterial densities in clams.

Depuration harvesting began in 2005 within the western portion of the bay and continued into 2006. No depuration activity occurred in 2007.

Environment Canada sampled the waters of Oak Bay and of the St. Croix River twice in 2006 and 3 times in 2007. The survey results indicate that bacteriological water quality profile is consistent with that observed during the previous survey of the area in 2000 and 2003. No changes in shellfish area classification should, therefore, be expected.

6.0 WATERSHED STUDIES

In 2007 Board special study efforts included the following:

1.) The Board's GIS Atlas mapping project was brought to conclusion in 2007. Four thematic maps of the St. Croix River Watershed were created in a common coordinate system: Environmental Management, Land Use/Land Cover, Recreational Resources, and a St. Croix River Base Map. These maps display the watershed layers at a scale of 1:100,000. The maps are available in CD and at the Board's website.

2.) The Board participated in USGS led team of multiple stakeholders from the U.S. and Canada to develop a harmonized data set of international watershed boundaries (IWBD) and watershed stream network (IHD). This is one of the first efforts to harmonize this data across an international boundary. The data product was presented and discussed with St. Croix River watershed stakeholders at a Workshop in St. Andrews in May 2007. USGS is finalizing the product for distribution on CD.

3.) The Board reviewed the completed Reservoir Simulation (ResSim) computer model developed for the St. Croix and worked continued on development of the rainfall/runoff computer model for the St. Croix (HEC-HMS).

4.) Board developed a scope of work for State of the Watershed report, reviewed the suggested indicators and report outline, and provided information to the Contractor engaged to prepare the draft report (FB Environmental, Portland, Maine).

7.0 OTHER DEVELOPMENTS IN THE WATERSHED

7.1 FERC update

Domtar Maine is the owner of the Forest City Dams and the West Brach Dams on the St. Croix River. The Forest City Dam crosses the international boundary. The West Grand Dam is located in Maine. Both projects are licensed with U.S. Federal Energy Regulatory Commission (FERC). These licenses have expired and Domtar in March 2006 filed with FERC to renew. In May 2006 FERC approved the use of the traditional licensing process for both these projects. In 2007 Domtar worked on studies related to the re-licensing efforts. Presently, Domtar is compiling study and other information into a draft application to be filed this spring/early summer. It is anticipated that a FERC license could be issued before the end of 2009 or if delays occur in 2010.

7.2 Proposed LNG Facilities in Maine

Two liquefied natural gas (LNG) proposals are in review by U.S. federal and state agencies. The lead federal agency is the Federal Energy Regulatory Commission (FERC). The lead state agency is the Maine State Board of Environmental Protection.

Downeast LNG Inc., New York, is proposing to develop a facility at Robbinston. Robbinston is located near the mouth of the St. Croix River and across the river from St. Andrews, New Brunswick. At land they have optioned, immediately off Route 1 at Robbinston, they propose a 3,862' long terminal pier at the mouth of the St. Croix River. Gas will be off loaded from the pier to one or two upland holding tanks and from there will be transported via a ~ 31 mile long send out pipeline to the Maritimes line. The location of the Maritimes send out line is under study. The applicant has proposed a suggested route to FERC that includes a directional drill under the St. Croix River from Milltown to Baring and plans to resubmit their State application with a new route in 2008.

Quoddy Bay LLC, Oklahoma is proposing the development of the facility at Split Rock in the Pleasant Point area. Pleasant Point is located in the Western Passage, the southern entrance to Passamaquoddy Bay. At land leased from the Passamaquoddy Tribal Nation, they propose a 1500'+ long terminal pier in Passamaquoddy Bay. Gas off loaded from the pier will be pumped from the immediate upland to holding tanks approximately 4000' to the west. From there it will be transported ~35 miles via a new send out pipeline to connect to the existing Maritimes & Northeast pipeline that extends

southwest through the State. The application process at FERC and Maine State Board is on-going for this proposed project.

In a letter dated April 7, 2006, the Canadian Ambassador to the U.S. conveyed his country's strong concerns with any passage of LNG vessels through Head Harbor Passage to access either LNG site. The U.S. State Department has engaged Canada on this issue. The U.S. Coast Guard is addressing navigation, piloting, and transportation safety issues. Both projects would require Maritimes to expand their pipeline to handle the added gas supply.

ACKNOWLEDGEMENTS

The International St. Croix River Watershed Board gratefully acknowledges the valuable input and efforts in support of this report provided by the following groups/ individuals and without which the preparation of this report would not be possible:

Lee Sochasky – St. Croix International Waterway Commission
Stephen Drost – New Brunswick Department of the Environment
Ed Logue – Maine Department of Environmental Protection
Paul Noseworthy – Environment Canada
James Caldwell – U.S. Geological Survey
Donald Bourgeois – Environment Canada
Peter Johnson - Environment Canada
Barbara Blumeris – U.S. Army Corps of Engineers

APPENDIX 1

SUMMARY - ORDERS OF APPROVAL & BASIN MAP

SUMMARY - ST. CROIX RIVER ORDERS OF APPROVAL

INTERNATIONAL JOINT COMMISSION

9 November, 1915- For approval of a dam and power canal and the obstruction, diversion and use of the waters of the St. Croix River at Grand Falls in the State of Maine and the Province of New Brunswick: Maximum elevation 202.0 feet m.s.l.

3 October, 1923- Erection and repairs of fishways in the St. Croix River.

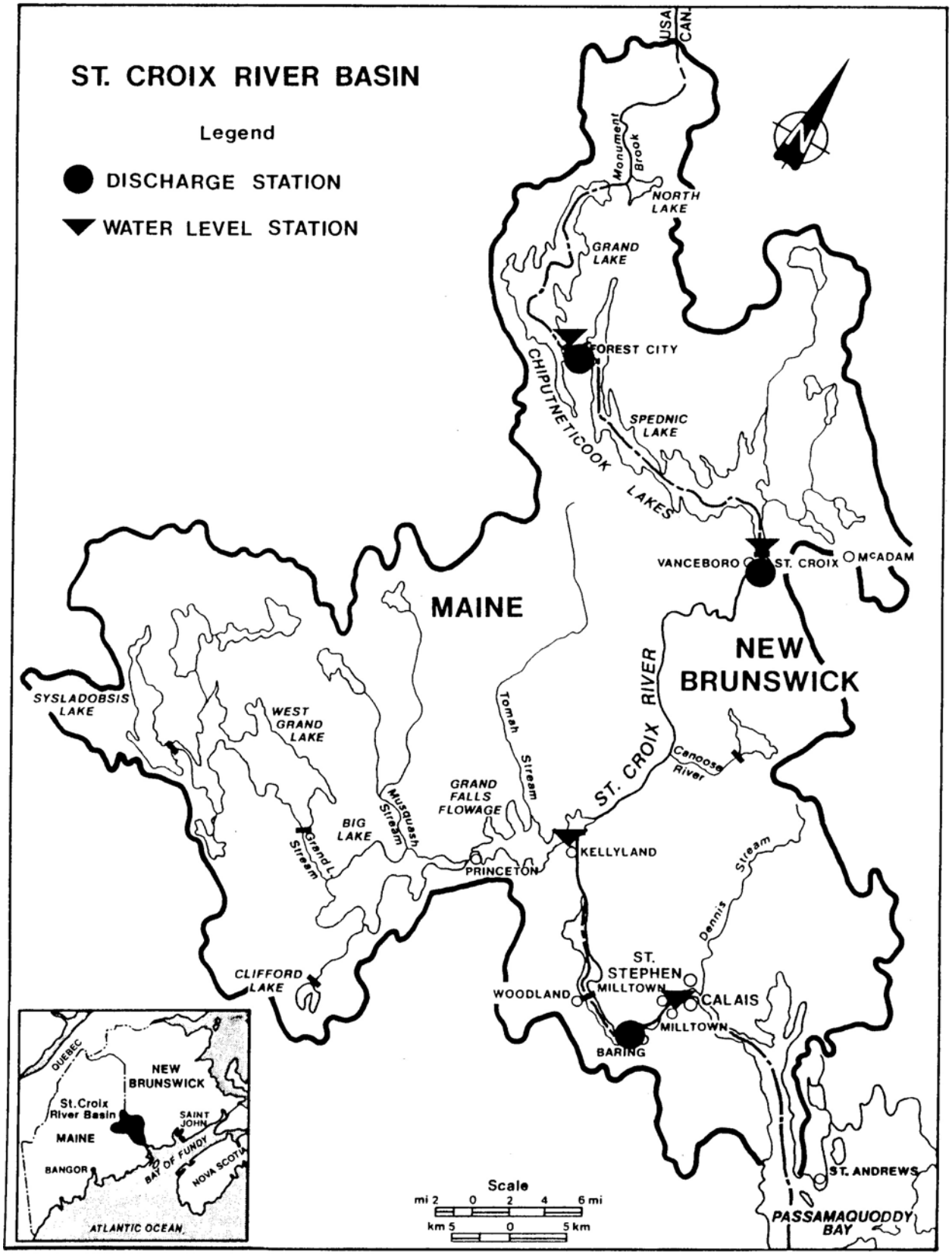
6 October, 1931- For the obstructions of the waters of the St. Croix River at Grand Falls in the State of Maine and the Province of New Brunswick. Increase in elevation to 203.5 feet m.s.l.

2 October, 1934- For the reconstruction of a dam across the St. Croix River from Milltown in the Province of New Brunswick to Milltown in the State of Maine.

15 October, 1965- For the construction of a storage dam in the St. Croix River at Vanceboro, Maine and St. Croix, New Brunswick:

Discharge from Spednic Lake-	200 cfs (5.66 m3\s) minimum
Elevation of Spednic Lake-	385.86 feet (117.611 metres) maximum
Between 1 October and 30 April-	371.50 feet (113.233 metres) minimum
Between 1 May and 30 September-	376.50 feet (114.759 metres) minimum
Discharge from East Grand Lake-	75 cfs (2.12 m3\s) minimum
Elevation of East Grand Lake-	434.94 feet (132.571 metres) maximum 427.94 feet (130.438 metres) minimum

16 November, 1982- For the reconstruction of the diversion dike in the St. Croix River near Baileyville, Maine.


ST. CROIX RIVER BASIN
Legend
DISCHARGE STATION
WATER LEVEL STATION
USA
CAN.
Monument Brook
NORTH LAKE
GRAND LAKE
FOREST CITY
CHIPUTNETICOOK LAKES
SPEDNIC LAKE
VANCEBORO
ST. CROIX
McADAM
MAINE
NEW BRUNSWICK
ST. CROIX RIVER
SYSLADOBSIS LAKE
WEST GRAND LAKE
Tomah Stream
Canoose River
GRAND FALLS FLOWAGE
Musquash Stream
BIG LAKE
Grand L. Stream
PRINCETON
KELLYLAND
Dennis Stream
CLIFFORD LAKE
ST. STEPHEN
MILLTOWN
WOODLAND
CALAIS
MILLTOWN
BARING
ST. ANDREWS
PASSAMAQUODDY BAY
Scale
mi 2 0 2 4 6 mi
km 5 0 5 km
QUEBEC
NEW BRUNSWICK
St.Croix River Basin
SAINT JOHN
MAINE
BAY OF FUNDY
BANGOR
NOVA SCOTIA
ATLANTIC OCEAN

APPENDIX 2

MILLTOWN, GRAND FALLS, VANCEBORO AND FOREST CITY DAMS

GENERAL DESCRIPTION OF MILLTOWN,
GRAND FALLS, VANCEBORO & FOREST CITY DAMS

Milltown Dam & Fish Passage Facilities

The Milltown facility is located in Milltown, New Brunswick across the river from Calais, Maine and approximately one mile upstream from the international bridge between Calais and St. Stephen, New Brunswick. It consists of a powerhouse with 7 hydroelectric generating units, an upstream fish passage facility that goes from the lower pool around the left side of the powerhouse (looking downstream) to the upper pool. The spillway is located to the right of the powerhouse and has 6 openings with large wooden stop logs that can be removed or installed via a railed vertical lifting mechanism. Other sections of the spillway have been equipped with wooden flashboards that are meant to fail and increase the spillway's capacity during high flows. At the far end of the spillway, running perpendicular from the spillway to the right bank, is a gatehouse with 5 vertical lift gates used to control the forebay elevation. A wooden-chute downstream fish passage facility is located in the area between the spillway and the gatehouse.

Grand Falls Dam & Fish Passage Facilities

Grand Falls Flowage Dam is approximately 8 miles upstream of the town of Baileyville, Maine and can store approximately 88,000 acre-feet of water. This dam has 9 steel tainter gates on the right of the spillway, and a concrete emergency spillway approximately 800 to 850 feet in length running from the concrete gatehouse and ending at the left shoreline. The gatehouse is located between the gates and the emergency spillway. A floating walkway allows access to the entire upstream length of the spillway. Lake levels are recorded by a gauging station on the right bank of the dam.

The downstream side of the emergency spillway/dam has a concrete face sloping at an angle of approximately 45 degrees, and supported by concrete buttresses along its length. The space between these buttresses has been enclosed with a pressure-treated timber log system. This log system was installed to minimize the temperature differential in the downstream face area during freezing conditions to reduce possible degradation of the concrete face.

Water is impounded behind Grand Falls Dam and delivered to the hydroelectric plant and fish passage facilities via a channel on the right side of the impoundment, approximately 1000 feet upstream of the dam.

Water flows to the turbines via three steel penstocks. A Denil fishway is located on the side of the hydroelectric plant. It is a concrete structure with a series of bays equipped with guide slots that allow for the installation of wooden V notched weirs to modify flows to levels acceptable for fish migration.

Vanceboro Dam & Fish Passage Facilities

Vanceboro Dam consists of an earth embankment with a concrete gate structure and with rock filled gabions on the upstream face. The concrete structure is 69 feet (21 m) long, and contains a fishway and two tainter gates, each 22'-6" (6.9 m) wide by 14'-6" (4.4 m) high. These gates are operated by electrical cable lifts. The gate structure is located on the International Boundary line between the United States and Canada. Gate sill elevation is at 371.5 feet (113.23 m) NGVD. Normal full pond elevation is at 385.86 feet (117.61 m), with an impounded surface of 20,870 acres (84.5 km2). There are approximately 221,200 acre-feet (0.27 km3) of useable storage at normal full pond. The fishway is a vertical slot fish ladder and is on the left side of the dam and consists of 10 bays or pools. There are 5 vertical lift wooden gates to regulate flow through the ladder. The trash rack on the upstream face of the fish passage consists of steel bars spaced approximately 1 foot in the horizontal direction and 3 feet in the vertical.

Forest City Dam & Fish Passage Facilities

Forest City Dam is a small timber crib rock filled structure with three wooden sluice gates operated with a wooden ratchet lever system that lifts the gates using a steel cable or steel chain. These gates have openings of 8'-4" (2.54 m) and a sill elevation of 427.94 feet (130.44 m) NGVD. Full pond elevation is at elevation 434.94 feet (132.57 m) NGVD, and impounds 105,300 acre-feet (0.130 km3) of water. The fishway is located on the left side (facing downstream) of the dam and consists of timber baffle system with an upstream timber trash rack. A gauging station, located immediately downstream on the right bank, measures stage, which is converted to discharge from East Grand Lake through use of a rating table. A second gauging station upstream measures the lake's water level.

FACITILY SITE VISITS IN 2007

Board members met with Domtar Officials in the Woodland Mill at Baileyville, Maine on the morning of the August 29, 2007 and then visited the dam sites (Forest City, Vanceboro, and Grand Falls). Board members met with New Brunswick Power official on the afternoon of August 29th and visited the Milltown Dam.

Participants included in the Domtar meeting and facilities visits are shown below:

Name	Position/Representing
Allen Olson*	IJC Commissioner/ U.S. Section
Irene Brooks*	IJC Commissioner/ U.S. Section
Jack Blaney*	IJC Commissioner/ Canadian Section
Bill Appleby	St. Croix Board, Co-Chair, Canadian Section
Bill Ayer	St. Croix Board, Canadian Section
Col. Curtis Thalken	St. Croix Board, Co-Chair, U.S. Section
Carol Wood*	St. Croix Board, U.S. Section
Bob Lent *	St. Croix Board, U.S. Section
Charles LeBlanc	Environment Canada
Peter Johnson	Secretary, St Croix Board, Canadian Section
Barbara Blumeris	Secretary, St. Croix Board, U.S. Section
Scott Beal *	Domtar Industries, Inc.
Donna Adams	Domtar Industries, Inc.
Jay Beaudoin	Domtar Industries, Inc
Jeff Babcock	New Brunswick Power Co.
Frank Bevacqua	IJC staff
Willem Brakel	IJC Staff
Tom McAuley	IJC staff

* Meeting only, did not attend facility site visits.

General Comments on Facilities

Forest City Dam. Domtar reported that some repairs to the fishway were made in 2007. These included adding a dead man to prevent leaning of fish way and providing a new trash rack at inlet to the fishway.

Vanceboro Dam. Generally dam and fishway appear to be in good condition. Domtar reported that some new stone was placed on the embankment slope on the Canadian/left side.

Grand Falls Dam. The Board visited the Grand Falls Dam and toured the site. The Board walked through the interior of the Dam on the elevated walkway and noted as in the past that several of the Bays exhibit seepage. This seepage was noted verbally to the Domtar representative. Domtar is responsible for inspections of the facility and implementing any needed actions. Also, the Maine Emergency Management Agency inspects the Dam periodically.

Milltown Dam. During the Board's annual site visits, it has been observed that there is a crack in the floor of the powerhouse. This is not a new issue as the crack has been apparent since the 1980s. However, about three years ago NB Power reported to the Board that there was increased movement in the crack. At that time NB Power took actions to assess the situation and established initial procedures to prevent further movement of the wall. NB Power set up temporary heated hoarding on the face of the wall to prevent freezing and thawing action and has continued to use this method in 2007. NB Power is investigating permanent hoarding to replace the temporary hoarding. NB power will continue to monitor the wall for any movement.

APPENDIX 3

HYDROGRAPHS

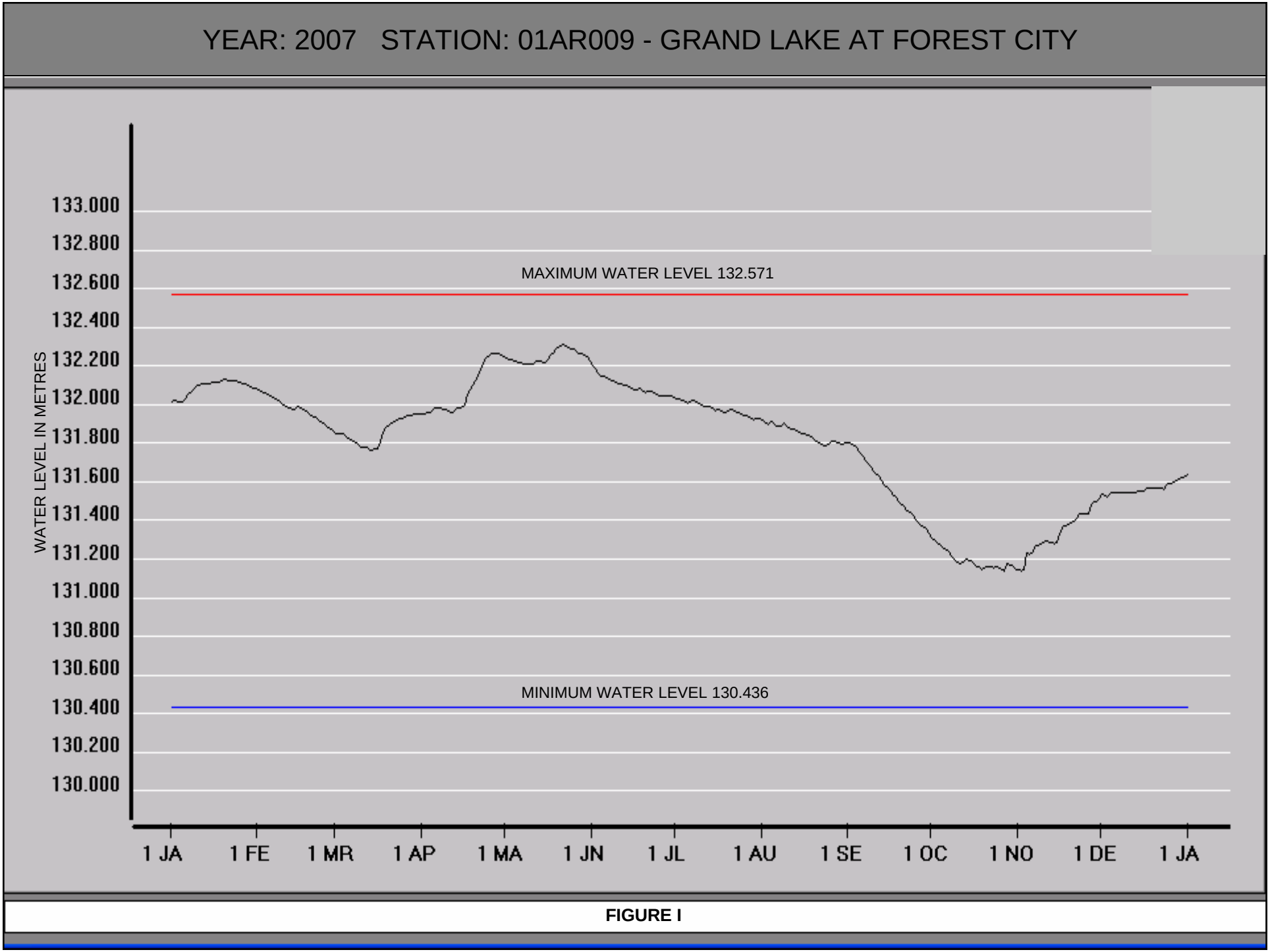

YEAR: 2007 STATION: 01AR009 - GRAND LAKE AT FOREST CITY
WATER LEVEL IN METRES
133.000
132.800
132.600
132.400
132.200
132.000
131.800
131.600
131.400
131.200
131.000
130.800
130.600
130.400
130.200
130.000
MAXIMUM WATER LEVEL 132.571
MINIMUM WATER LEVEL 130.436
1 JA
1 FE
1 MR
1 AP
1 MA
1 JN
1 JL
1 AU
1 SE
1 OC
1 NO
1 DE
1 JA

FIGURE I

YEAR: 2007 STATION: 01AR011 FOREST CITY STREAM BELOW FOREST CITY DAM

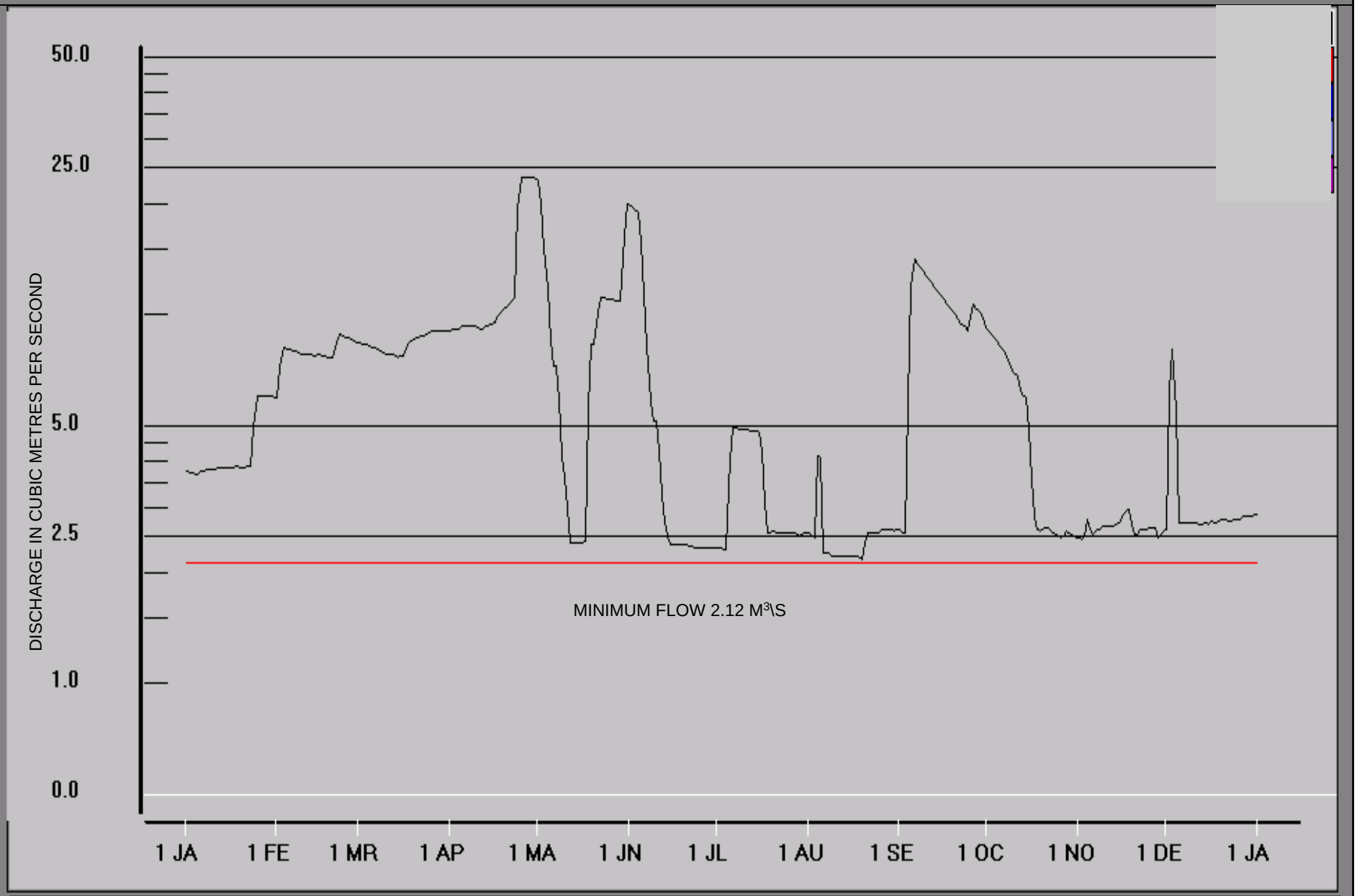


FIGURE II

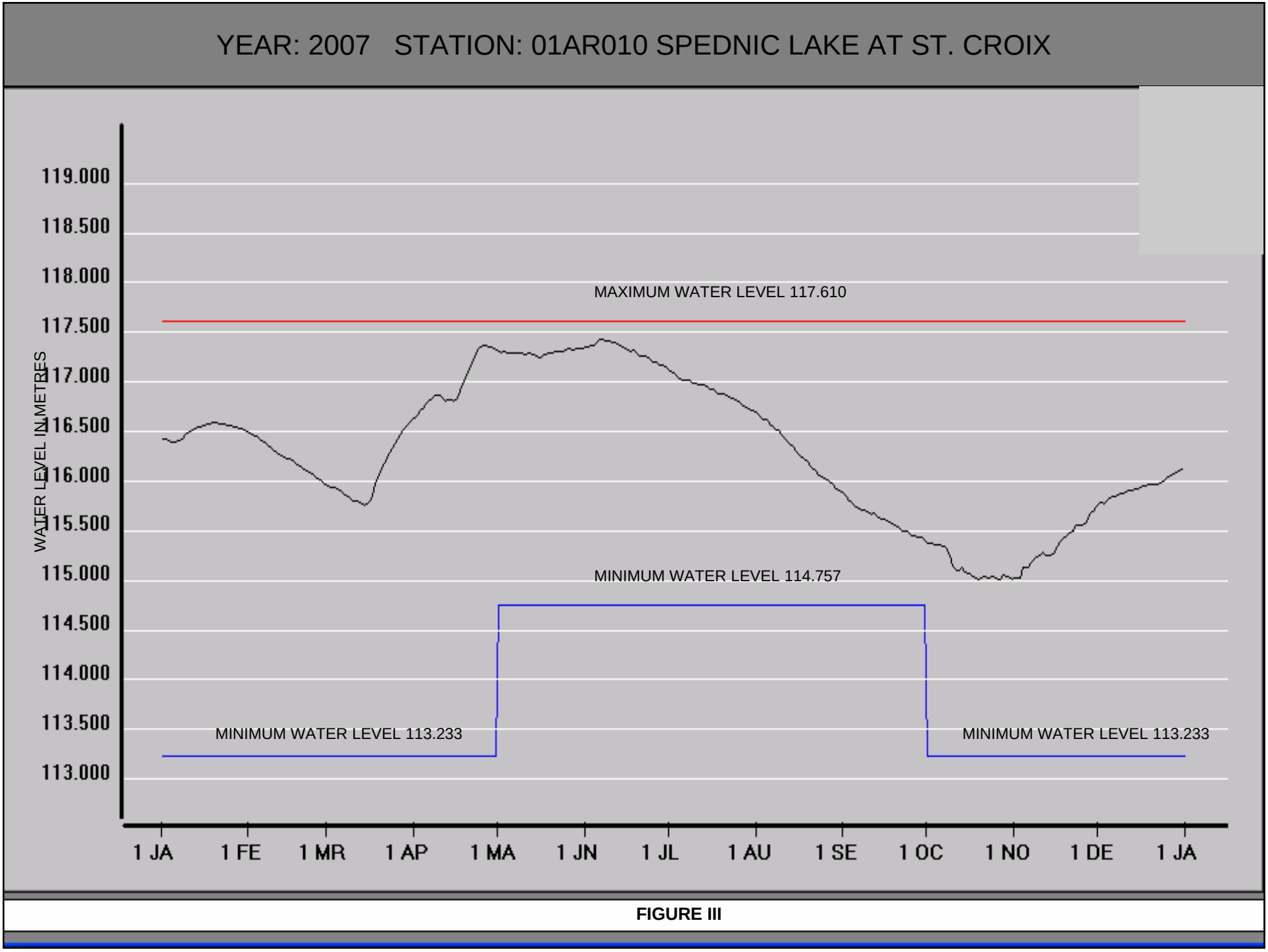

YEAR: 2007 STATION: 01AR010 SPEDNIC LAKE AT ST. CROIX
WATER LEVEL IN METRES
119.000
118.500
118.000
117.500
117.000
116.500
116.000
115.500
115.000
114.500
114.000
113.500
113.000
MAXIMUM WATER LEVEL 117.610
MINIMUM WATER LEVEL 114.757
MINIMUM WATER LEVEL 113.233
MINIMUM WATER LEVEL 113.233
1 JA
1 FE
1 MR
1 AP
1 MA
1 JN
1 JL
1 AU
1 SE
1 OC
1 NO
1 DE
1 JA

FIGURE III

YEAR: 2007 STATION: 01AR004 – ST. CROIX AT VANCEBORO

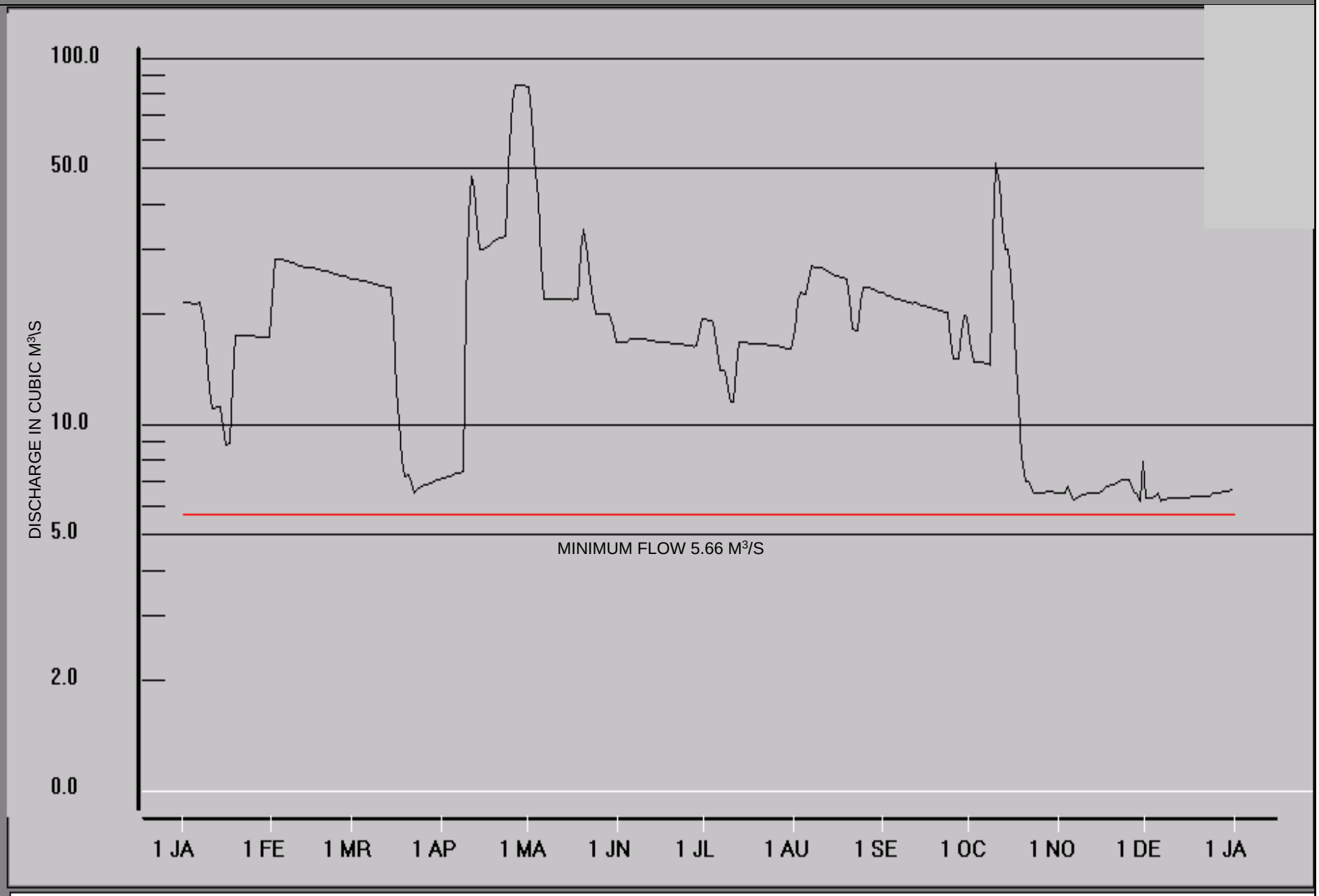


FIGURE IV

YEAR: 2007 STATION: 01AR013 GRAND FALLS FLOWAGE AT GRAND FALLS

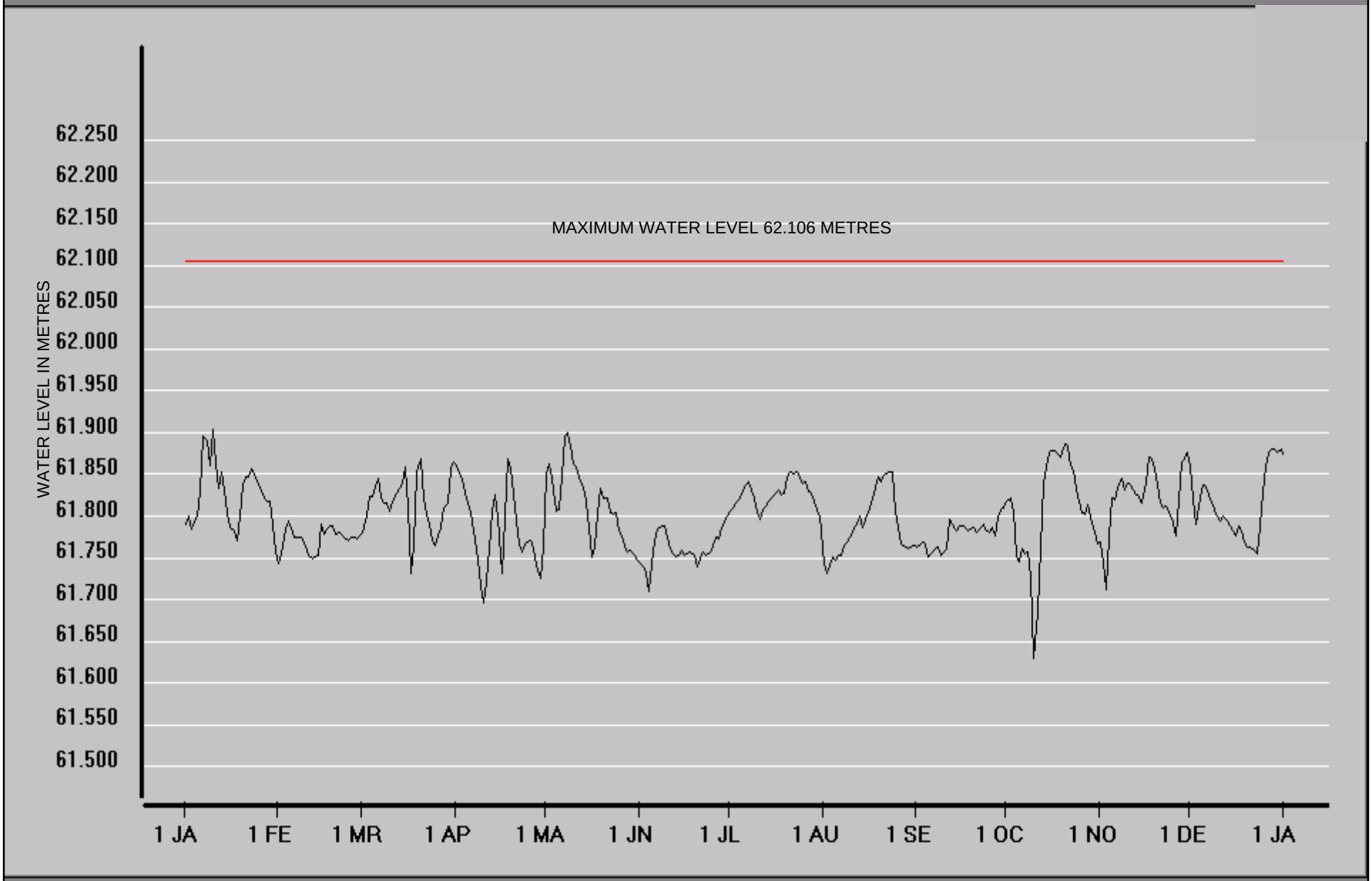


FIGURE V

YEAR: 2007 STATION: 01AR005 ST. CROIX AT BARING

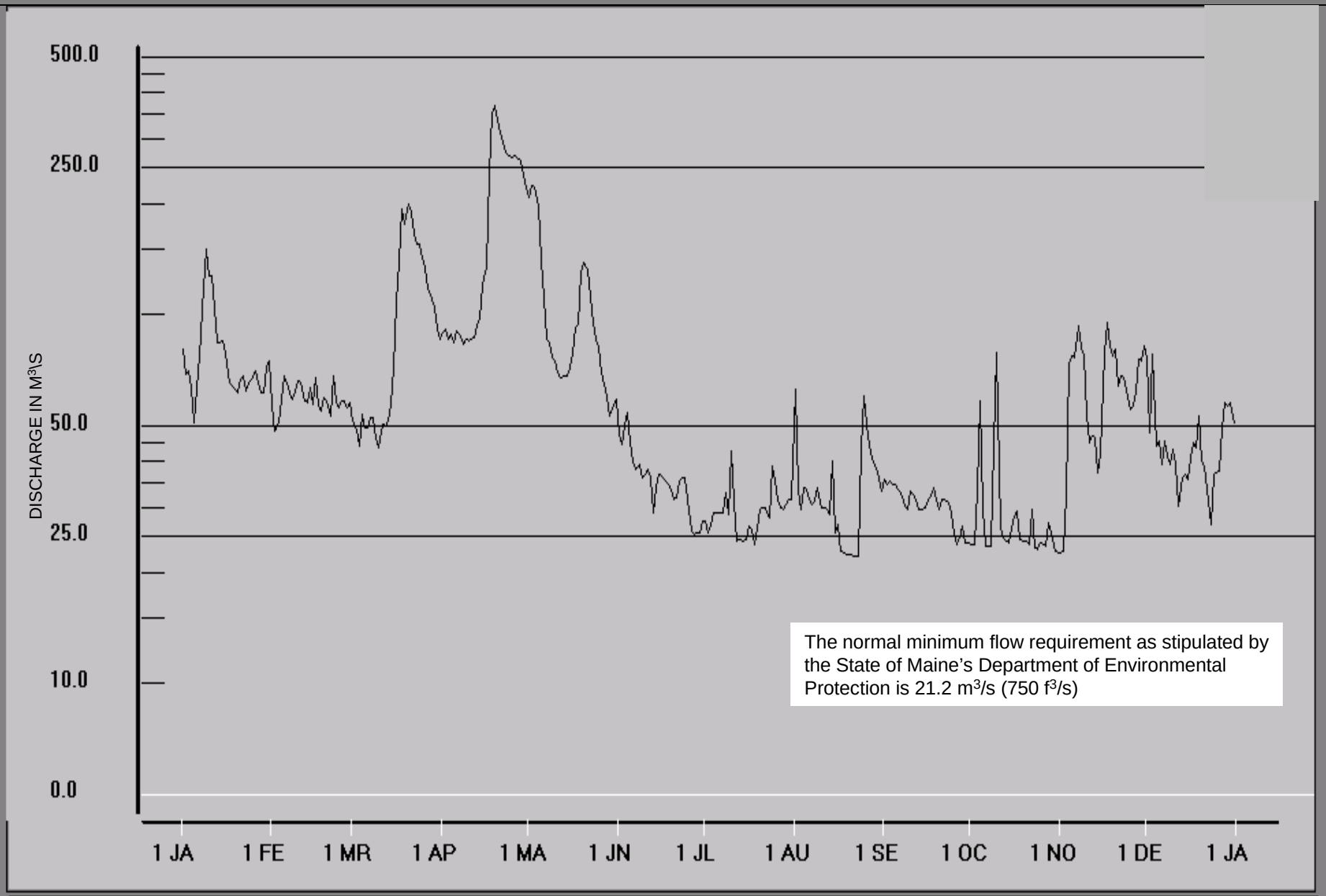


FIGURE VI

YEAR: 2006 STATION: 01AR000 - MILLTOWN

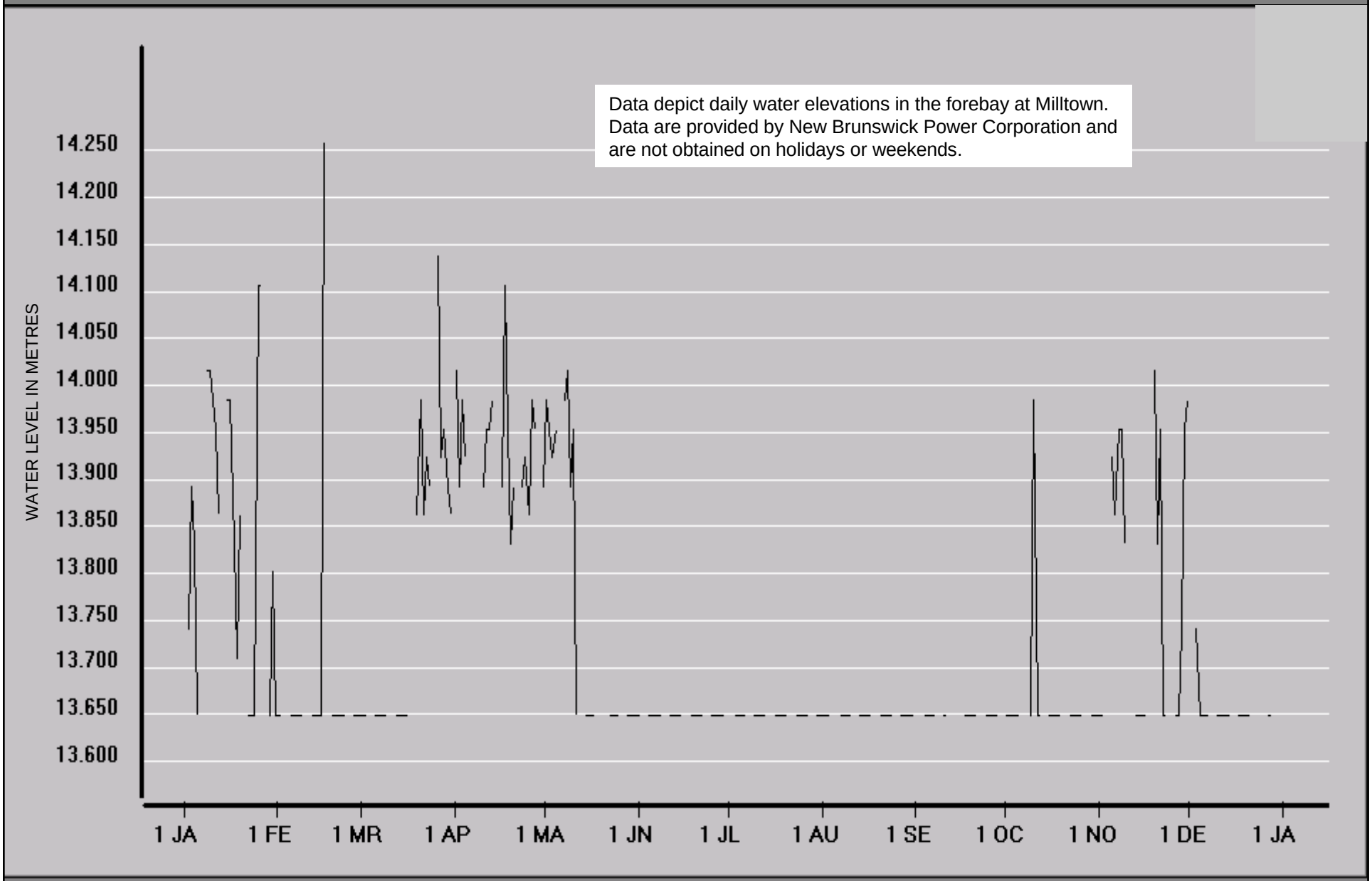
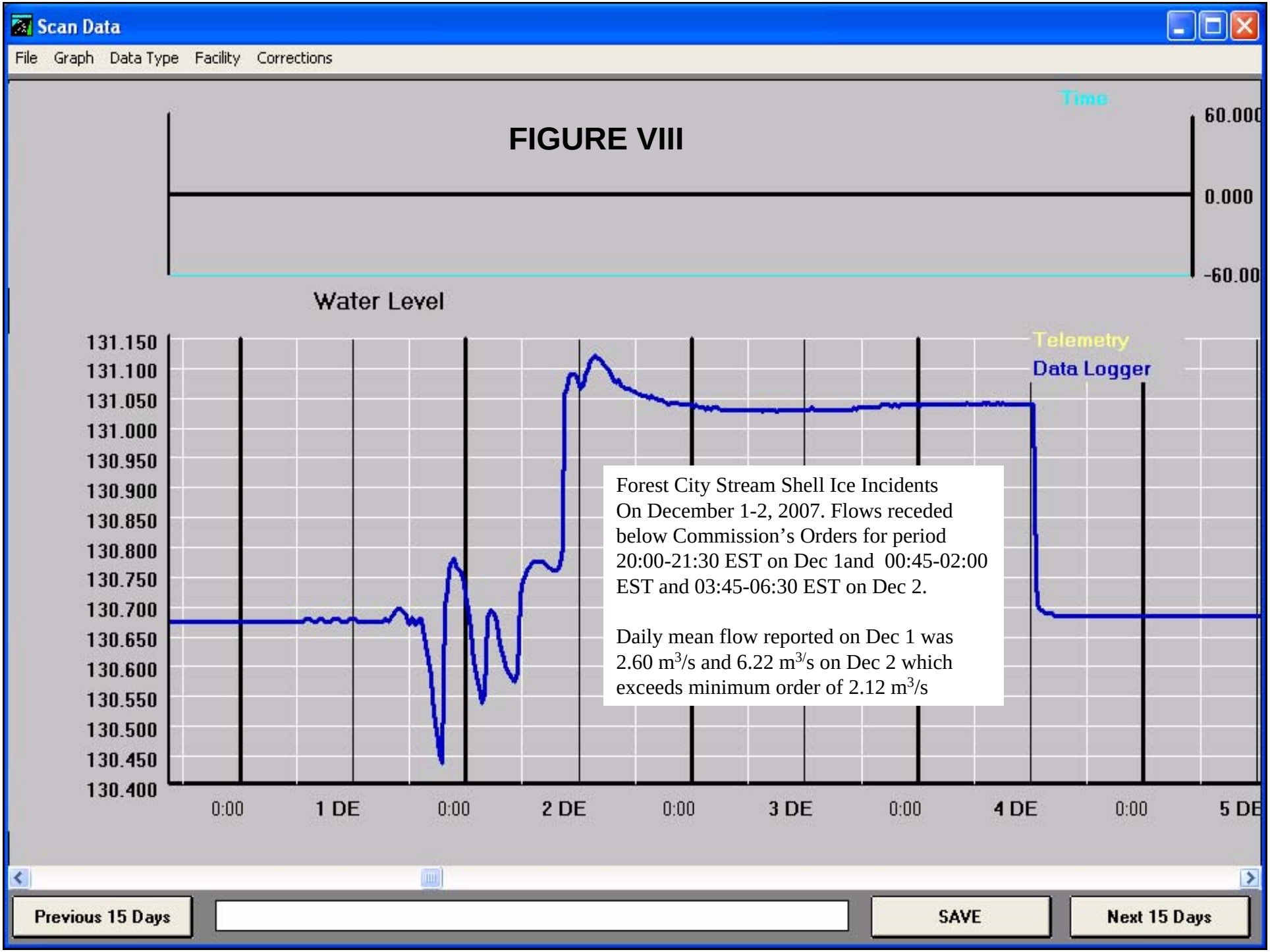


FIGURE VII


Scan Data
File Graph Data Type Facility Corrections
FIGURE VIII
Time
60.000
0.000
-60.00
Water Level
131.150
131.100
131.050
131.000
130.950
130.900
130.850
130.800
130.750
130.700
130.650
130.600
130.550
130.500
130.450
130.400
Telemetry
Data Logger
Forest City Stream Shell Ice Incidents On December 1-2, 2007. Flows receded below Commission's Orders for period 20:00-21:30 EST on Dec 1and 00:45-02:00 EST and 03:45-06:30 EST on Dec 2.
Daily mean flow reported on Dec 1 was 2.60 m3/s and 6.22 m3/s on Dec 2 which exceeds minimum order of 2.12 m3/s
0:00
1 DE
0:00
2 DE
0:00
3 DE
0:00
4 DE
0:00
5 DE
Previous 15 Days
SAVE
Next 15 Days

APPENDIX 4

WATER LEVELS AND FLOWS

GRAND LAKE AT FOREST CITY
DAILY MEAN WATER LEVELS IN METRES FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	132.013	132.073	131.851	131.950	132.244	132.204	132.032	131.917	131.806	131.309	131.141	131.534	1
2	132.020	132.067	131.847	131.952	132.234	132.186	132.027	131.905	131.792	131.295	131.140	131.526	2
3	132.016	132.064	131.848	131.961	132.230	132.165	132.024	131.898	131.783	131.280	131.148	131.522	3
4	132.013	132.056	131.838	131.961	132.223	132.145	132.018	131.912	131.780	131.270	131.234	131.546	4
5	132.015	132.048	131.829	131.974	132.219	132.143	132.008	131.905	131.758	131.258	131.225	131.543	5
6	132.030	132.038	131.819	131.985	132.217	132.140	132.013	131.885	131.728	131.247	131.229	131.545	6
7	132.051	132.029	131.810	131.981	132.212	132.134	132.021	131.888	131.709	131.236	131.266	131.542	7
8	132.068	132.019	131.801	131.976	132.208	132.121	132.014	131.891	131.694	131.215	131.273	131.546	8
9	132.088	132.010	131.791	131.971	132.206	132.115	132.003	131.901	131.677	131.200	131.277	131.546	9
10	132.099	132.001	131.780	131.965	132.206	132.111	131.999	131.883	131.657	131.183	131.285	131.543	10
11	132.102	131.991	131.780	131.960	132.209	132.108	131.987	131.877	131.640	131.174	131.291	131.543	11
12	132.105	131.981	131.775	131.955	132.224	132.103	131.989	131.871	131.627	131.180	131.283	131.547	12
13	132.110	131.973	131.767	131.975	132.224	132.096	131.987	131.866	131.603	131.203	131.283	131.546	13
14	132.108	131.973	131.762	131.980	132.221	132.091	131.983	131.860	131.578	131.195	131.281	131.549	14
15	132.111	131.989	131.768	131.979	132.221	132.084	131.971	131.850	131.565	131.188	131.282	131.549	15
16	132.118	131.980	131.771	131.999	132.233	132.079	131.973	131.846	131.551	131.178	131.346	131.555	16
17	132.116	131.971	131.808	132.051	132.255	132.076	131.968	131.840	131.532	131.164	131.368	131.566	17
18	132.114	131.963	131.861	132.079	132.267	132.084	131.961	131.837	131.517	131.158	131.375	131.565	18
19	132.124	131.956	131.879	132.100	132.288	132.068	131.962	131.826	131.499	131.149	131.379	131.565	19
20	132.128	131.946	131.893	132.122	132.298	132.062	131.969	131.813	131.483	131.157	131.386	131.569	20
21	132.126	131.936	131.902	132.149	132.310	132.067	131.971	131.805	131.471	131.163	131.393	131.567	21
22	132.124	131.925	131.909	132.179	132.304	132.069	131.966	131.797	131.451	131.161	131.410	131.565	22
23	132.122	131.915	131.917	132.209	132.297	132.064	131.957	131.787	131.441	131.154	131.434	131.563	23
24	132.119	131.903	131.924	132.240	132.290	132.056	131.951	131.788	131.423	131.156	131.436	131.581	24
25	132.115	131.892	131.930	132.256	132.285	132.049	131.946	131.794	131.402	131.151	131.432	131.588	25
26	132.110	131.881	131.934	132.261	132.280	132.046	131.944	131.813	131.389	131.143	131.437	131.593	26
27	132.104	131.872	131.940	132.264	132.266	132.042	131.938	131.809	131.373	131.141	131.479	131.598	27
28	132.098	131.862	131.945	132.265	132.262	132.048	131.925	131.802	131.363	131.178	131.497	131.605	28
29	132.093		131.948	132.259	132.260	132.049	131.923	131.793	131.354	131.166	131.496	131.616	29
30	132.086		131.949	132.249	132.246	132.040	131.925	131.794	131.331	131.157	131.516	131.622	30
31	132.080		131.950		132.227		131.925	131.802		131.145		131.634	31
TOTAL	4094.726	3695.314	4087.526	3962.207	4099.666	3962.845	4091.280	4087.255	3946.977	4066.954	3940.022	4078.479	TOTAL
MEAN	132.088	131.975	131.856	132.074	132.247	132.095	131.977	131.847	131.566	131.192	131.334	131.564	MEAN
MAX	132.128	132.073	131.950	132.265	132.310	132.204	132.032	131.917	131.806	131.309	131.516	131.634	MAX
MIN	132.013	131.862	131.762	131.950	132.206	132.040	131.923	131.787	131.331	131.141	131.140	131.522	MIN

SUMMARY FOR THE YEAR 2007
Mean water level, 131.817 Metres
Maximum daily water level, 132.310 Metres On 2007-05-21
Minimum daily water level, 131.140 Metres On 2007-11-02

NOTES: THE DISCHARGE ARE PROVISIONAL AND ARE SUPPLIED BY ENVIRONMENT CANADA IN COOPERATION WITH DOMTAR.

TABLE I

FOREST CITY STREAM BELOW FOREST CITY DAM
DAILY MEAN DISCHARGE IN CUBIC METRES PER SECOND FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	3.75	5.96	8.37	9.09	23.2	19.7	2.33	2.55	2.60	9.14	2.47	2.60	1
2	3.72	7.21	8.35	9.13	19.9	19.5	2.32	2.51	2.57	8.88	2.46	6.22	2
3	3.71	8.13	8.34	9.19	15.1	19.2	2.31	2.49	2.56	8.64	2.51	8.06	3
4	3.71	8.11	8.26	9.18	11.9	19.0	2.31	4.14	5.77	8.49	2.78	5.56	4
5	3.71	8.04	8.18	9.29	8.53	15.7	4.06	4.11	11.9	8.27	2.61	2.73	5
6	3.75	7.99	8.11	9.34	7.27	11.4	4.93	2.27	14.1	8.07	2.54	2.72	6
7	3.78	7.95	8.10	9.34	7.25	8.21	4.92	2.26	13.7	7.88	2.61	2.73	7
8	3.80	7.91	8.01	9.34	5.87	5.85	4.90	2.26	13.4	7.51	2.63	2.72	8
9	3.81	7.84	7.92	9.30	4.16	5.15	4.90	2.22	13.1	7.26	2.66	2.71	9
10	3.81	7.84	7.82	9.23	3.60	5.15	4.87	2.22	12.8	6.99	2.68	2.73	10
11	3.82	7.82	7.77	9.18	2.99	4.26	4.86	2.22	12.5	6.85	2.68	2.73	11
12	3.84	7.79	7.77	9.15	2.40	3.26	4.85	2.22	12.3	6.20	2.66	2.71	12
13	3.84	7.74	7.74	9.33	2.40	2.75	4.85	2.22	11.9	6.01	2.68 A	2.70	13
14	3.84	7.73	7.68	9.37	2.40	2.51	4.83	2.22	11.5	5.94	2.69	2.73	14
15	3.86	7.80	7.73	9.39	2.40	2.39	4.80	2.22	11.3	4.90	2.72	2.70	15
16	3.84	7.77	7.76	9.52	2.40	2.39	4.27	2.22	11.0	3.59	2.88	2.75	16
17	3.85	7.73	8.07	9.96	2.43	2.39	3.10	2.22	10.7	2.84	2.94	2.74	17
18	3.88	7.69	8.42	10.2	5.57	2.39	2.56	2.21	10.5	2.62	2.96	2.74	18
19	3.86	7.65	8.53	10.3	8.31	2.39	2.56	2.18	10.2	2.60	2.70	2.76	19
20	3.86	7.61	8.65	10.5	8.32	2.39	2.59	2.40	9.99	2.64	2.55	2.78	20
21	3.86	8.40	8.70	10.7	10.2	2.36	2.56	2.56	9.77	2.64	2.55	2.77	21
22	3.88	8.89	8.75	10.9	11.1	2.36	2.56	2.56	9.46	2.60	2.61	2.74	22
23	3.87	8.79	8.81	11.1	11.1	2.34	2.56	2.56	9.35	2.57	2.60	2.75	23
24	4.94	8.70	8.87	19.3	11.1	2.34	2.56	2.56	9.06	2.54	2.61	2.79	24
25	6.04	8.64	8.94	23.6	11.0	2.34	2.56	2.56	9.90	2.51	2.65	2.78	25
26	6.03	8.56	9.00	23.6	11.0	2.34	2.56	2.60	10.7	2.49	2.65	2.80	26
27	6.03	8.46	9.02	23.7	10.9	2.34	2.56	2.60	10.4	2.51	2.65	2.83	27
28	6.03	8.38	9.04	23.7	10.9	2.34	2.54	2.60	10.3	2.59	2.49	2.83	28
29	6.02		9.06	23.5	10.9	2.34	2.52	2.60	10.0	2.53	2.53	2.85	29
30	5.99		9.07	23.3	16.4	2.34	2.55	2.60	9.55	2.51	2.58	2.84	30
31	5.97		9.07		20.0		2.56	2.60		2.48		2.87	31
TOTAL	134.70	223.13	259.91	382.73	281.00	179.42	105.21	77.76	302.88	153.29	79.33	96.97	TOTAL
MEAN	4.35	7.97	8.38	12.8	9.06	5.98	3.39	2.51	10.1	4.94	2.64	3.13	MEAN
DAM3	11600	19300	22500	33100	24300	15500	9090	6720	26200	13200	6850	8380	DAM3
MAX	6.04	8.89	9.07	23.7	23.2	19.7	4.93	4.14	14.1	9.14	2.96	8.06	MAX
MIN	3.71	5.96	7.68	9.09	2.40	2.34	2.31	2.18	2.56	2.48	2.46	2.60	MIN

SUMMARY FOR THE YEAR 2007
Total discharge, 197000 DAM3
Mean discharge, 6.24 M3/S
Maximum daily discharge, 23.7 M3/S On 2007-04-27
Minimum daily discharge, 2.18 M3/S On 2007-08-19

NOTES: THE DISCHARGE ARE PROVISIONAL AND ARE SUPPLIED BY
ENVIRONMENT CANADA IN COOPERATION WITH DOMTAR.
A - PARTIAL DAY

TABLE II

SPEDNIC LAKE AT ST. CROIX
DAILY MEAN WATER LEVELS IN METRES FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	116.422	116.491	115.956	116.642	117.311	117.350	117.113	116.684	115.873	115.381	115.017	115.774 A	1
2	116.423	116.470	115.940	116.670	117.295	117.359	117.092	116.655	115.838	115.374	115.020	115.780 E	2
3	116.409	116.453	115.935	116.708	117.300	117.365	117.071	116.628	115.806	115.363	115.020	115.774 A	3
4	116.398	116.432	115.919	116.734	117.290	117.369	117.043	116.623	115.791	115.363	115.136	115.816	4
5	116.388	116.413	115.901	116.774	117.285	117.397	117.022	116.604	115.755	115.351	115.127	115.829	5
6	116.392	116.392	115.887	116.811	117.293	117.422	117.023	116.567	115.725	115.343	115.133	115.844	6
7	116.411	116.371	115.864	116.836	117.294	117.433	117.025	116.546	115.712	115.340	115.195	115.852	7
8	116.430	116.350	115.846	116.857	117.295	117.417	117.010	116.519	115.705	115.314	115.220	115.866	8
9	116.461	116.328	115.827	116.870	117.291	117.408	116.991	116.518	115.692	115.253	115.234	115.876	9
10	116.486	116.306	115.803	116.860	117.284	117.400	116.985	116.459	115.676	115.148	115.248	115.883	10
11	116.503	116.285	115.799	116.833	117.278	117.391	116.970	116.429	115.662	115.100	115.276	115.890	11
12	116.516	116.263	115.787	116.806	117.285	117.378	116.977	116.399	115.674	115.093	115.260	115.902	12
13	116.532	116.244	115.769	116.817	117.275	117.364	116.967	116.369	115.645	115.123	115.260	115.908	13
14	116.539	116.229	115.759	116.818	117.260	117.350	116.951	116.341	115.616	115.091	115.259	115.916	14
15	116.551	116.229	115.775	116.811	117.245	117.337	116.925	116.303	115.614	115.077	115.262	115.924	15
16	116.568	116.208	115.797	116.829	117.249	117.321	116.925	116.273	115.606	115.062	115.337	115.934	16
17	116.574	116.188	115.845	116.911	117.268	117.313	116.908	116.247	115.585	115.039	115.388	115.951	17
18	116.573	116.168	115.965	116.981	117.273	117.319	116.887	116.231	115.567	115.025	115.421	115.957	18
19	116.584	116.155	116.047	117.036	117.292	117.286	116.878	116.194	115.550	115.010	115.439	115.961	19
20	116.589	116.129	116.122	117.090	117.292	117.265	116.874	116.148	115.536	115.029	115.460 A	115.971	20
21	116.583	116.110	116.181	117.152	117.310	117.266	116.868	116.126	115.521 A	115.044	115.480	115.974	21
22	116.576	116.089	116.230	117.212	117.304	117.259	116.851	116.100	115.496	115.030	115.498	115.974	22
23	116.568	116.072	116.285	117.274	117.304	117.248	116.828	116.063	115.501	115.023	115.551	115.977	23
24	116.561	116.054	116.334	117.339	117.312	117.228	116.813	116.041	115.484	115.035	115.564	116.003	24
25	116.555	116.036	116.381	117.367	117.322	117.207	116.799	116.028	115.456	115.023	115.556	116.023	25
26	116.548	116.015	116.423	117.369	117.331	117.192	116.786	116.018	115.451	115.011	115.570	116.038	26
27	116.539	115.994	116.466	117.355	117.324	117.174	116.762	115.991	115.437	115.005	115.625	116.055	27
28	116.530	115.974	116.518	117.354	117.325	117.170	116.738	115.961	115.440	115.058	115.681	116.071	28
29	116.523		116.558	117.337	117.339	117.162	116.730	115.924	115.438	115.043	115.686	116.090	29
30	116.512		116.585	117.319	117.332	117.139	116.714	115.901	115.405	115.028	115.732	116.108	30
31	116.503		116.617		117.341		116.706	115.888		115.013		116.127	31
TOTAL	3611.747	3254.448	3598.121	3509.772	3636.199	3519.289	3624.232	3604.778	3468.257	3569.192	3460.655	3594.048	TOTAL
MEAN	116.508	116.230	116.068	116.992	117.297	117.310	116.911	116.283	115.609	115.135	115.355	115.937	MEAN
MAX	116.589	116.491	116.617	117.369	117.341	117.433	117.113	116.684	115.873	115.381	115.732	116.127	MAX
MIN	116.388	115.974	115.759	116.642	117.245	117.139	116.706	115.888	115.405	115.005	115.017	115.774	MIN

SUMMARY FOR THE YEAR 2007
Mean water level, 116.303 Metres
Maximum daily water level, 117.433 Metres On 2007-06-07
Minimum daily water level, 115.005 Metres On 2007-10-27

NOTES: WATER LEVELS ARE IN METRES AND ARE REFERENCED TO GEODETIC SURVEY OF CANADA DATUM. THE WATER LEVEL DATA ARE PROVISIONAL AND ARE SUPPLIED BY ENVIRONMENT CANADA IN COOPERATION WITH DOMTAR.
A - PARTIAL DAY

TABLE III

0

ST. CROIX RIVER AT VANCEBORO
DAILY MEAN DISCHARGE IN CUBIC METRES PER SECOND FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	21.5	22.3	25.0	7.14	83.8	16.9	19.4	18.0	22.9	17.0	6.51	6.34	1
2	21.5	28.3	24.9	7.16	70.2	16.9	19.3	21.7	22.6	14.9	6.51	6.32	2
3	21.5	28.2	24.8	7.22	53.2	16.9	19.2	22.9	22.5	14.8	6.54	6.34	3
4	21.4	28.2	24.7	7.25	41.6	16.9	19.1	22.8	22.3	14.8	6.80	6.40	4
5	21.4	28.1	24.6	7.31	27.8	17.1	16.2	22.8	22.1	14.8	6.43	6.54	5
6	21.4	27.9	24.5	7.36	22.1	17.2	14.1	24.8	22.0	14.7	6.23	6.20	6
7	21.5	27.8	24.4	7.39	22.1	17.2	14.1	27.1	21.8	14.7	6.34	6.23	7
8	19.1	27.6	24.3	7.45	22.1	17.1	14.0	27.0	21.7	14.6	6.40	6.23	8
9	15.5	27.4	24.1	21.6	22.1	17.1	12.6	27.0	21.6	32.3	6.43	6.29	9
10	12.4	27.3	23.9	37.7	22.1	17.1	11.6	27.0	21.5	51.8	6.46	6.29	10
11	11.1	27.2	23.9	47.6	22.1	17.0	11.6	26.5	21.4	45.6	6.49	6.29	11
12	11.1	27.0	23.8	44.5	22.1	17.0	14.3	26.2	21.5	34.6	6.49	6.29	12
13	11.2	26.9	23.7	35.1	22.1	17.0	16.9	26.1	21.3	30.3	6.49	6.32	13
14	11.2	26.8	23.7	30.3	22.0	16.9	16.8	25.9	21.1	30.0	6.49	6.32	14
15	9.91	26.8	18.8	30.3	22.0	16.9	16.8	25.6	21.1	25.8	6.49	6.34	15
16	8.84	26.7	12.4	30.6	21.9	16.8	16.7	25.4	21.0	20.8	6.68	6.34	16
17	8.86	26.5	10.2	30.9	22.0	16.8	16.7	25.3	20.9	14.7	6.77	6.37	17
18	13.1	26.4	8.01	31.4	22.0	16.8	16.7	25.2	20.8	11.4	6.80	6.40	18
19	17.5	26.3	7.22	31.7	29.7	16.7	16.6	25.0	20.7	8.18	6.85	6.40	19
20	17.6	26.2	7.33	32.0	34.0	16.7	16.7	22.0	20.5	7.00	6.88	6.40	20
21	17.6	26.0	6.91	32.3	29.2	16.6	16.6	18.2	20.5	7.02	6.91	6.40	21
22	17.5	25.9	6.54	32.6	24.8	16.7	16.6	18.1	20.3	6.77	6.97	6.40	22
23	17.5	25.7	6.63	32.9	22.1	16.6	16.5	18.0	20.3	6.54	7.08	6.40	23
24	17.5	25.6	6.71	50.7	20.1	16.5	16.4	21.5	17.2	6.54	7.11	6.50	24
25	17.5	25.5	6.77	75.9	20.1	16.5	16.4	23.8	15.2	6.51	7.08	6.50	25
26	17.4	25.4	6.83	85.0	20.1	16.4	16.4	23.8	15.2	6.51	6.77	6.50	26
27	17.4	25.2	6.88	84.7	20.1	16.3	16.3	23.7	15.1	6.49	6.51	6.50	27
28	17.4	25.1	6.94	84.4	20.1	16.4	16.3	23.4	17.9	6.60	6.43	6.60	28
29	17.3		7.00	84.4	20.1	18.0	16.2	23.2	19.8	6.57	6.20	6.60	29
30	17.3		7.05	83.8	18.5	19.5	16.2	23.1	19.6	6.54	7.90	6.60	30
31	17.3		7.08		16.9		16.2	23.0		6.51		6.70	31
TOTAL	509.31	744.3	479.60	1108.68	859.1	508.5	499.5	734.1	612.4	505.38	200.04	198.35	TOTAL
MEAN	16.4	26.6	15.5	37.0	27.7	17.0	16.1	23.7	20.4	16.3	6.67	6.40	MEAN
DAM3	44000	64300	41400	95800	74200	43900	43200	63400	52900	43700	17300	17100	DAM3
MAX	21.5	28.3	25.0	85.0	83.8	19.5	19.4	27.1	22.9	51.8	7.90	6.70	MAX
MIN	8.84	22.3	6.54	7.14	16.9	16.3	11.6	18.0	15.1	6.49	6.20	6.20	MIN

SUMMARY FOR THE YEAR 2007
Total discharge, 601000 DAM3
Mean discharge, 19.1 M3/S
Maximum daily discharge, 83.3 M3/S On 2007-04-26
Minimum daily discharge, 6.20 M3/S On 2006-11-29

NOTES: DATA ARE SUPPLIED BY THE UNITIED STATES GEOLOGICAL SURVEY
AND ARE PROVISIONAL

TABLE IV

GRAND FALLS FLOWAGE AT GRAND FALLS
DAILY MEAN WATER LEVELS IN METRES FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	61.791	61.744	61.781	61.860	61.852	61.743	61.806	61.744	61.762	61.818	61.769	61.858	1
2	61.800	61.755	61.801	61.851	61.863	61.740	61.810	61.731	61.764	61.822	61.745	61.822	2
3	61.784	61.785	61.823	61.845	61.845	61.733	61.816	61.741	61.770	61.806	61.711	61.790	3
4	61.793	61.794	61.823	61.827	61.806	61.710	61.820	61.752	61.766	61.754	61.777	61.821	4
5	61.800	61.785	61.835	61.816	61.808	61.743	61.829	61.748	61.752	61.746	61.821	61.838	5
6	61.829	61.774	61.844	61.804	61.846	61.771	61.836	61.752	61.757	61.760	61.820	61.836	6
7	61.896	61.775	61.823	61.772	61.896	61.785	61.840	61.753	61.761	61.754	61.838	61.825	7
8	61.891	61.775	61.816	61.749	61.901	61.789	61.831	61.765	61.763	61.758	61.845	61.818	8
9	61.860	61.772	61.816	61.717	61.884	61.788	61.822	61.769	61.754	61.727	61.831	61.807	9
10	61.903	61.764	61.805	61.696	61.863	61.775	61.805	61.777	61.757	61.630	61.840	61.800	10
11	61.864	61.753	61.822	61.721	61.859	61.761	61.796	61.785	61.761	61.684	61.837	61.794	11
12	61.833	61.750	61.828	61.761	61.846	61.756	61.807	61.790	61.797	61.762	61.831	61.800	12
13	61.852	61.751	61.833	61.806	61.834	61.750	61.812	61.799	61.790	61.839	61.825	61.794	13
14	61.831	61.753	61.839	61.826	61.818	61.754	61.820	61.787	61.782	61.858	61.823	61.788	14
15	61.804	61.790	61.858	61.798	61.787	61.759	61.822	61.797	61.788	61.877	61.815	61.783	15
16	61.786	61.778	61.812	61.731	61.752	61.754	61.827	61.804	61.789	61.879	61.838	61.777	16
17	61.782	61.784	61.731	61.799	61.764	61.757	61.832	61.816	61.785	61.878	61.871	61.789	17
18	61.770	61.789	61.766	61.868	61.804	61.756	61.825	61.828	61.782	61.875	61.869	61.783	18
19	61.800	61.788	61.853	61.856	61.833	61.753	61.826	61.847	61.785	61.870	61.857	61.769	19
20	61.838	61.778	61.869	61.827	61.821	61.739	61.846	61.841	61.787	61.885	61.836	61.763	20
21	61.847	61.779	61.822	61.794	61.821	61.749	61.853	61.849	61.781	61.884	61.816	61.762	21
22	61.847	61.776	61.802	61.767	61.804	61.757	61.852	61.851	61.784	61.861	61.810	61.758	22
23	61.856	61.772	61.790	61.756	61.802	61.752	61.853	61.853	61.790	61.855	61.813	61.756	23
24	61.850	61.771	61.771	61.766	61.803	61.755	61.846	61.853	61.782	61.834	61.805	61.789	24
25	61.838	61.774	61.765	61.771	61.782	61.759	61.840	61.805	61.780	61.817	61.793	61.827	25
26	61.831	61.774	61.777	61.768	61.776	61.774	61.840	61.787	61.787	61.804	61.776	61.859	26
27	61.821	61.773	61.787	61.752	61.764	61.772	61.830	61.767	61.776	61.802	61.819	61.877	27
28	61.818	61.775	61.809	61.735	61.756	61.786	61.827	61.763	61.799	61.813	61.864	61.879	28
29	61.817		61.815	61.725	61.758	61.792	61.818	61.761	61.807	61.792	61.867	61.880	29
30	61.791		61.856	61.763	61.752	61.800	61.809	61.763	61.810	61.781	61.876	61.875	30
31	61.756		61.864		61.747		61.800	61.764		61.767		61.880	31
TOTAL	1916.579	1729.631	1916.236	1853.527	1916.247	1852.812	1916.596	1915.442	1853.348	1915.992	1854.638	1916.197	TOTAL
MEAN	61.825	61.773	61.814	61.784	61.814	61.760	61.826	61.788	61.778	61.806	61.821	61.813	MEAN
MAX	61.903	61.794	61.869	61.868	61.901	61.800	61.853	61.853	61.810	61.885	61.876	61.880	MAX
MIN	61.756	61.744	61.731	61.696	61.747	61.710	61.796	61.731	61.752	61.630	61.711	61.756	MIN

SUMMARY FOR THE YEAR 2007
Mean water level, 61.801 Metres
Maximum daily water level, 61.903 Metres On 2007-01-10
Minimum daily water level, 61.630 Metres On 2007-10-10

NOTES: WATER LEVELS ARE IN METRES AND ARE REFERENCED TO GEODETIC SURVEY OF CANADA DATUM. THE WATER LEVELS ARE PROVISIONAL AND ARE SUPPLIED BY ENVIRONMENT CANADA IN COOPERATION WITH DOMTAR.

TABLE V

ST. CROIX RIVER AT BARING
DAILY MEAN DISCHARGE IN CUBIC METRES PER SECOND FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	81.0	57.2 B	51.5	89.2	208	47.6	27.6	62.9	35.7	23.9	22.6	76.2	1
2	68.8	48.4	48.7	91.8	224	44.5	25.5	33.4	34.8	23.8	22.9	48.1	2
3	70.5	51.0	43.9	85.8	222	49.8	27.1	29.7	35.4	33.7	32.6	78.5	3
4	63.7	58.9 B	53.5	88.9	197	54.3	28.9	34.0	34.6	58.3	73.6	43.9	4
5	51.0	68.2 B	49.6	84.1	140	45.0	29.1	33.7	34.6	29.5	77.3	45.3	5
6	62.9	65.4 B	49.6 B	90.1	112	40.2	28.9	31.4	33.1	23.7	76.2	39.4	6
7	77.3	61.7 B	52.7 B	87.5	85.8	38.2	28.9	30.6	32.3	23.6	93.5	45.6	7
8	119	58.9 B	52.7 B	83.3	84.1	39.4	32.9	31.2	30.3	23.5	81.3	41.4	8
9	151	62.0 B	46.4 B	86.1	76.8	36.3	28.6	34.0	29.5	43.9	78.5	39.4	9
10	127	66.3 B	43.6 B	85.2	74.8	36.8	42.5	30.0	33.1	79.0	53.8	43.3 B	10
11	127	65.4 B	50.7	86.1	69.4	38.0	31.2	30.0	32.6	26.4	45.0	39.4 B	11
12	105	58.3 B	49.8	87.2	67.7	36.0	24.4	29.7	31.4	24.8	47.0	30.3	12
13	83.8	57.8 B	51.3	93.2	68.0	28.9	24.5	28.6	29.7	24.4	46.2	36.3 B	13
14	83.8	63.2 B	57.2	96.9	68.5	34.0	24.4	40.2	29.7	24.0	37.4	36.8 B	14
15	84.7	56.9	72.2	121	71.9	37.1	24.6	25.6	30.0	26.5	41.9	35.7 B	15
16	78.7	67.7 B	108	135	79.0	36.5	26.6	27.0	31.4	28.3	79.3	41.1 B	16
17	65.4 B	56.9 B	140	241	92.0	35.4	26.3	22.9	32.3	29.2	94.8	44.8 B	17
18	64.3 B	54.7 B	193	351	94.0	34.8	23.9	22.5	34.0	24.5	82.4	43.6 B	18
19	62.6 B	59.8 B	176	368	130	33.7	26.4	22.3	31.7	24.3	77.3	53.2 B	19
20	61.5 B	58.1 B	200	337	138	31.4	29.5	22.3	29.5	24.3	81.0	40.2	20
21	66.6 B	53.0	189	314	133	32.0	30.0	22.2	31.4	23.8	64.0	38.8 B	21
22	68.3 B	68.5 B	165	295	113	35.4	30.0	22.2	31.7	29.7	68.5	31.2	22
23	62.3	58.6 B	156	275	94.9	36.0	28.2	22.2	30.9	23.3	67.4	26.9	23
24	65.7 B	56.1 B	156	271	85.5	36.0	38.8	43.3	29.1	23.1	62.6	37.1	24
25	67.7 B	58.3 B	143	266	81.3	31.7	35.4	60.0	25.6	24.0	55.2	37.4	25
26	70.2 B	58.6 B	135	269	69.7	25.8	31.7	50.7	23.9	23.8	56.6	37.7	26
27	65.4 B	55.8	119	265	65.1	25.3	30.0	44.2	24.9	23.6	61.7	49.6	27
28	61.7 B	57.8	114	262	60.0	25.5	29.5	39.7	26.7	27.4	75.6	57.5	28
29	61.7 B		105	241	53.0	25.7	30.6	38.5	24.2	24.9	75.1	56.4	29
30	72.2 B		91.5	221	56.6	27.6	31.4	36.3	24.0	22.8	82.7	57.5	30
31	75.1 B		85.5		58.9		31.4	33.4		22.6		50.4	31
TOTAL	2425.9	1663.5	3049.4	5467.4	3174.0	1078.9	908.8	1034.7	918.1	888.6	1914.0	1383.0	TOTAL
MEAN	78.3	59.4	98.4	182	102	36.0	29.3	33.4	30.6	28.7	63.8	44.6	MEAN
DAM3	210000	144000	263000	472000	274000	93200	78500	89400	79300	76800	165000	119000	DAM3
MAX	151	68.5	200	368	224	54.3	42.5	62.9	35.7	79.0	94.8	78.5	MAX
MIN	51.0	48.4	43.6	83.3	53.0	25.3	23.9	22.2	23.9	22.6	22.6	26.9	MIN

SUMMARY FOR THE YEAR 2007
Total discharge, 2070000 DAM3
Mean discharge, 65.5 M3/S
Maximum daily discharge, 368 M3/S On 2007-04-19
Minimum daily discharge, 30.3 M3/S On 2007-08-21

NOTES: DATA ARE SUPPLIED BY THE UNITED STATES GEOLOGICAL SURVEY
AND ARE PROVISIONAL.
B - ICE CONDITIONS

MILLTOWN
DAILY MEAN WATER LEVELS IN METRES FOR 2007

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	---	13.649	13.649	14.015	13.985	13.649	---	13.649	---	13.649	13.649	---	1
2	13.741	13.649	13.649	13.893	13.954	---	---	13.649	---	13.649	13.649	---	2
3	13.893	---	---	13.985	13.924	---	13.649	13.649	---	13.649	---	13.741	3
4	13.832	---	---	13.924	13.954	13.649	13.649	---	13.649	13.649	---	13.649	4
5	13.649	13.649	13.649	---	---	13.649	13.649	---	13.649	13.649	13.924	13.649	5
6	---	13.649	13.649	---	---	13.649	13.649	---	13.649	---	13.863	13.649	6
7	---	13.649	13.649	---	13.985	13.649	---	13.649	13.649	---	13.954	13.649	7
8	14.015	13.649	13.649	---	14.015	13.649	---	13.649	---	---	13.954	---	8
9	14.015	13.649	13.649	---	13.893	---	13.649	13.649	---	13.649	13.832	---	9
10	13.985	---	---	13.893	13.954	---	13.649	13.649	13.649	13.985	---	13.649	10
11	13.954	---	---	13.954	13.649	13.649	13.649	---	13.649	13.649	---	13.649	11
12	13.863	13.649	13.649	13.954	---	13.649	13.649	---	---	13.649	---	13.649	12
13	---	13.649	13.649	13.985	---	13.649	13.649	13.649	---	---	13.649	13.649	13
14	---	13.649	13.649	---	13.649	13.649	---	13.649	13.649	---	13.649	13.649	14
15	13.985	13.649	13.649	---	13.649	13.649	---	13.649	---	13.649	13.649	---	15
16	13.985	14.259	13.649	13.893	13.649	---	13.649	13.649	---	13.649	13.649	---	16
17	13.832	---	---	14.106	13.649	---	13.649	13.649	13.649	13.649	---	13.649	17
18	13.710	---	---	13.954	---	13.649	13.649	---	13.649	13.649	---	13.649	18
19	13.863	13.649	13.863	13.832	---	13.649	13.649	---	13.649	13.649	14.015	13.649	19
20	---	13.649	13.985	13.893	---	13.649	13.649	13.649	13.649	---	13.832	13.649	20
21	---	13.649	13.863	---	---	13.649	---	13.649	13.649	---	13.954	13.649	21
22	13.649	13.649	13.924	---	13.649	13.649	---	13.649	---	13.649	13.649	---	22
23	13.649	13.649	13.893	13.893	13.649	---	13.649	13.649	---	13.649	13.649	---	23
24	13.649	---	---	13.924	13.649	---	13.649	13.649	13.649	13.649	---	13.649	24
25	14.106	---	---	13.863	13.649	13.649	13.649	---	13.649	13.649	---	---	25
26	14.106	13.649	14.137	13.985	---	13.649	13.649	---	13.649	13.649	13.649	---	26
27	---	13.649	13.924	13.954	---	13.649	13.649	13.649	13.649	---	13.649	13.649	27
28	---	13.649	13.954	---	13.649	13.649	---	13.649	13.649	---	13.741	13.649	28
29	13.649		13.893	---	13.649	13.649	---	13.649	---	13.649	13.954	---	29
30	13.802		13.863	13.893	13.649	---	13.649	13.649	---	13.649	13.985	---	30
31	13.649		---		13.649		13.649	13.649		13.649		13.649	31

NOTES: THE WATER LEVELS ARE SUPPLIED BY NB POWER CORPORATION

TABLE VII

APPENDIX 5

Water Quality Charts

St. Croix River at St. Stephen, NB

St. Croix River at Forest City, ME