Government of Newfoundland and Labrador
Department of Environment and Conservation
Water Resources Management Division

Real Time Water Quality Monthly Report
Waterford River - St. John's NL
May 2006

General

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

Maintenance and Calibration of Instrumentation

- The following table displays the dates when the Datasonde was removed for routine cleaning, maintenance and calibration and when it was redeployed during the month of May.

  Table 1: Table of Datasonde removal and installation dates

Date Installed	Date Removed
	May 8, 2006
May 9, 2006	

- Water quality readings were taken with a Minisonde at the time of removal for comparison purposes. The Minisonde was calibrated prior to use.

Data Interpretation

- Areas in the graphs where the data lines go abruptly down to the x axis and show no readings occur when the datasonde is removed for routine cleaning, maintenance and calibration. The dates where this occurs correspond to Table 1 above.
- In general, water quality parameters were stable during the month of May with expected daily/nightly (diurnal) and seasonal changes occurring.
- Water temperatures fluctuated in response to daily maximum and minimum air temperatures. This is demonstrated by comparing the graph in **Figure 1** to the air temperature data in **Appendix 1**. Temperatures were constant throughout the month of May.

Figure 1

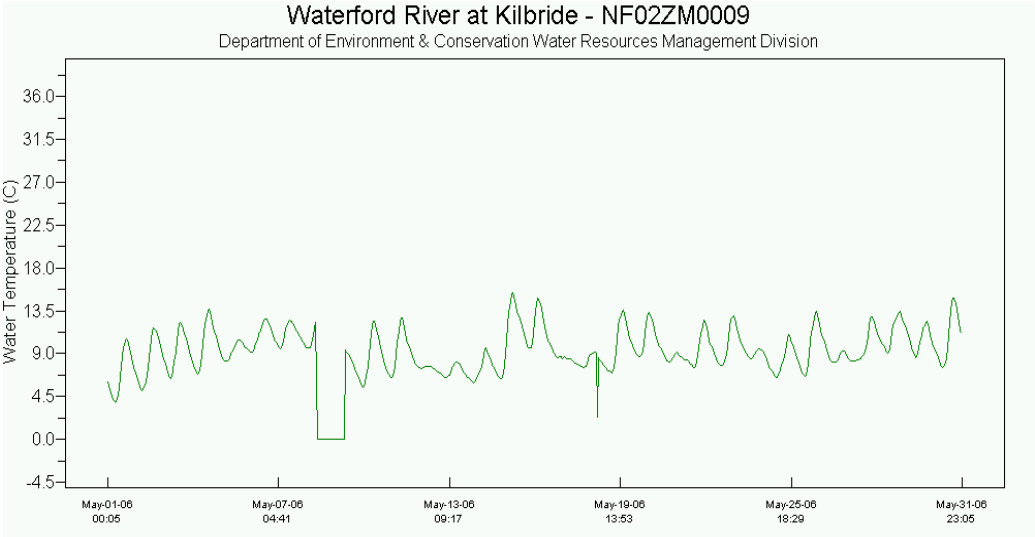
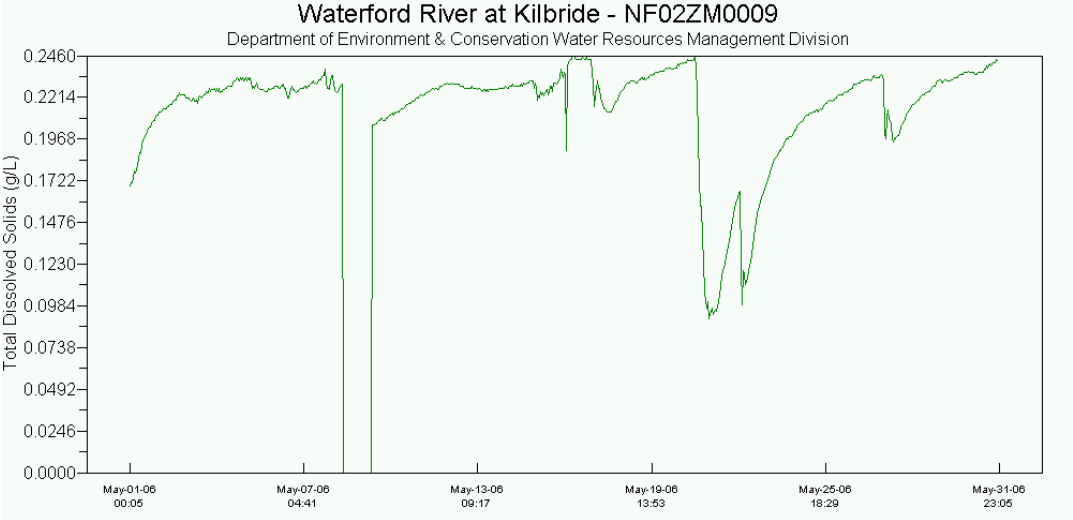
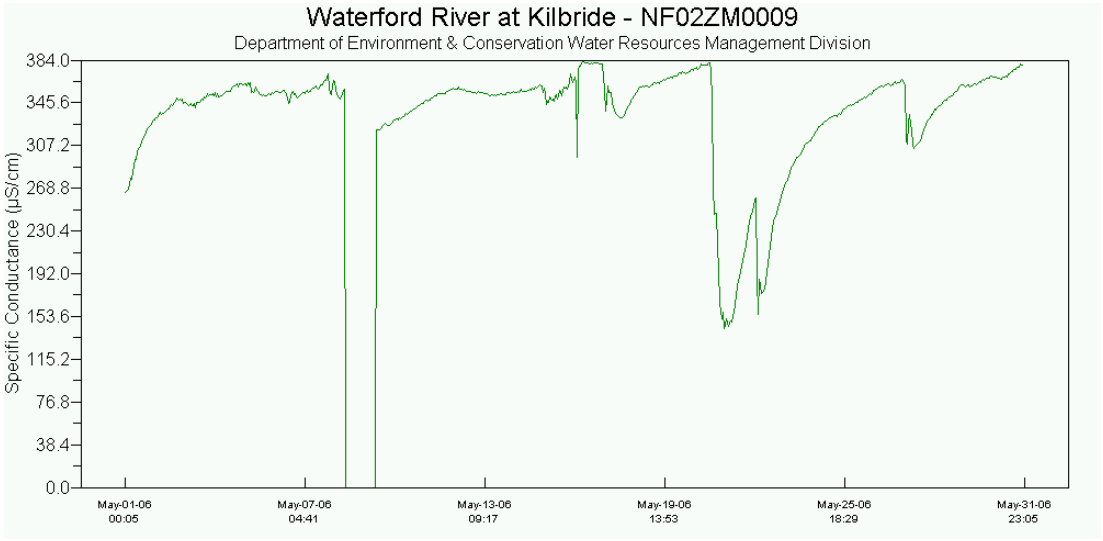


Figure 2



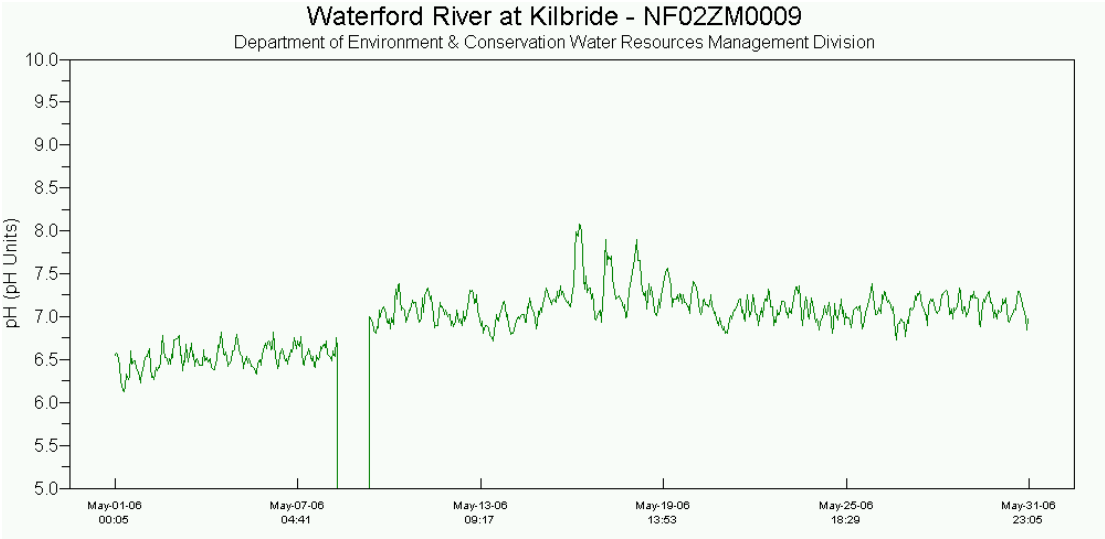
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



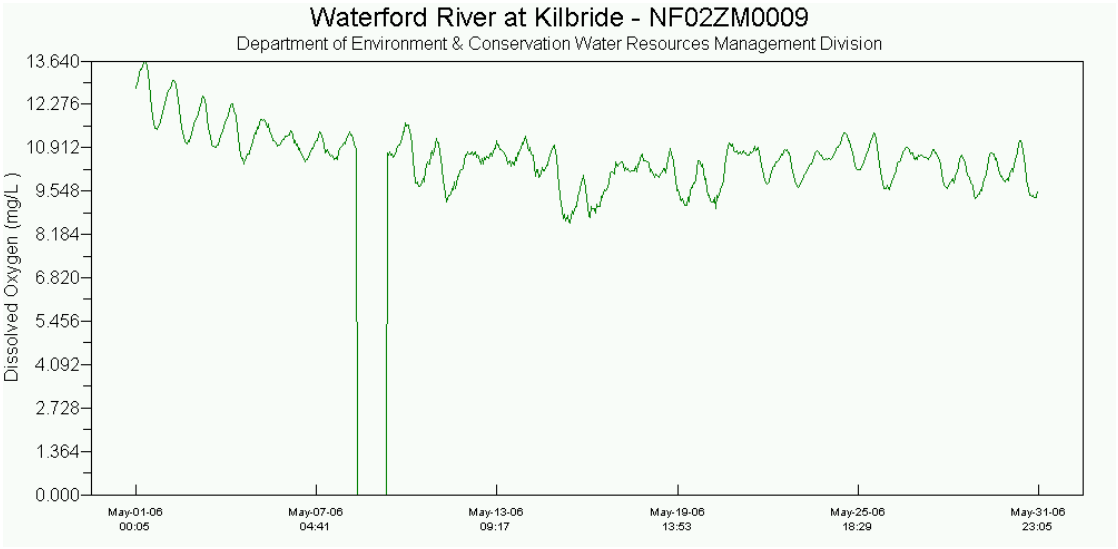
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



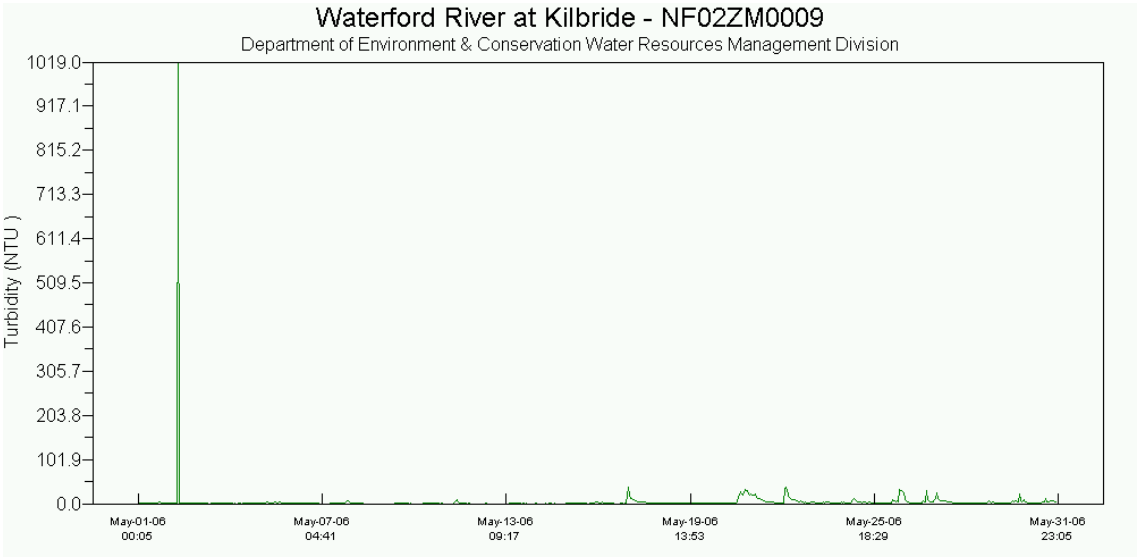
- The pH levels fluctuated throughout the month of May. There were some instances where the pH measurements were outside the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 (Figure 4).

Figure 5



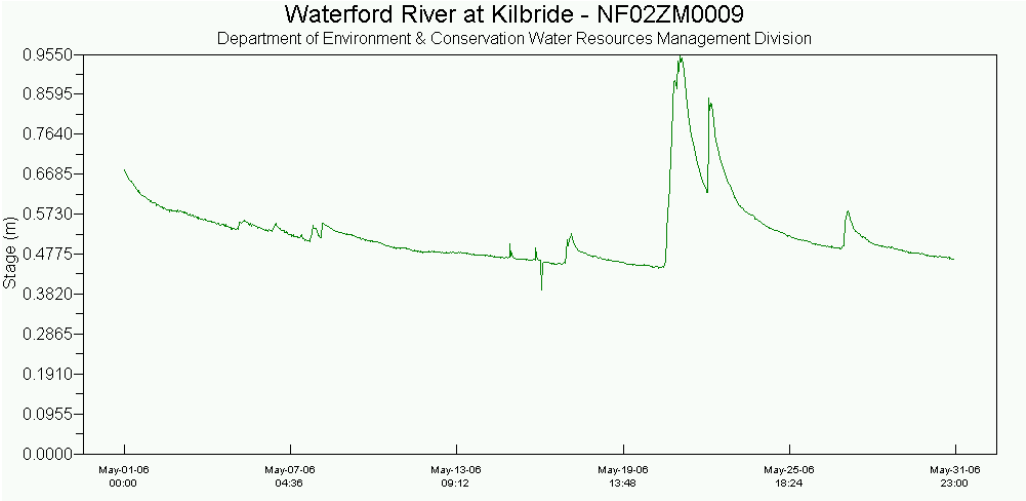
- During the month of May, dissolved oxygen measurements started to decrease towards the end of the month with the increase in water temperature.

Figure 6



- Turbidity levels fluctuated and had several small spikes noted throughout the month. The turbidity spikes (Figure 6) are normally in response to precipitation events. The high turbidity readings can be attributed to precipitation events and warm air temperatures, causing snow melt and subsequent runoff. Several turbidity spikes exceeded the CCME recommended maximum of 8 NTU above background levels.

Figure 7



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Appendix 1: Weather information for St. John's, NL provided by Environment Canada for May 2006

Daily Data Report for May 2006											
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	13.5	-1.5	6.0	12.0	0.0	0.0	0.0	0.0	0	27E	56E
02	19.1	1.5	10.3	7.7	0.0	0.0	0.0	0.0	0		<31
03	15.6	1.6	8.6	9.4	0.0	0.0	0.0	0.0	0		<31
04	20.7	4.8	12.8	5.2	0.0	0.0	0.0	0.0	0		<31
05	13.4	4.4	8.9	9.1	0.0	1.4	0.0	1.4	0		<31
06	19.6	10.0	14.8	3.2	0.0	0.0	0.0	0.0	0		<31
07	16.1	8.0	12.1	5.9	0.0	2.2	0.0	2.2	0	16E	37E
08	13.0	4.6	8.8	9.2	0.0	0.8	0.0	0.8	0		<31
09	6.6	0.6	3.6	14.4	0.0	T	0.0	T	0		<31
10	9.2	0.6	4.9	13.1	0.0	0.0	0.0	0.0	0		<31
11	6.9	-0.3	3.3	14.7	0.0	T	0.0	T	0		<31
12	4.3	2.4	3.4	14.6	0.0	1.0	0.0	1.0	0	36E	43E
13	4.9	1.8	3.4	14.6	0.0	0.4	0.0	0.4	0	36E	41E
14	7.8	2.0	4.9	13.1	0.0	T	0.0	T	0	36E	32E
15	23.5	4.6	14.1	3.9	0.0	0.0	0.0	0.0	0	26E	41E
16	7.6	1.9	4.8	13.2	0.0	T	0.0	T	0		<31
17	5.1	2.4	3.8	14.2	0.0	6.2	0.0	6.2	0		<31
18	6.0	3.4	4.7	13.3	0.0	0.2	0.0	0.2	0		<31
19	10.6	2.3	6.5	11.5	0.0	0.0	0.0	0.0	0		<31
20	11.8	2.3	7.1	10.9	0.0	T	0.0	T	0	15E	48E
21	9.2	5.2	7.2	10.8	0.0	29.8	0.0	29.8	0	13E	56E
22	15.5	4.9	10.2	7.8	0.0	11.4	0.0	11.4	0	21E	69E
23	12.8	4.9	8.9	9.1	0.0	T	0.0	T	0	25E	78E
24	8.3	2.0	5.2	12.8	0.0	1.6	0.0	1.6	0	34E	35E
25	8.6	2.0	5.3	12.7	0.0	0.8	0.0	0.8	0		<31
26	14.3	2.4	8.4	9.6	0.0	0.0	0.0	0.0	0	23E	35E
27	10.7	3.3	7.0	11.0	0.0	4.4	0.0	4.4	0	17E	83E
28	14.6	5.0	9.8	8.2	0.0	0.4	0.0	0.4	0	25E	41E
29	15.8	2.0	8.9	9.1	0.0	0.0	0.0	0.0	0	26E	52E
30	9.6	1.5	5.6	12.4	0.0	0.6	0.0	0.6	0	32E	37E
31	13.5	0.5	7.0	11.0	0.0	0.0	0.0	0.0	0	31E	43E
Sum				**327.7**	**0.0**	**61.2**	**0.0**	**61.2**			