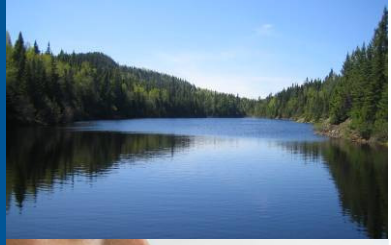
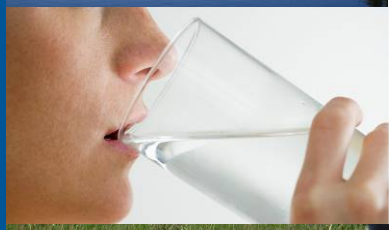
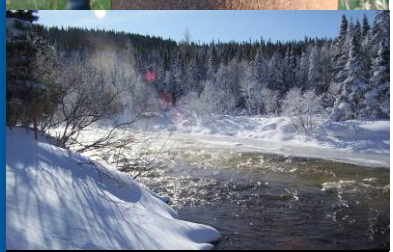







Waterford River @ Kilbride

NF02ZM0009

March 2010

Newfoundland Labrador

Government of Newfoundland & Labrador
Department of Environment and Conservation
Water Resources Management Division
St. John's, NL, A1B 4J6 Canada

Real Time Water Quality Monthly Report
Waterford River - St. John's NL
March 2010

General

- Data from the Waterford River monitoring station is monitored by the Water Resources Management Division staff.

Maintenance and Calibration of Instrumentation

- The following table displays the dates when the Waterford River water quality probe was installed and removed during this deployment period for routine cleaning, maintenance and calibration.

Table 1: Table of Water Quality Probe Installation and Removal

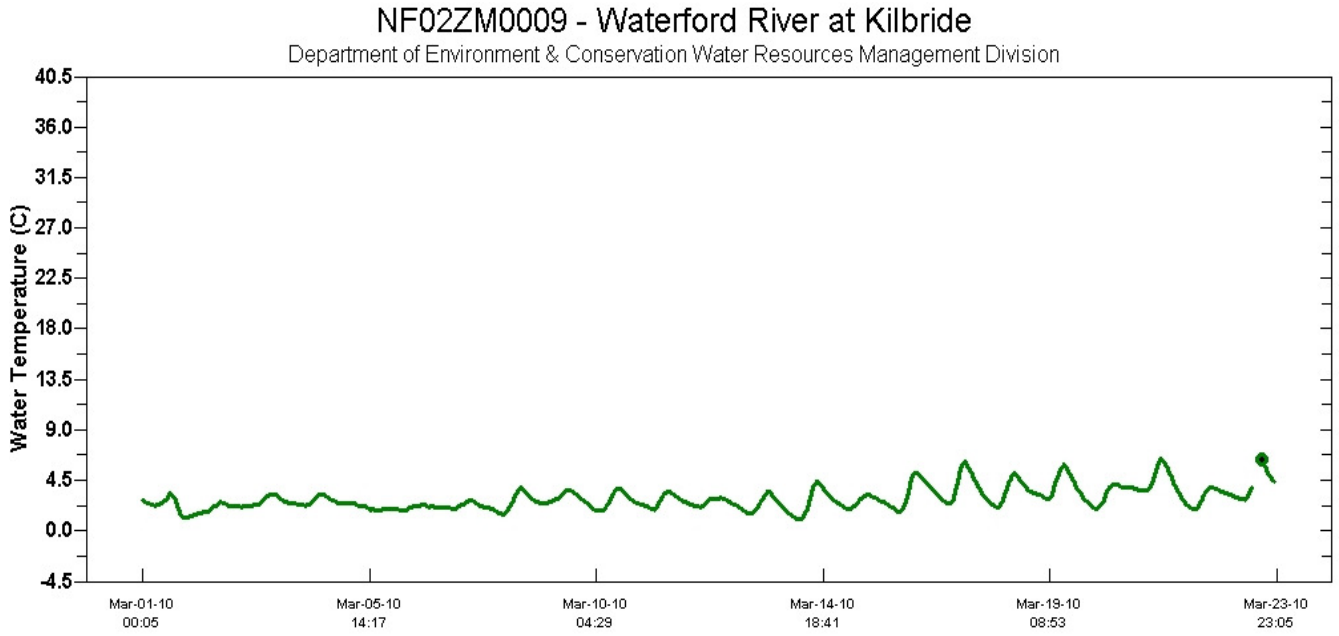
Date Installed	Date Removed
March 1, 2010	March 23, 2010

- Water quality readings were taken with a second water quality instrument at the time of installation and removal for QAQC comparison. The QAQC instrument was calibrated prior to each use.
- There is a technical problem with transmitting dissolved oxygen data to the data logger at Waterford River. A new transmission cable will be installed when weather conditions permit, and dissolved oxygen data will not be reported in the interim.

Data Interpretation

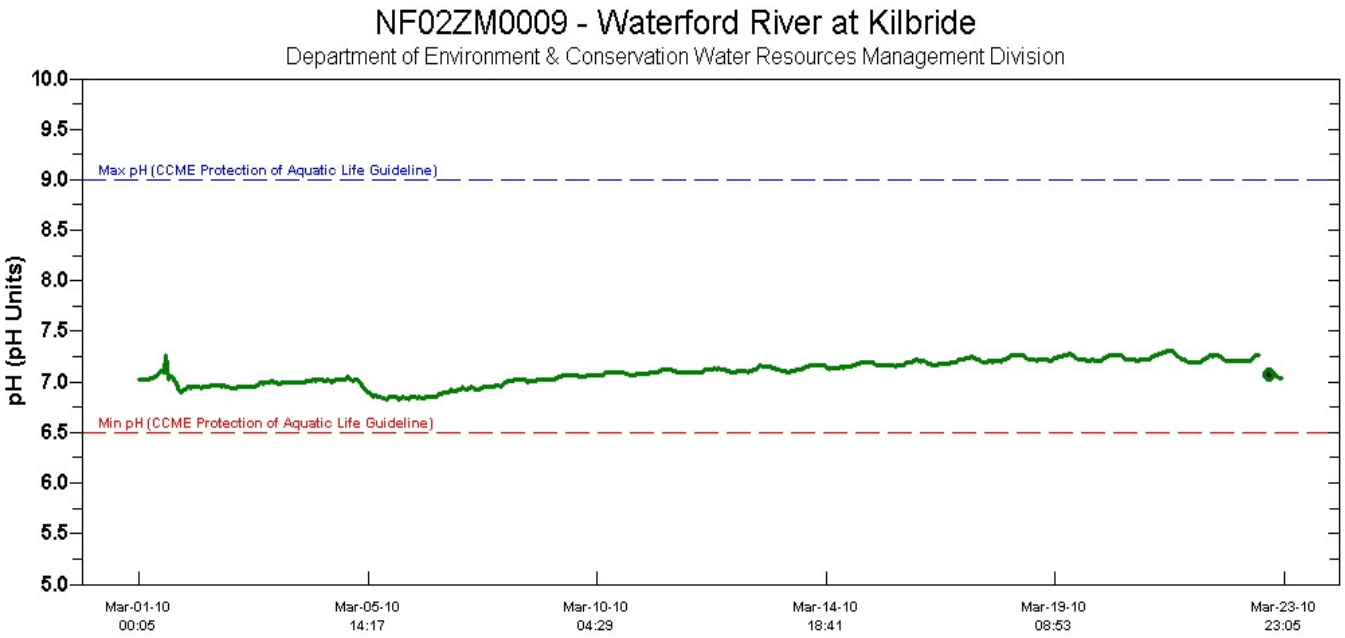
- **Water temperatures** were fairly constant during this deployment, as shown in **Figure 1** below. Water temperatures ranged between 0.55 and 5.90^{o}C , which was within the seasonally expected range.

Figure 1: Water Temperature



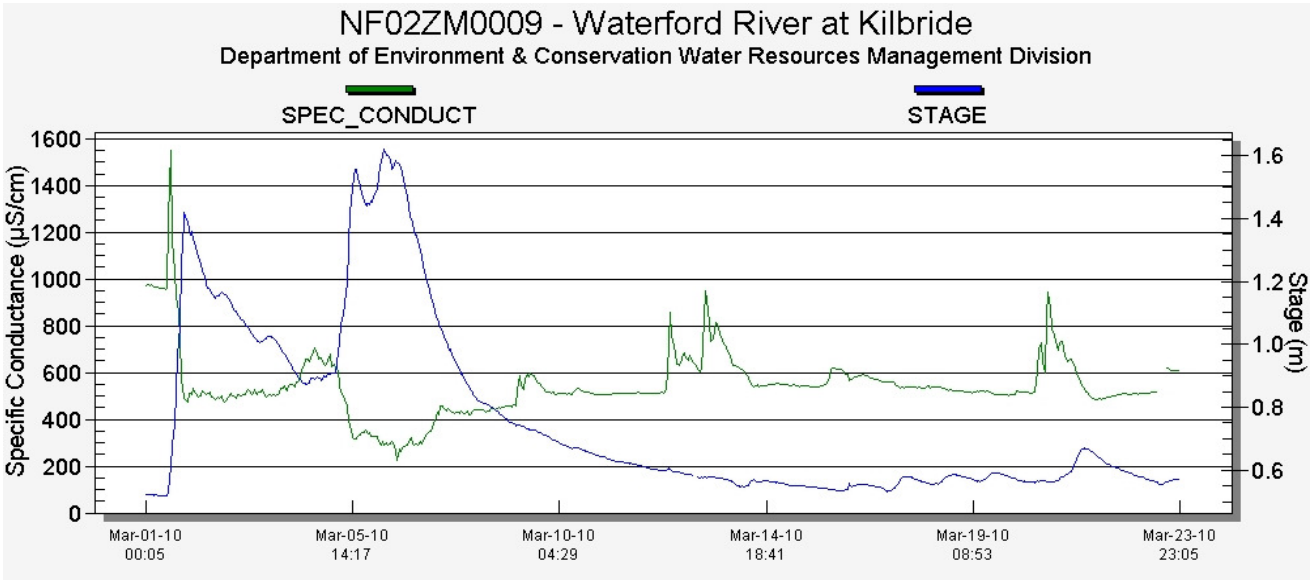
- **pH** levels were fairly constant throughout this deployment ranging from 6.82 to 7.31 units, as seen in **Figure 2** below. All pH values were within the range recommended by the Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 pH units **(Figure 2).**

Figure 2: pH Levels



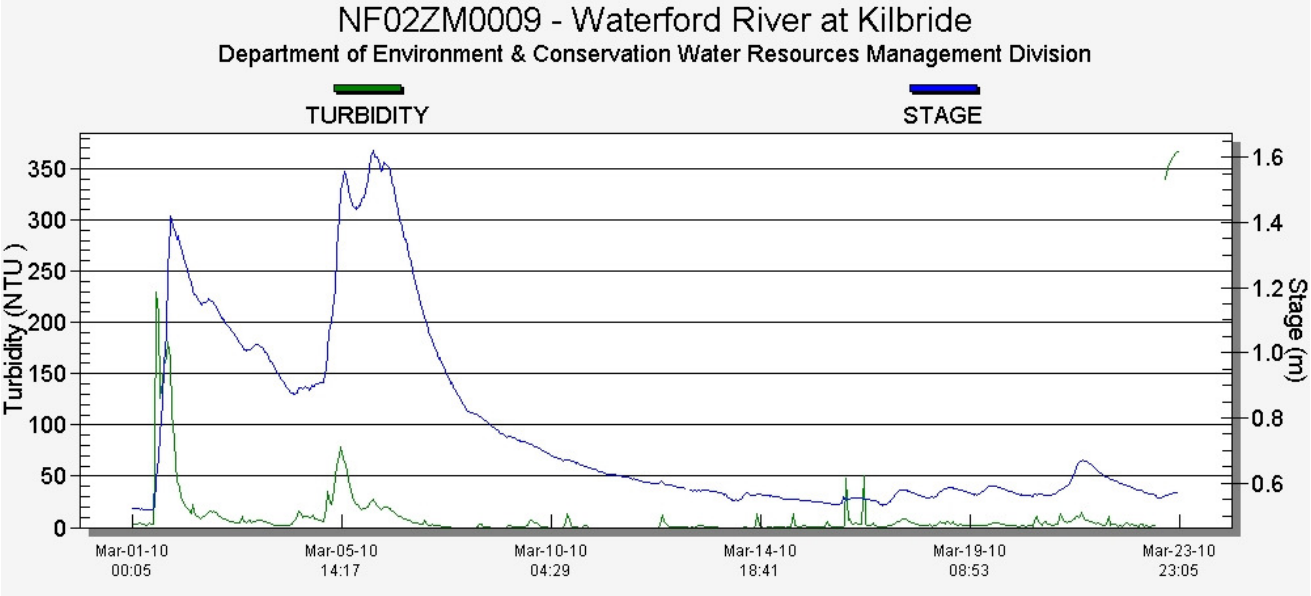
- **Specific conductance levels** were somewhat variable from March 1st to March 8th as seen in **Figure 3** below, in green ink. This may be the result of heavy rainfall that occurred in the region between these dates, which can be seen in the peaks in stage height shown in blue ink in **Figure 3**. Canadian climate data for St. John's for March 2010, as provided by Environment Canada, is given in **Appendix 1** at the end of this report, and indicates approximately 150mm of rain fell from March 1-8. Specific conductance values were fairly constant for the remainder of the deployment, with a couple of peaks occurring near March 13th and 21st. These peaks may have been the result of light rain that occurred immediately prior to those dates, or may be the result of water quality events. The large spike in specific conductance seen on March 1 in Figure 3 is an error reading that occurred at the instant the instrument was connected for deployment.

Figure 3: Specific Conductance



Turbidity was at background levels for most of the deployment period with the exception of spikes occurring on March 2nd and March 5th, as shown in **Figure 4** below. The spikes were the result of heavy rain and increased run-off that occurred on these dates. Turbidity values ranged from 0-230 NTU during this deployment.

Figure 4: Turbidity



APPENDIX 1: Weather information for St. John's, NL provided by Environment Canada for March 2010:

Daily Data Report for March 2010

Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days °C	Cool Deg Days °C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	1.9	-1.2	0.4	17.6	0.0	45.2	0.0	45.2	9	11	57
02†	3.3	0.6	2.0	16.0	0.0	6.2	0.0	6.2	5		<31
03†	3.3	-0.7	1.3	16.7	0.0	1.0	0.0	1.0	3	36	35
04†	0.1	-1.0	-0.5	18.5	0.0	10.0	0.0	10.0	3	4E	52E
05†	0.7	0.0	0.4	17.6	0.0	71.4	0.0	71.4	3	3E	63E
06†	1.4	-0.2	0.6	17.4	0.0	46.6	0.0	46.6	3	1	59
07†	-0.1	-5.2	-2.7	20.7	0.0	2.0	T	2.0	3	36	52
08†	2.9	-5.4	-1.3	19.3	0.0	0.0	0.0	0.0	3	20	46
09†	1.7	-3.4	-0.9	18.9	0.0	2.2	1.4	3.6	3	19	35
10†	1.3	-4.1	-1.4	19.4	0.0	0.0	0.2	T	3	25	39
11†	-1.1	-4.4	-2.8	20.8	0.0	0.0	T	T	3		<31
12†	-2.0	-4.6	-3.3	21.3	0.0	0.0	3.8	3.8	3		<31
13†	-0.5	-7.2	-3.9	21.9	0.0	0.0	3.8	3.8	6		<31
14†	4.7	-6.1	-0.7	18.7	0.0	0.0	0.0	0.0	6	26	32
15†	0.9	-2.6	-0.9	18.9	0.0	0.0	T	T	5	35	48
16†	5.6	-4.7	0.5	17.5	0.0	0.0	0.0	0.0	5	27	33
17†	5.8	-1.9	2.0	16.0	0.0	0.0	0.0	0.0	3	30	33
18†	6.7	-1.3	2.7	15.3	0.0	0.0	0.0	0.0	2	22	52
19†	6.2	-2.8	1.7	16.3	0.0	0.0	T	T	2	28	33
20†	3.9	-3.4	0.3	17.7	0.0	1.2	1.8	3.0	2	26	37
21†	4.7	-3.8	0.5	17.5	0.0	0.8	0.4	1.2	2	28	61
22†	2.0	-4.5	-1.3	19.3	0.0	0.0	T	T	2		<31

23†	3.4	-1.8	0.8	17.2	0.0	0.0	0.0	0.0	2		<31
24†	1.1	-1.5	-0.2	18.2	0.0	33.8	T	34.8	2	13E	56E
25†	3.9	0.6	2.3	15.7	0.0	11.0	0.0	11.0	1	32	44
26†	10.4	1.1	5.8	12.2	0.0	T	0.0	T	1	33	41
27†	7.3	-7.0	0.2	17.8	0.0	1.0	10.6	9.4	T	2	46
28†	-4.1	-9.7	-6.9	24.9	0.0	0.0	0.4	0.2	6	36	50
29†	-1.6	-9.4	-5.5	23.5	0.0	0.0	0.0	0.0	6		<31
30†	3.1	-3.4	-0.2	18.2	0.0	0.0	0.0	0.0	4	17	41
31†	4.2	-0.1	2.1	15.9	0.0	1.2	0.0	1.2	3		<31
Sum				**566.9**	**0.0**	**233.6**	**22.4**	**254.4**			
Avg	**2.6**	**-3.2**	**-0.29**								
Xtrm	**10.4**	**-9.7**								**3E**	**63E**

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