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
June 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 June.

  Table 1: Table of Datasonde removal and installation dates

Date Installed	Date Removed
	June 8, 2006
June 8, 2006	June 28, 2006
June 29, 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 June 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**. A warming trend was experienced during the second half of the month.

Figure 1

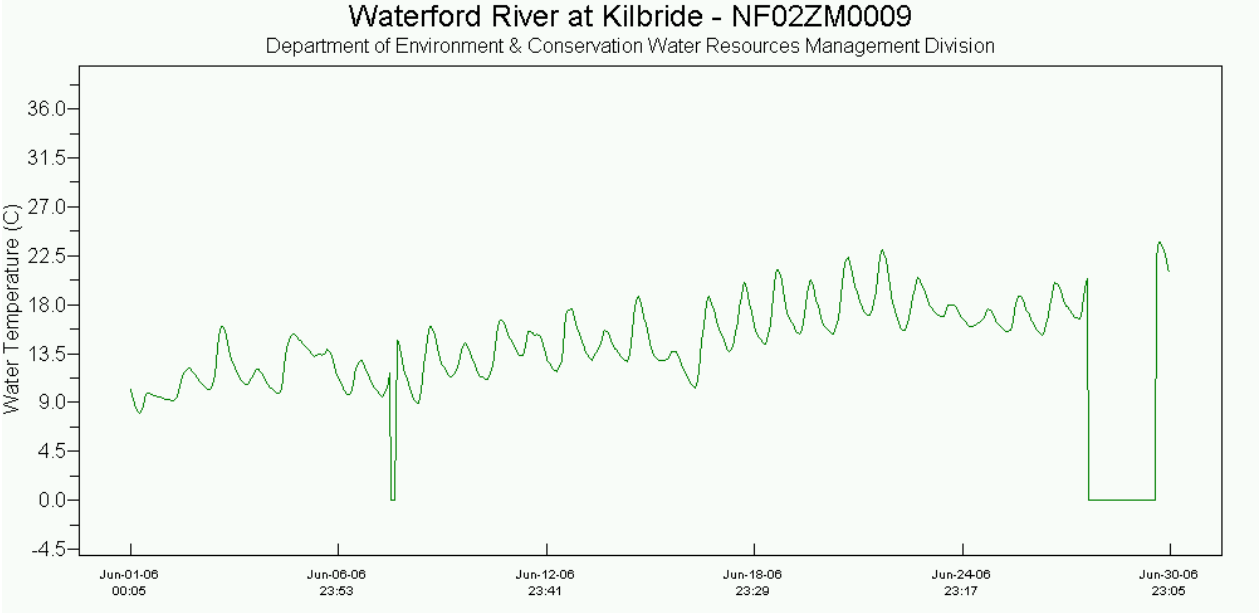
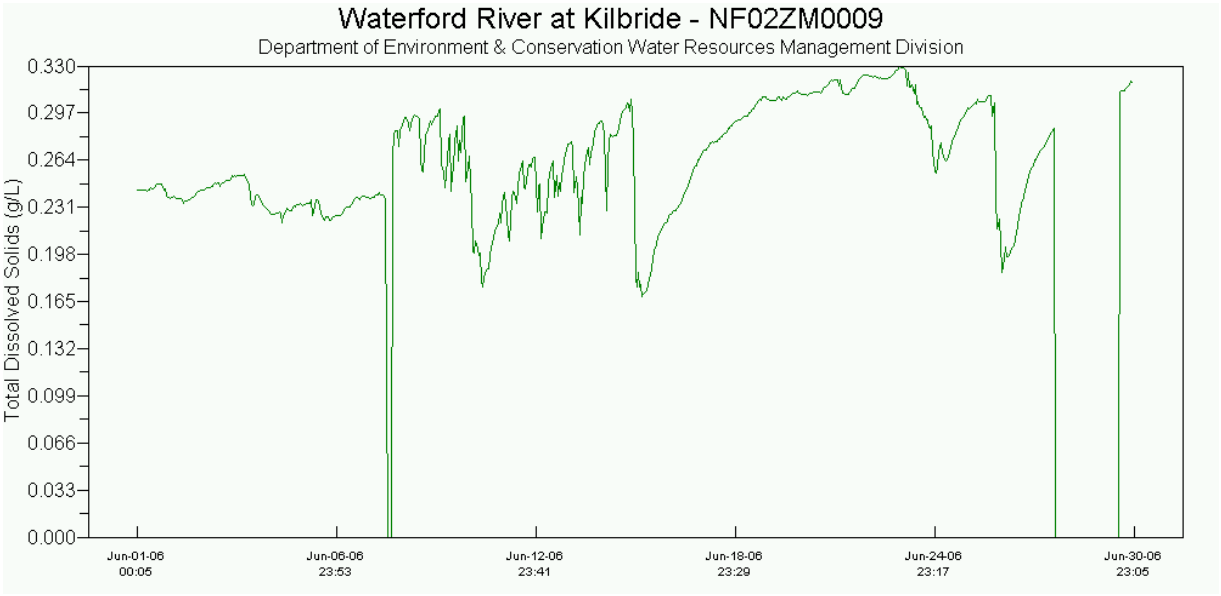
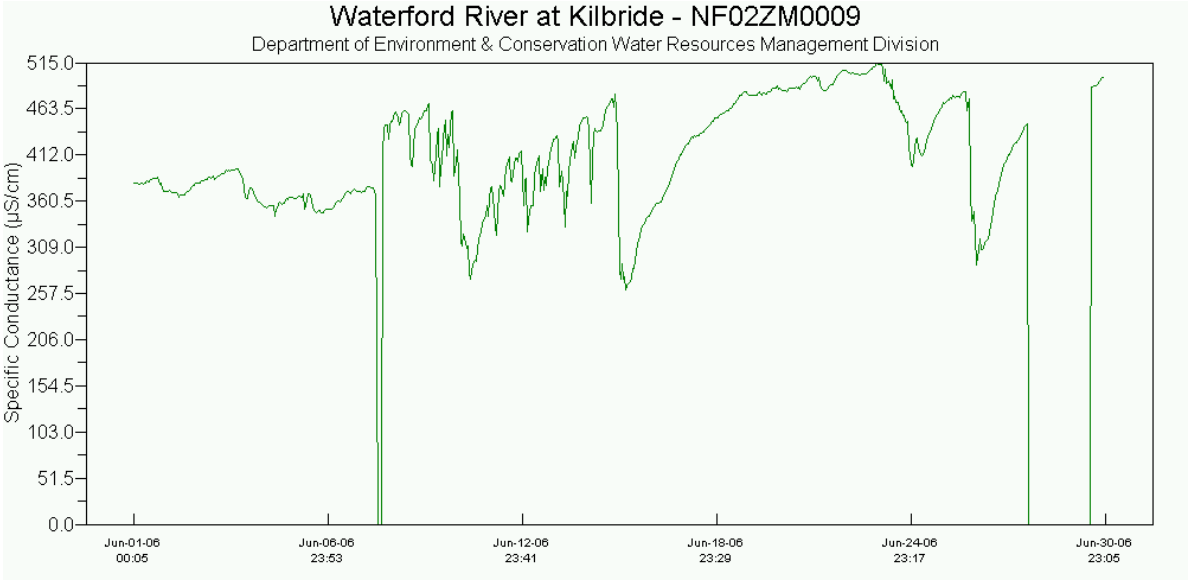


Figure 2



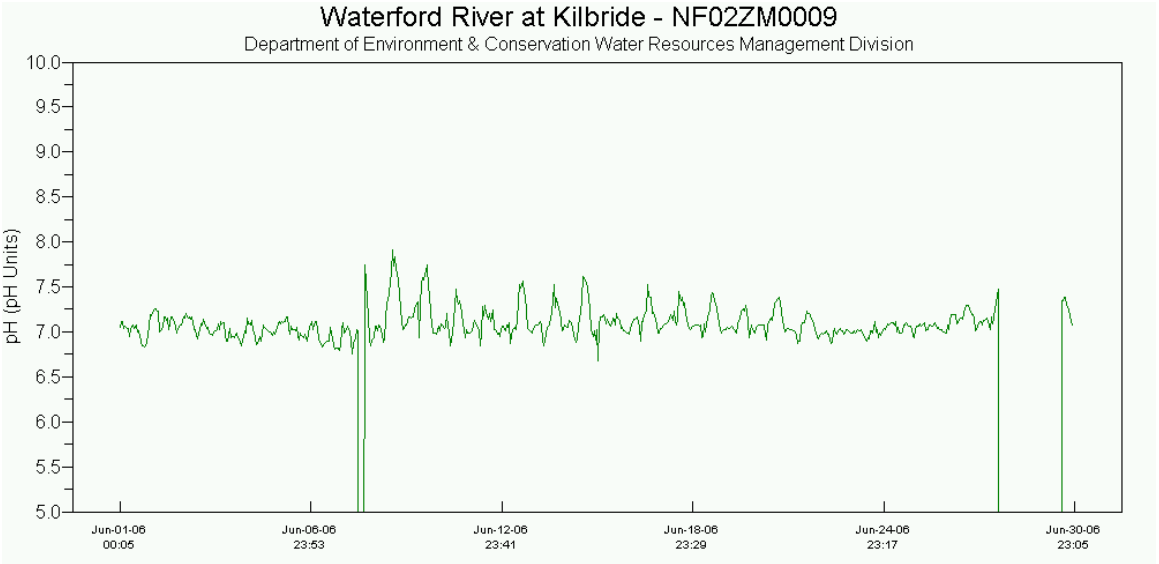
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



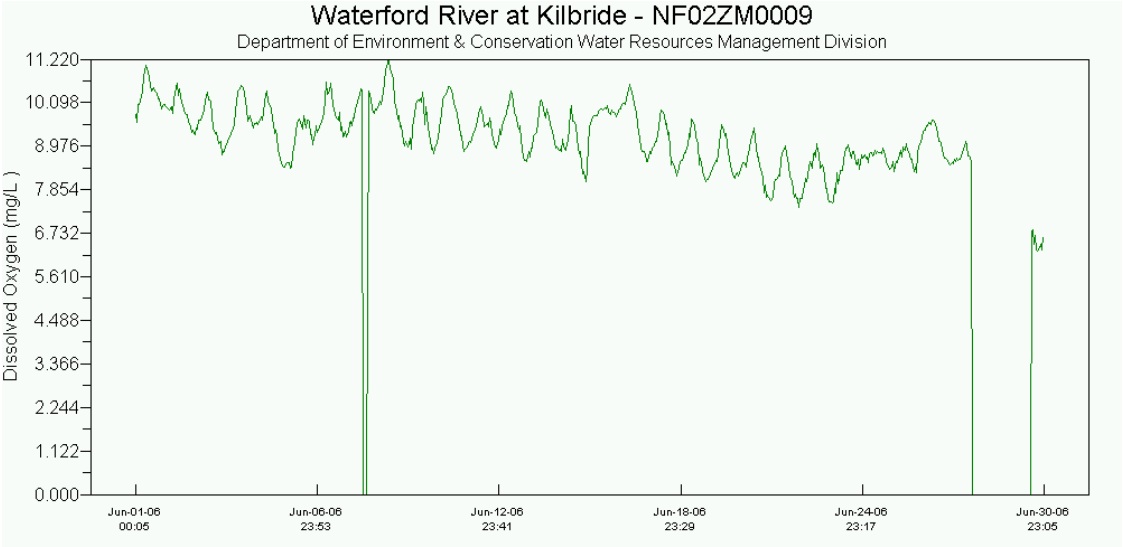
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



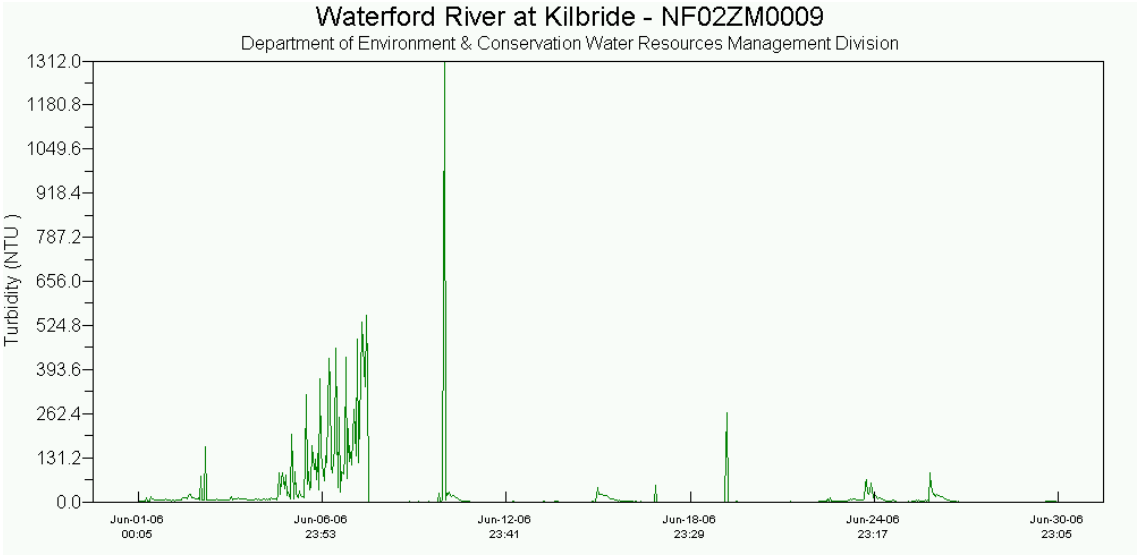
- The pH levels for the month of June were consistent.

Figure 5



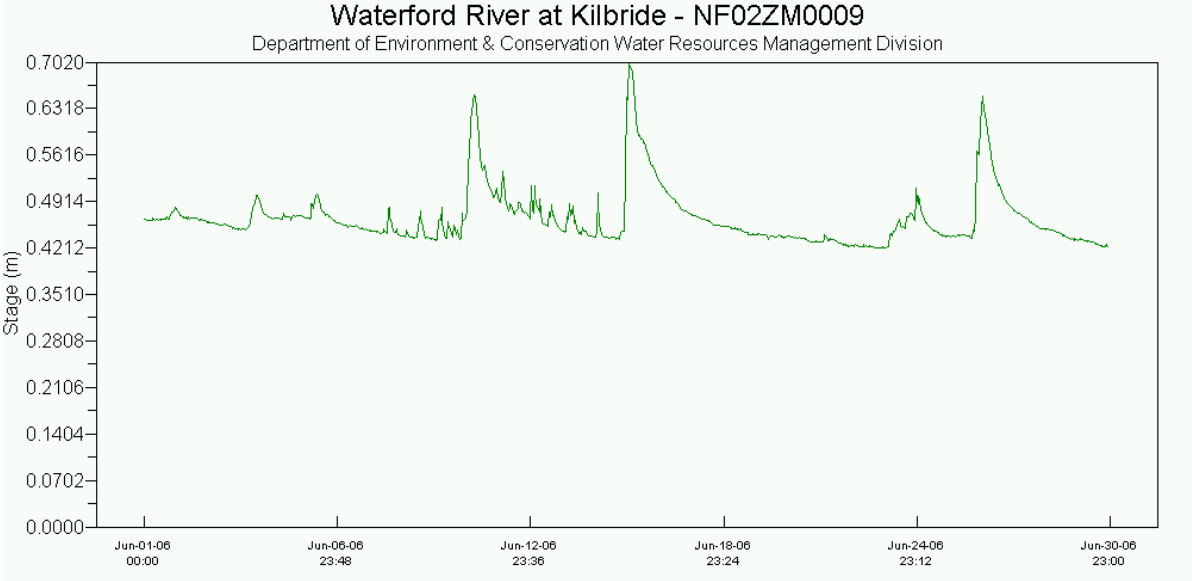
- During the month of June, dissolved oxygen measurements continued to show a decrease related to the increase in water temperature.

Figure 6



- Turbidity levels fluctuated and had several spikes noted throughout the month. The turbidity spikes (Figure 6) are normally in response to precipitation events. Several turbidity spikes exceeded the CCME recommended maximum of 8 NTU above background levels.

Figure 7



The stage responded to precipitation events and had several spikes during the month. These spikes can be correlated to precipitation events found in Appendix 1.

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

Daily Data Report for June 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	11.0	-0.3	5.4	12.6	0.0	3.0	0.0	3.0	0	17E	39E
02	14.4	7.7	11.1	6.9	0.0	T	0.0	T	0		<31
03	14.3	5.1	9.7	8.3	0.0	T	0.0	T	0		<31
04	10.1	5.1	7.6	10.4	0.0	4.8	0.0	4.8	0		<31
05	21.1	6.0	13.6	4.4	0.0	8.4	0.0	8.4	0	23E	59E
06	13.4	3.8	8.6	9.4	0.0	3.6	0.0	3.6	0	28E	39E
07	9.2	3.8	6.5	11.5	0.0	0.4	0.0	0.4	0		<31
08	12.1	3.3	7.7	10.3	0.0	0.0	0.0	0.0	0	9E	37E
09	14.6	3.3	9.0	9.0	0.0	0.0	0.0	0.0	0		<31
10	16.0	7.6	11.8	6.2	0.0	11.2	0.0	11.2	0	15E	52E
11	22.3	9.3	15.8	2.2	0.0	2.4	0.0	2.4	0	17E	46E
12	19.9	8.5	14.2	3.8	0.0	2.2	0.0	2.2	0	26E	52E
13	18.4	8.0	13.2	4.8	0.0	T	0.0	T	0	26E	52E
14	16.4	7.4	11.9	6.1	0.0	T	0.0	T	0		<31
15	20.7	8.2	14.5	3.5	0.0	19.4	0.0	19.4	0	27E	37E
16	13.1	8.7	10.9	7.1	0.0	2.0	0.0	2.0	0	31E	54E
17	24.4	9.3	16.9	1.1	0.0	0.0	0.0	0.0	0	24E	48E
18	24.7	12.0	18.4	0.0	0.4	T	0.0	T	0	25E	59E
19	24.1	13.4	18.8	0.0	0.8	0.0	0.0	0.0	0	25E	61E
20	23.0	13.7	18.4	0.0	0.4	0.2	0.0	0.2	0	25E	65E
21	24.9	14.9	19.9	0.0	1.9	1.2	0.0	1.2	0	24	46
22	24.2	10.9	17.6	0.4	0.0	0.0	0.0	0.0	0	24E	43E
23	23.4	10.9	17.2	0.8	0.0	4.0	0.0	4.0	0	23E	50E
24	21.6	15.7	18.7	0.0	0.7	11.6	0.0	11.6	0	22E	44E
25	18.7	14.6	16.7	1.3	0.0	0.6	0.0	0.6	0	25E	44E
26	21.7	13.6	17.7	0.3	0.0	26.2	0.0	26.2	0	24E	39E
27	24.8	13.5	19.2	0.0	1.2	1.2	0.0	1.2	0		<31
28	23.8	15.0	19.4	0.0	1.4	0.2	0.0	0.2	0	26E	78E
29	25.9	14.9	20.4	0.0	2.4	0.0	0.0	0.0	0	27E	56E
30	25.6	15.7	20.7	0.0	2.7	0.0	0.0	0.0	0	26E	46E
Sum				**120.4**	**11.9**	**102.6**	**0.0**	**102.6**			
Avg	**19.3**	**9.5**	**14.4**								
Xtrm	**25.9**	**-0.3**								**26E**	**78E**