

**Real Time Water Quality Monthly Report
Leary's Brook - St. John's NL
August 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
	August 8, 2007
August 8, 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 display 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 August 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**. Towards the end of the month, a cooling trend was observed in response to cooler air temperatures.

Figure 1

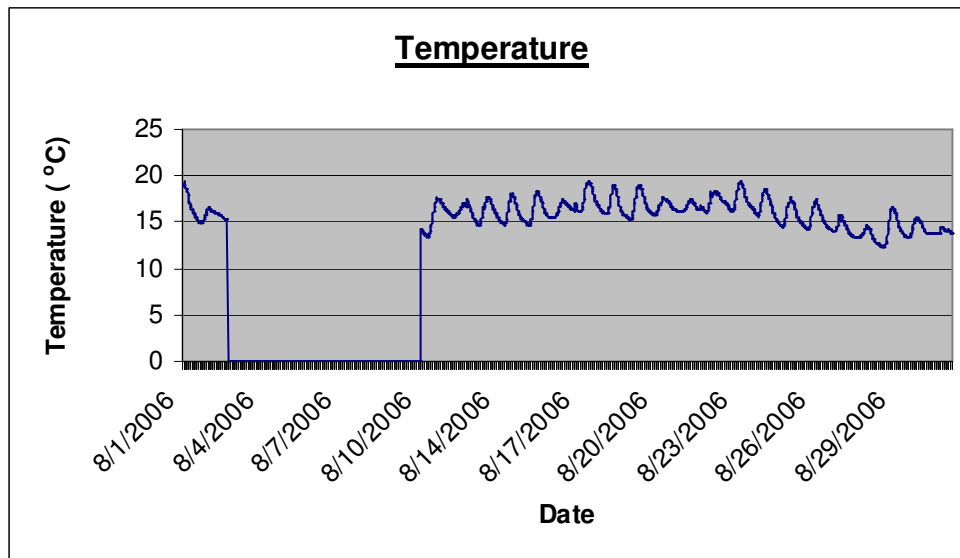
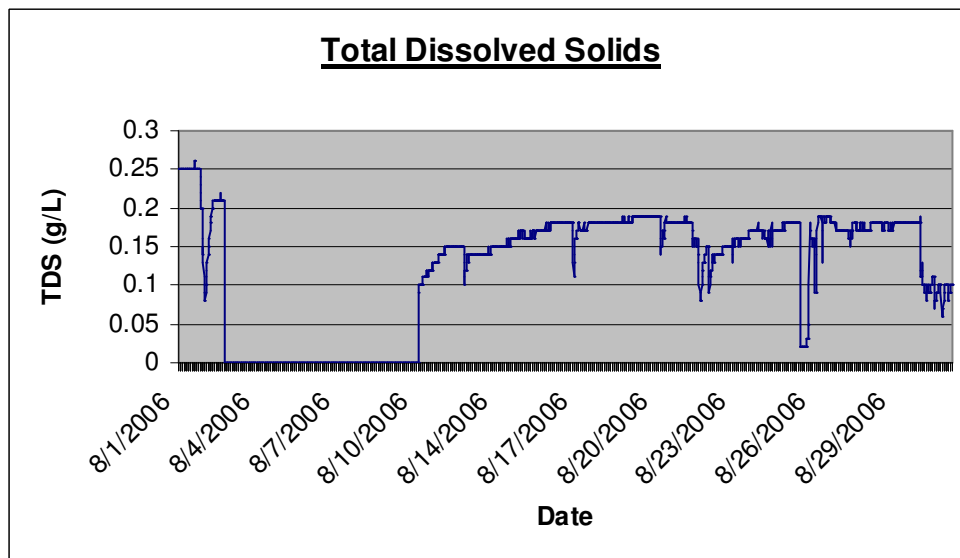
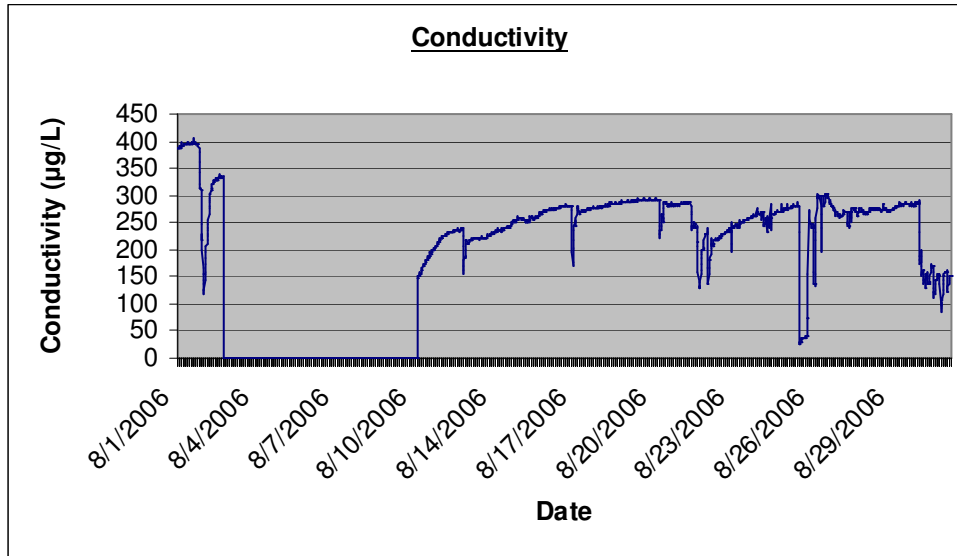


Figure 2



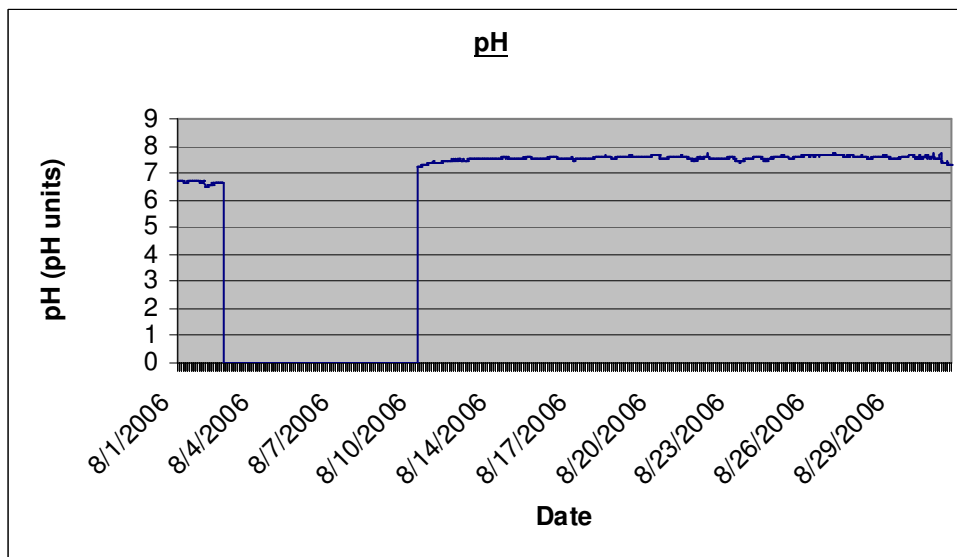
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



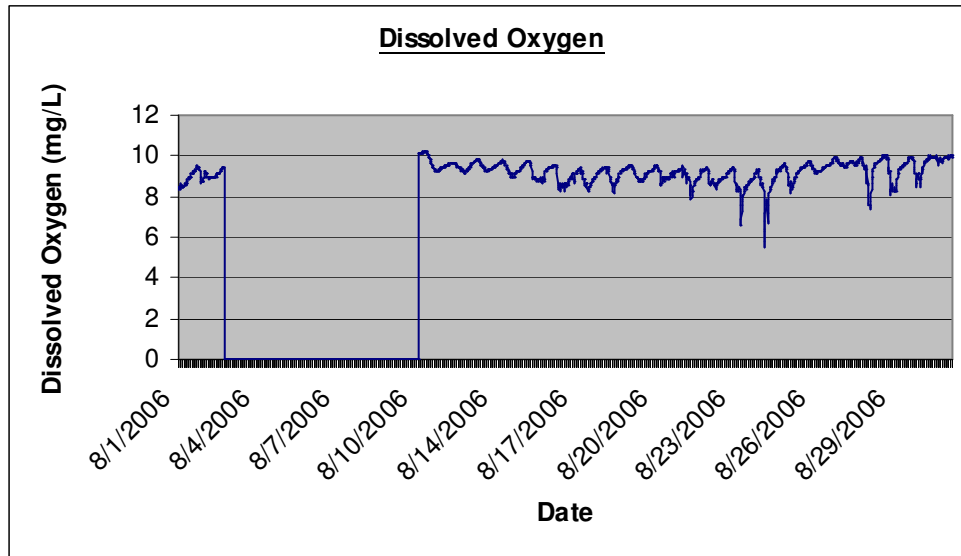
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



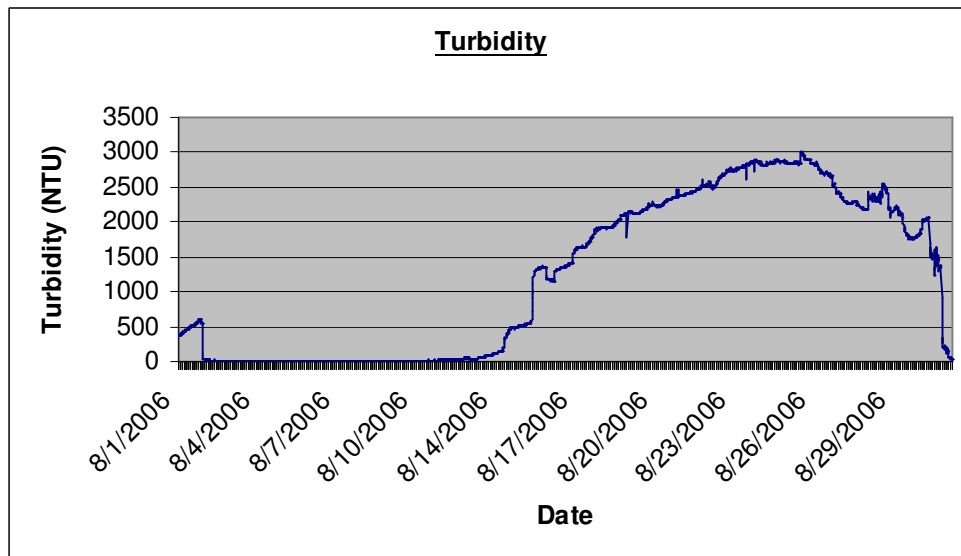
- The pH measurements were within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 (Figure 4). Higher pH measurements that occurred after redeployment of the Datasonde on August 8 were most likely due to a calibration issue.

Figure 5



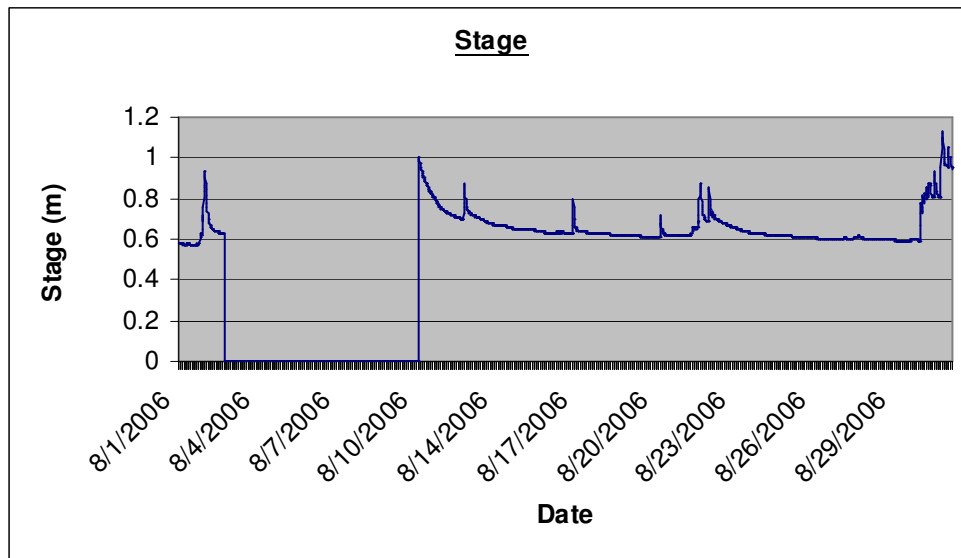
- During the month of August, dissolved oxygen measurements responded to changes in water temperature. Slightly lower DO values occurred during mid month and higher DO values occurred with cooler air temperatures during the end of the month.

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. Turbidity values exceeded the CCME recommended maximum of 8 NTU above background levels for most of the last two weeks of August. High turbidity values that occurred during this time are likely the result of something blocking the turbidity sensor since the high values were continuous over the last two weeks of August and there was no turbidity response to the precipitation event on August 31.

Figure 7













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

Daily Data Report for August 2006											
D a y	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>	20.5	11.8	16.2	1.8	0.0	T	0.0	T	0	29E	44E
<u>02</u>	18.0	11.8	14.9	3.1	0.0	14.2	0.0	14.2	0	18E	46E
<u>03</u>	15.3	10.6	13.0	5.0	0.0	0.0	0.0	0.0	0		<31
<u>04</u>	15.5	10.3	12.9	5.1	0.0	0.0	0.0	0.0	0		<31
<u>05</u>	16.7	11.8	14.3	3.7	0.0	6.8	0.0	6.8	0	16E	33E
<u>06</u>	22.9	12.7	17.8	0.2	0.0	0.0	0.0	0.0	0		<31
<u>07</u>	24.7	10.6	17.7	0.3	0.0	0.0	0.0	0.0	0	25E	50E
<u>08</u>	23.2	13.9	18.6	0.0	0.6	0.0	0.0	0.0	0	18E	52E
<u>09</u>	18.9	14.2	16.6	1.4	0.0	5.0	0.0	5.0	0	15E	52E
<u>10</u>	15.5	12.5	14.0	4.0	0.0	49.0	0.0	49.0	0	36E	32E
<u>11</u>	23.7	11.6	17.7	0.3	0.0	0.0	0.0	0.0	0	17	35
<u>12</u>	17.9	12.9	15.4	2.6	0.0	3.6	0.0	3.6	0	24E	41E
<u>13</u>	20.5	11.2	15.9	2.1	0.0	0.0	0.0	0.0	0	15E	32E
<u>14</u>	21.4	11.2	16.3	1.7	0.0	T	0.0	T	0	25E	32E
<u>15</u>	22.4	13.1	17.8	0.2	0.0	0.0	0.0	0.0	0		<31
<u>16</u>	22.2	15.3	18.8	0.0	0.8	1.8	0.0	1.8	0	22E	46E
<u>17</u>	22.6	13.1	17.9	0.1	0.0	0.0	0.0	0.0	0		<31
<u>18</u>	18.9	10.7	14.8	3.2	0.0	T	0.0	T	0		<31
<u>19</u>	23.5	13.4	18.5	0.0	0.5	0.0	0.0	0.0	0	25E	41E
<u>20</u>	20.1	16.0	18.1	0.0	0.1	0.6	0.0	0.6	0	25E	44E
<u>21</u>	19.6	15.2	17.4	0.6	0.0	13.0	0.0	13.0	0		<31
<u>22</u>	20.9	15.0	18.0	0.0	0.0	5.6	0.0	5.6	0	26E	37E
<u>23</u>	23.8	14.3	19.1	0.0	1.1	0.6	0.0	0.6	0	25E	33E
<u>24</u>	22.7	12.2	17.5	0.5	0.0	0.0	0.0	0.0	0	26E	39E
<u>25</u>	20.5	10.6	15.6	2.4	0.0	0.0	0.0	0.0	0	26E	37E
<u>26</u>	17.8	10.2	14.0	4.0	0.0	0.0	0.0	0.0	0	4E	32E
<u>27</u>	14.6	9.2	11.9	6.1	0.0	T	0.0	T	0	36E	33E
<u>28</u>	12.8	8.4	10.6	7.4	0.0	1.2	0.0	1.2	0	1E	41E
<u>29</u>	19.3	6.8	13.1	4.9	0.0	0.0	0.0	0.0	0		<31
<u>30</u>	16.6	7.7	12.2	5.8	0.0	9.0	0.0	9.0	0	11E	46E
<u>31</u>	14.1	12.6	13.4	4.6	0.0	29.0	0.0	29.0	0	15E	37E
Sum				71.1	3.1	139.4	0.0	139.4			