

**Real Time Water Quality Monthly Report
Leary's Brook - St. John's NL
June 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 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 30, 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

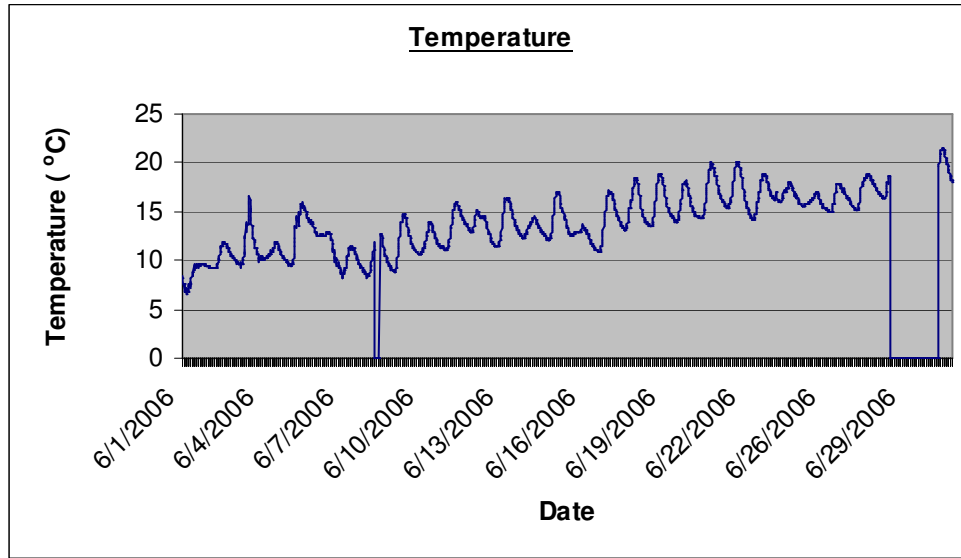
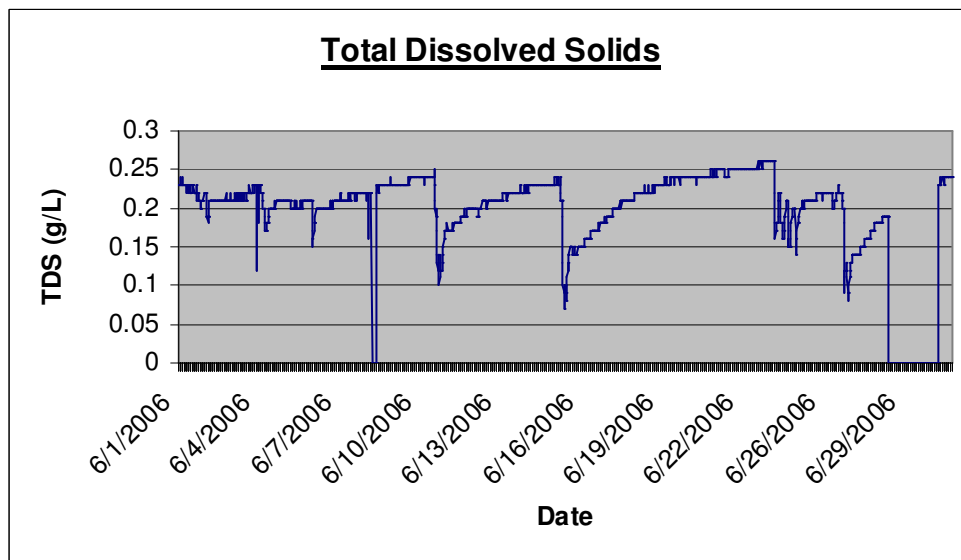
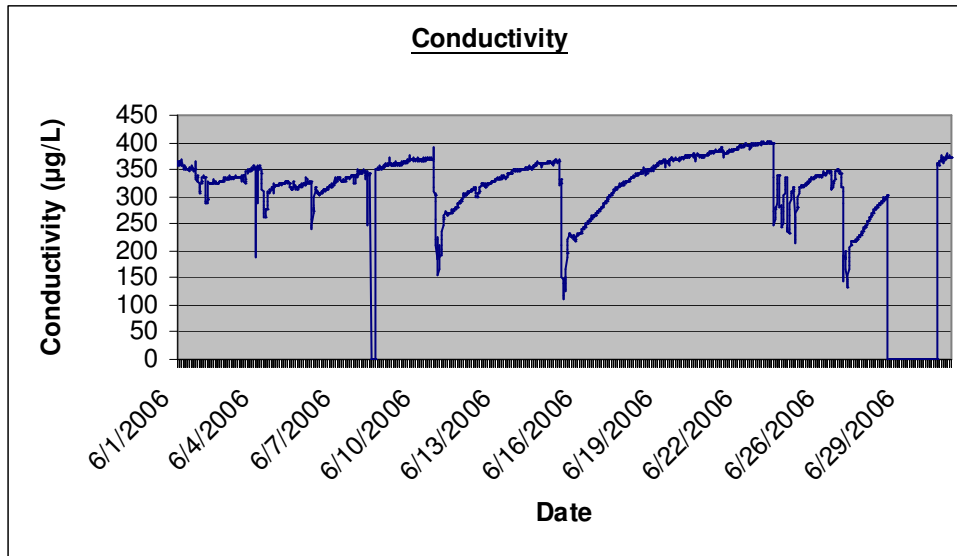


Figure 2



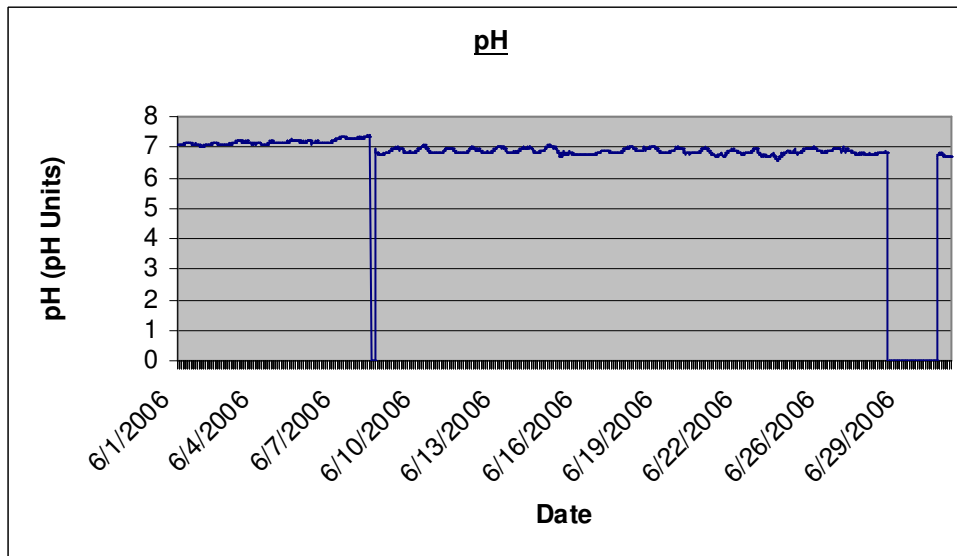
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



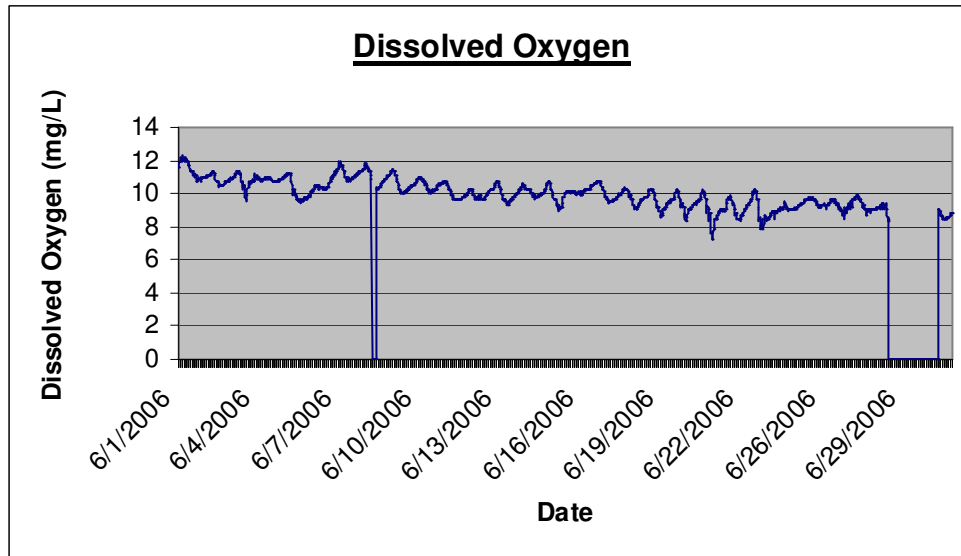
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



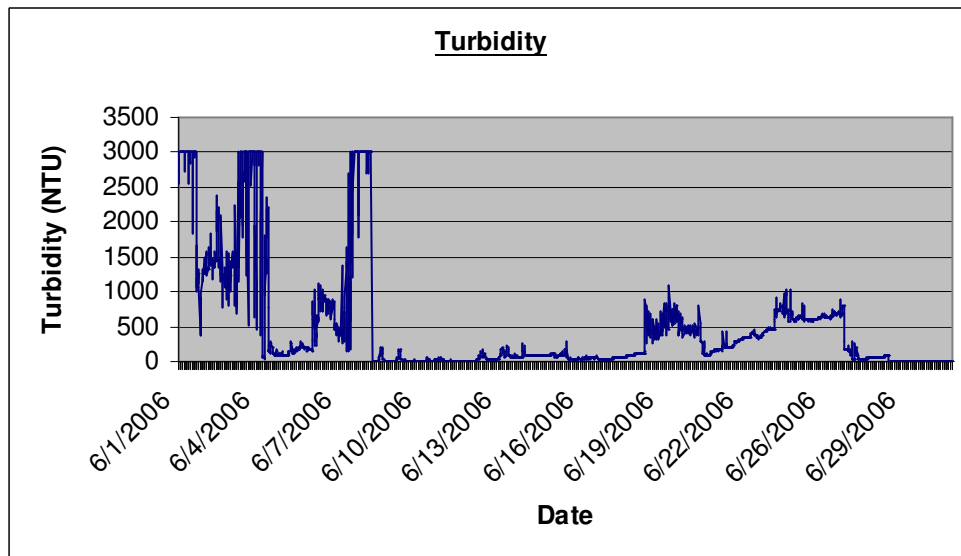
- The pH levels for the month of June were consistent. After the instrument was calibrated and replaced on June 8th, pH readings were lower than experienced earlier in the month. This difference is likely related to the calibration of the instrument. The pH measurements were within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9.

Figure 5



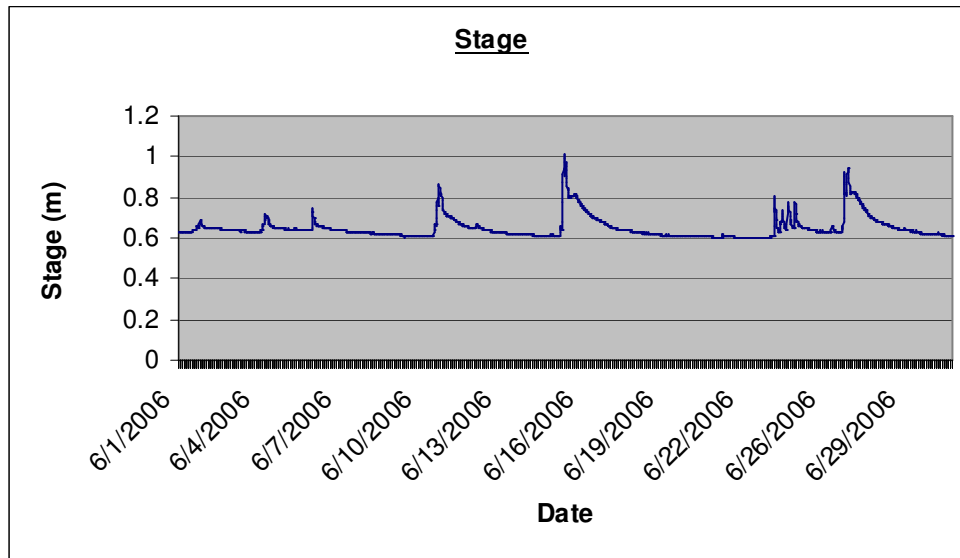
- During the month of June, dissolved oxygen measurements continued to show a decrease related to the increase in water temperature.

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
<u>01</u>	11.0	-0.3	5.4	12.6	0.0	3.0	0.0	3.0	0	17E	39E
<u>02</u>	14.4	7.7	11.1	6.9	0.0	T	0.0	T	0		<31
<u>03</u>	14.3	5.1	9.7	8.3	0.0	T	0.0	T	0		<31
<u>04</u>	10.1	5.1	7.6	10.4	0.0	4.8	0.0	4.8	0		<31
<u>05</u>	21.1	6.0	13.6	4.4	0.0	8.4	0.0	8.4	0	23E	59E
<u>06</u>	13.4	3.8	8.6	9.4	0.0	3.6	0.0	3.6	0	28E	39E
<u>07</u>	9.2	3.8	6.5	11.5	0.0	0.4	0.0	0.4	0		<31
<u>08</u>	12.1	3.3	7.7	10.3	0.0	0.0	0.0	0.0	0	9E	37E
<u>09</u>	14.6	3.3	9.0	9.0	0.0	0.0	0.0	0.0	0		<31
<u>10</u>	16.0	7.6	11.8	6.2	0.0	11.2	0.0	11.2	0	15E	52E
<u>11</u>	22.3	9.3	15.8	2.2	0.0	2.4	0.0	2.4	0	17E	46E
<u>12</u>	19.9	8.5	14.2	3.8	0.0	2.2	0.0	2.2	0	26E	52E
<u>13</u>	18.4	8.0	13.2	4.8	0.0	T	0.0	T	0	26E	52E
<u>14</u>	16.4	7.4	11.9	6.1	0.0	T	0.0	T	0		<31
<u>15</u>	20.7	8.2	14.5	3.5	0.0	19.4	0.0	19.4	0	27E	37E
<u>16</u>	13.1	8.7	10.9	7.1	0.0	2.0	0.0	2.0	0	31E	54E
<u>17</u>	24.4	9.3	16.9	1.1	0.0	0.0	0.0	0.0	0	24E	48E
<u>18</u>	24.7	12.0	18.4	0.0	0.4	T	0.0	T	0	25E	59E
<u>19</u>	24.1	13.4	18.8	0.0	0.8	0.0	0.0	0.0	0	25E	61E
<u>20</u>	23.0	13.7	18.4	0.0	0.4	0.2	0.0	0.2	0	25E	65E
<u>21</u>	24.9	14.9	19.9	0.0	1.9	1.2	0.0	1.2	0	24	46
<u>22</u>	24.2	10.9	17.6	0.4	0.0	0.0	0.0	0.0	0	24E	43E
<u>23</u>	23.4	10.9	17.2	0.8	0.0	4.0	0.0	4.0	0	23E	50E
<u>24</u>	21.6	15.7	18.7	0.0	0.7	11.6	0.0	11.6	0	22E	44E
<u>25</u>	18.7	14.6	16.7	1.3	0.0	0.6	0.0	0.6	0	25E	44E
<u>26</u>	21.7	13.6	17.7	0.3	0.0	26.2	0.0	26.2	0	24E	39E
<u>27</u>	24.8	13.5	19.2	0.0	1.2	1.2	0.0	1.2	0		<31
<u>28</u>	23.8	15.0	19.4	0.0	1.4	0.2	0.0	0.2	0	26E	78E
<u>29</u>	25.9	14.9	20.4	0.0	2.4	0.0	0.0	0.0	0	27E	56E
<u>30</u>	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