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

Real Time Water Quality Monthly Report
Leary's Brook - St. John's NL
September 2006

General

- Data from the Leary's Brook 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.

  Table 1: Table of Datasonde removal and installation dates

Date Installed	Date Removed
	September 8, 2006
September 11, 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 September 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**.

Figure 1

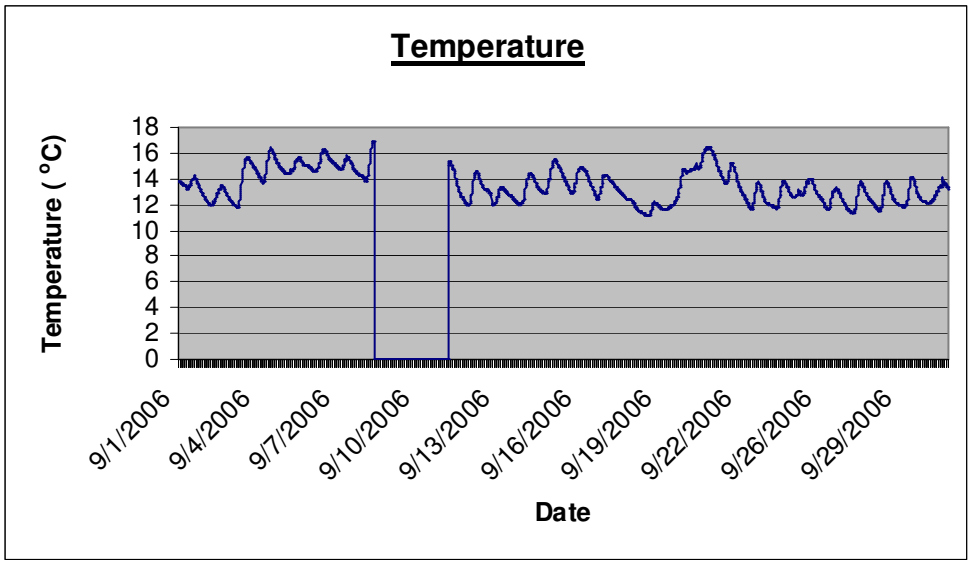
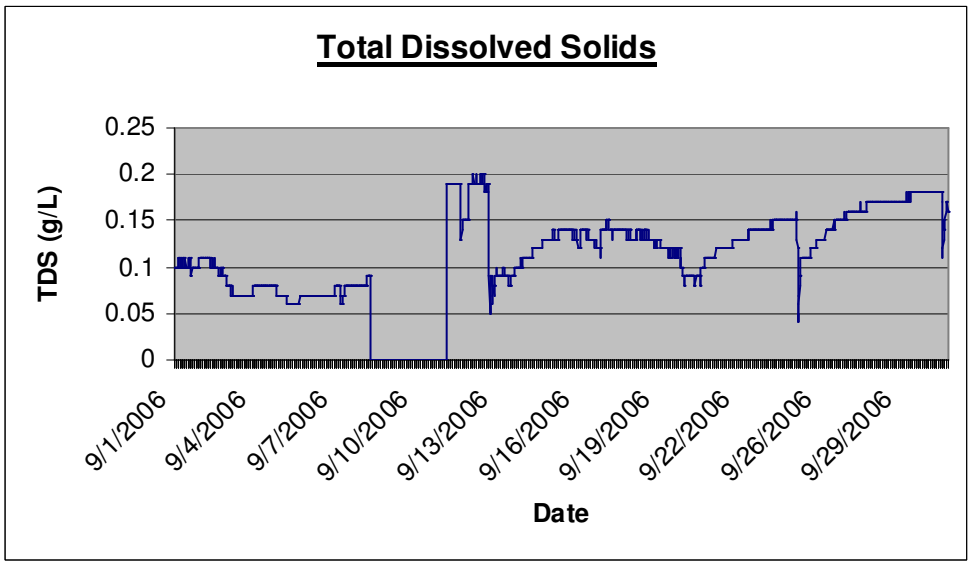
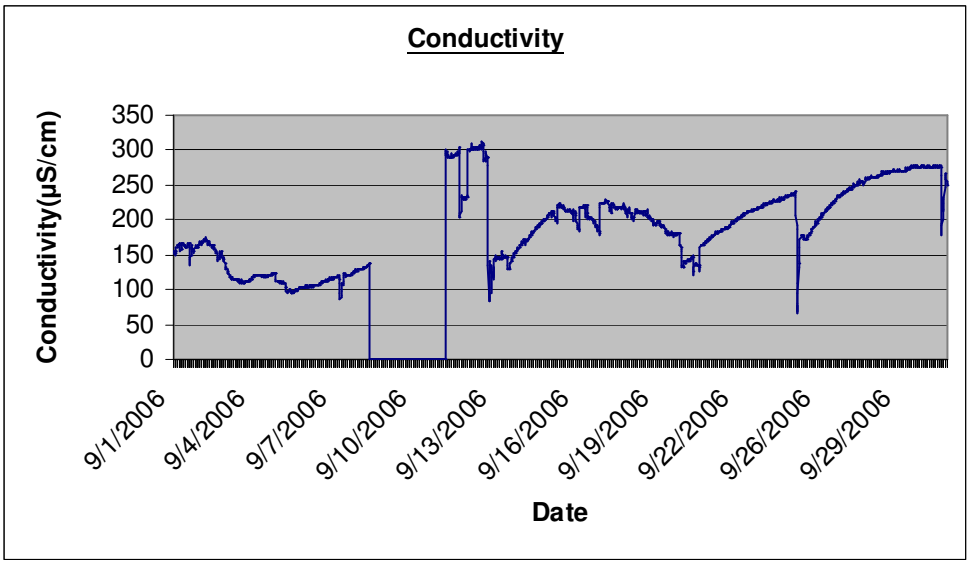


Figure 2



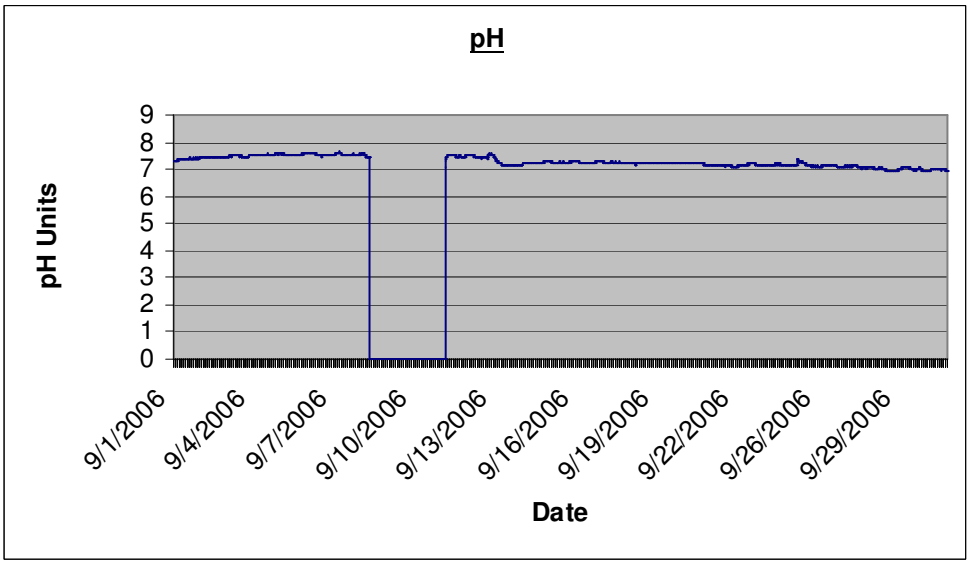
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



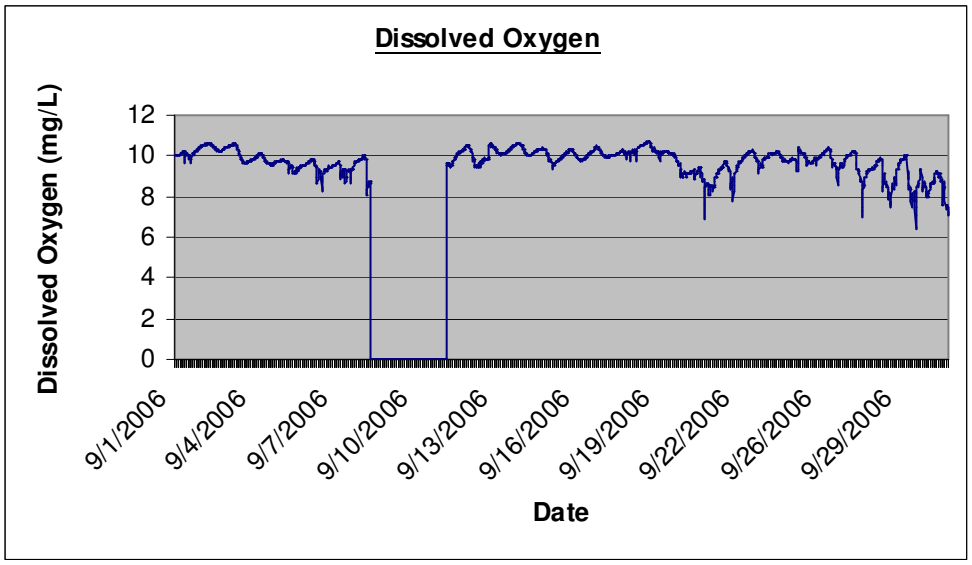
- Conductivity levels fluctuated throughout the month as observed in Figure 3 and responded to precipitation events.

Figure 4



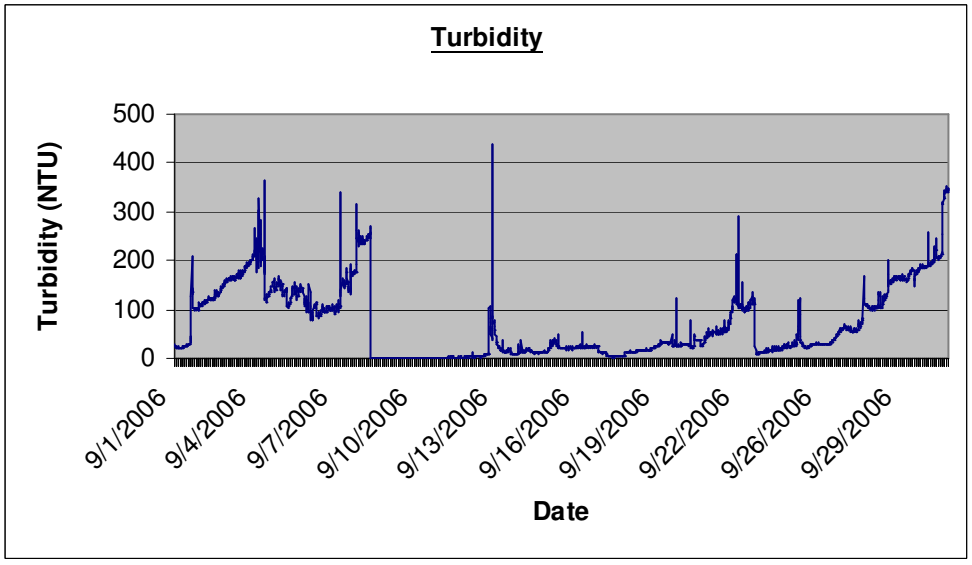
- The pH measurements were within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 (Figure 4).

Figure 5



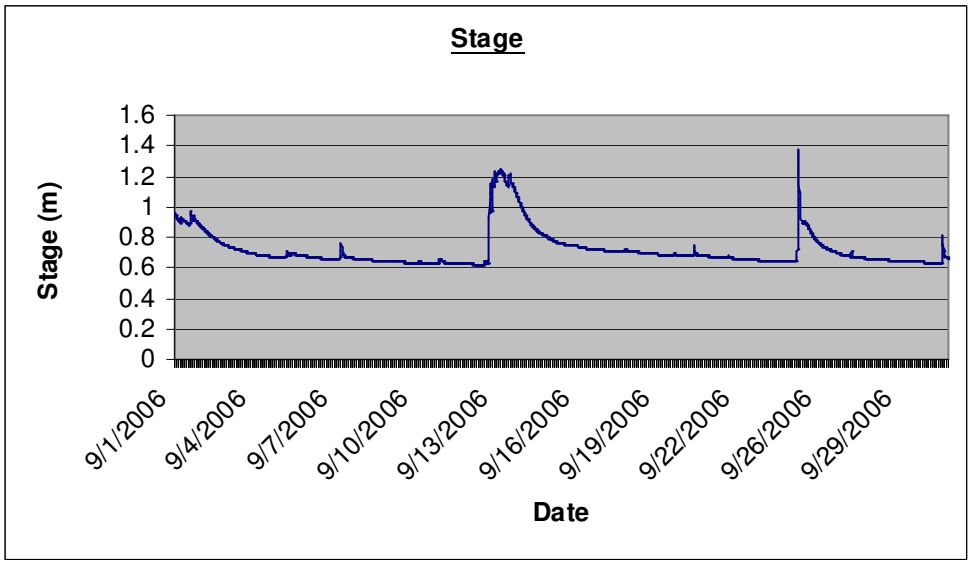
- During the month of September, dissolved oxygen measurements were stable and fluctuated in response to water temperatures changes.

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



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

Daily Data Report for September 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	8.5	11.0	7.0	0.0	10.8	0.0	10.8	0	7E	67E
02	14.2	7.9	11.1	6.9	0.0	0.6	0.0	0.6	0	35E	41E
03	22.8	9.5	16.2	1.8	0.0	0.0	0.0	0.0	0	26E	41E
04	23.5	12.5	18.0	0.0	0.0	0.8	0.0	0.8	0	24E	39E
05	19.2	13.1	16.2	1.8	0.0	4.0	0.0	4.0	0	18E	87E
06	20.9	13.0	17.0	1.0	0.0	1.0	0.0	1.0	0	26E	32E
07	15.8	11.2	13.5	4.5	0.0	2.0	0.0	2.0	0		<31
08	20.7	11.9	16.3	1.7	0.0	0.0	0.0	0.0	0	25E	35E
09	20.2	12.3	16.3	1.7	0.0	T	0.0	T	0		<31
10	21.0	12.1	16.6	1.4	0.0	0.4	0.0	0.4	0	25E	35E
11	14.1	5.8	10.0	8.0	0.0	5.4	0.0	5.4	0	33E	48E
12	16.7	5.5	11.1	6.9	0.0	1.0	0.0	1.0	0	9E	54E
13	15.6	10.0	12.8	5.2	0.0	48.0	0.0	48.0	0	8E	102E
14	20.7	10.2	15.5	2.5	0.0	0.0	0.0	0.0	0	31E	83E
15	20.1	11.9	16.0	2.0	0.0	0.0	0.0	0.0	0	27E	48E
16	20.2	8.7	14.5	3.5	0.0	0.0	0.0	0.0	0	27E	32E
17	15.7	6.5	11.1	6.9	0.0	T	0.0	T	0	25E	37E
18	11.4	6.2	8.8	9.2	0.0	1.4	0.0	1.4	0		<31
19	11.3	6.8	9.1	8.9	0.0	T	0.0	T	0		<31
20	22.4	11.1	16.8	1.2	0.0	1.6	0.0	1.6	0	15E	35E
21	21.9	12.1	17.0	1.0	0.0	T	0.0	T	0	22E	46E
22	16.0	7.3	11.7	6.3	0.0	0.0	0.0	0.0	0		<31
23	14.9	6.5	10.7	7.3	0.0	0.0	0.0	0.0	0	29E	32E
24	17.3	7.1	12.2	5.8	0.0	0.2	0.0	0.2	0	17E	56E
25	17.4	9.5	13.5	4.5	0.0	12.6	0.0	12.6	0	26E	67E
26	16.4	8.2	12.3	5.7	0.0	0.0	0.0	0.0	0	25E	37E
27	16.7	8.2	12.5	5.5	0.0	0.0	0.0	0.0	0	M	M
28	15.3	7.6	11.5	6.5	0.0	0.0	0.0	0.0	0		<31
29	15.9	7.2	11.6	6.4	0.0	0.0	0.0	0.0	0	15E	37E
30	16.9	10.4	13.7	4.3	0.0	5.0	0.0	5.0	0	17E	56E
Sum				**135.4**	**0.0**	**94.8**	**0.0**	**94.8**			