

**Real Time Water Quality Monthly Report
Leary's Brook - St. John's NL
May 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 May. A second Hydrolab was used to replace the one that was removed on May 8, 2006.
Table 1: Table of Datasonde removal and installation dates

Date Installed	Date Removed
-----	May 8, 2006
May 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 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

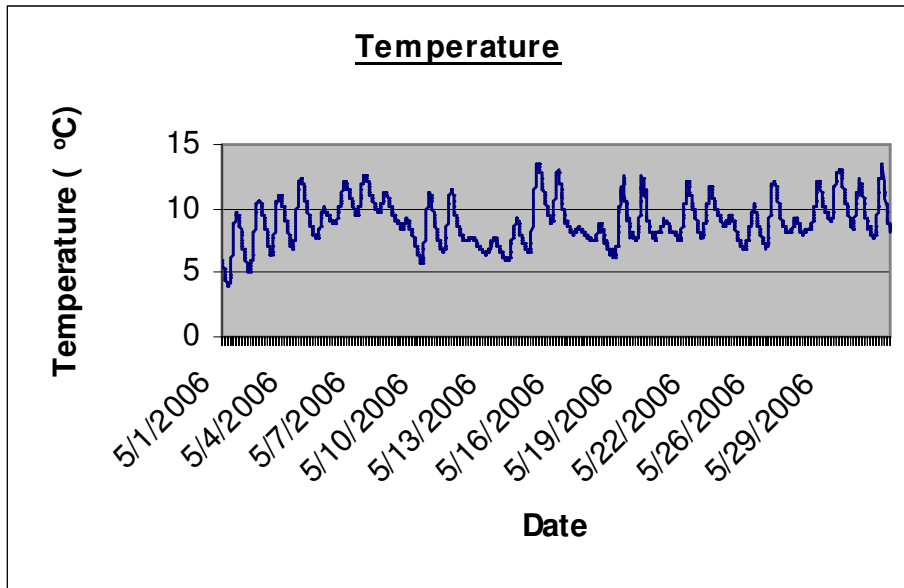
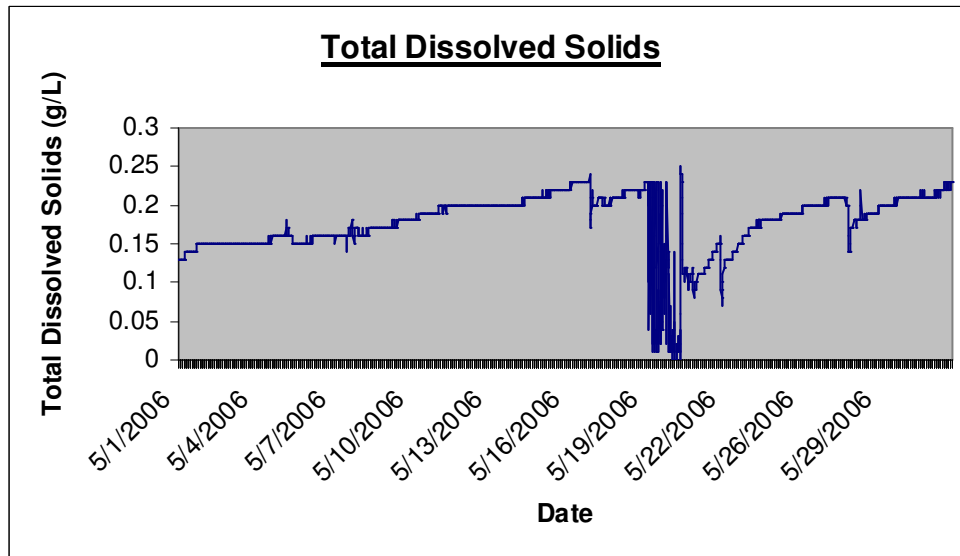
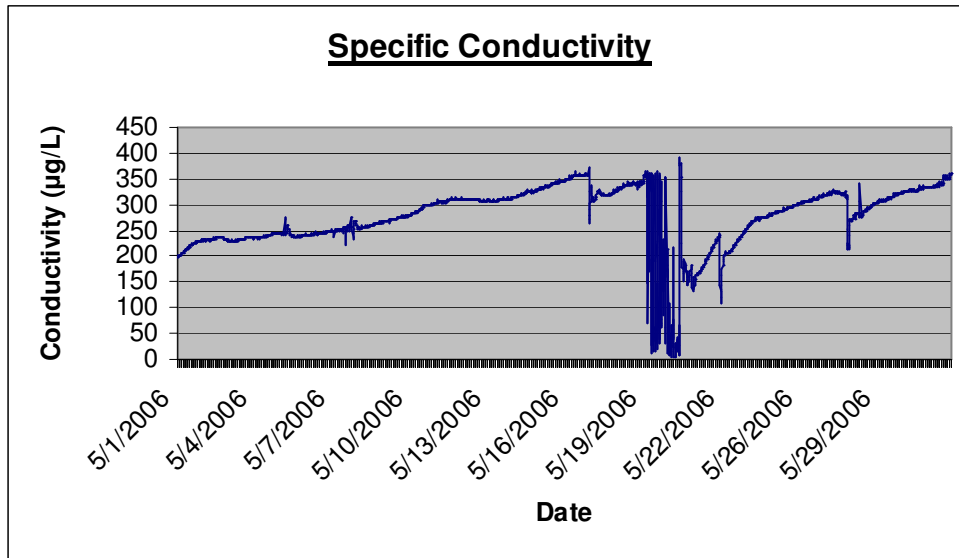


Figure 2



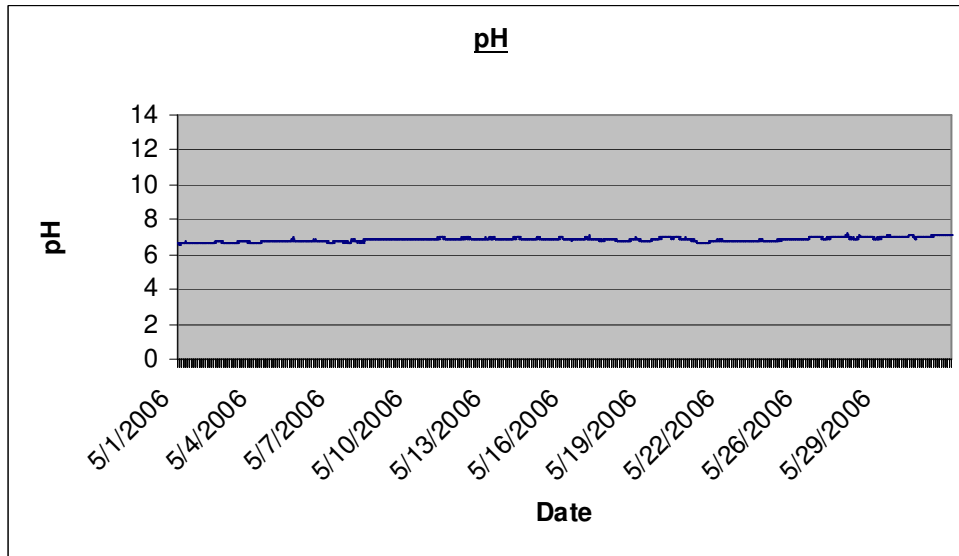
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



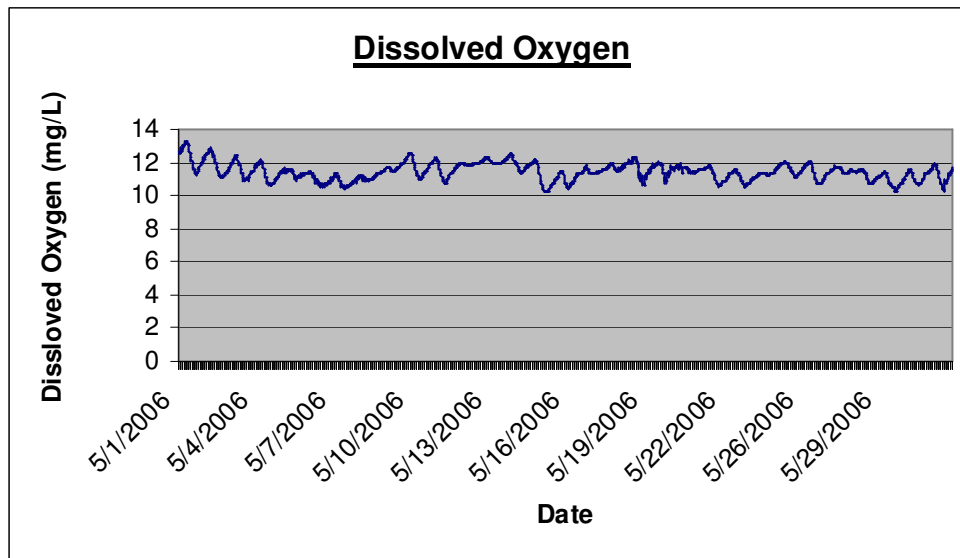
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



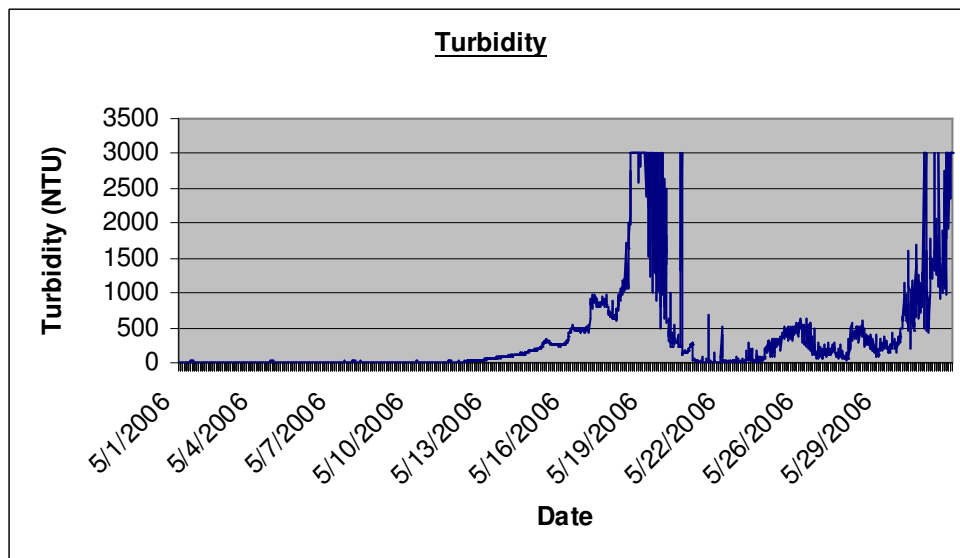
- The pH levels had slight fluctuations throughout the month of May. The pH measurements were generally within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 (Figure 4).

Figure 5



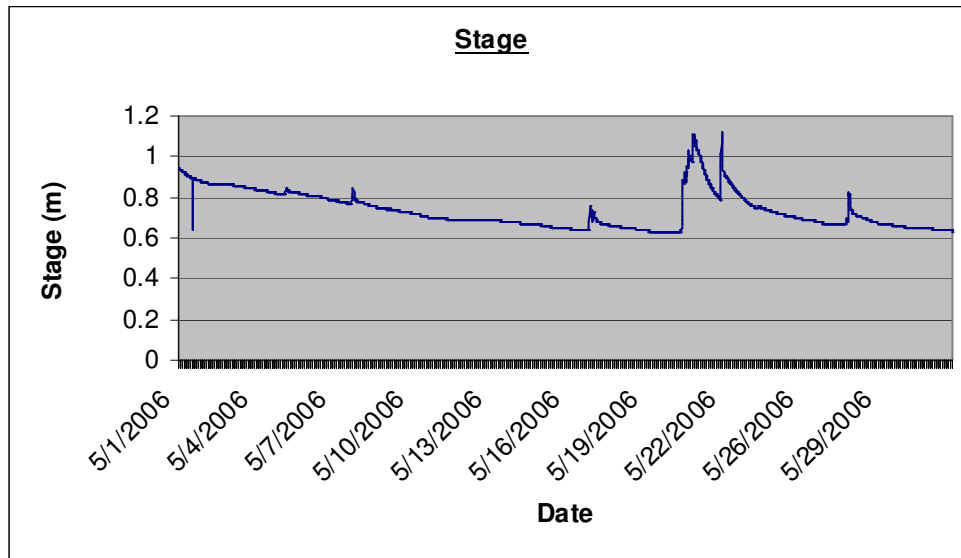
- During the month of May, dissolved oxygen measurements started to decrease towards the end of the month with the increase in water temperature.

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



Report prepared by:

Kent Slaney
Environmental Scientist
Water Resources Management Division
Department of Environment and Conservation
Confederation Building West Block 4th Floor
PO Box 8700
St. John's NL A1B 4J6

Ph. (709) 729-1157
Fax (709) 729-0320

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

Daily Data Report for May 2006											
<u>D</u> <u>a</u> <u>y</u>	<u>Max</u> <u>Temp</u> <u>°C</u>	<u>Min</u> <u>Temp</u> <u>°C</u>	<u>Mean</u> <u>Temp</u> <u>°C</u>	<u>Heat Deg</u> <u>Days</u> <u>C</u>	<u>Cool Deg</u> <u>Days</u> <u>C</u>	<u>Total</u> <u>Rain</u> <u>mm</u>	<u>Total</u> <u>Snow</u> <u>cm</u>	<u>Total</u> <u>Precip</u> <u>mm</u>	<u>Snow on</u> <u>Grnd</u> <u>cm</u>	<u>Dir of Max</u> <u>Gust</u> <u>10's Deg</u>	<u>Spd of Max</u> <u>Gust</u> <u>km/h</u>
<u>01</u>	13.5	-1.5	6.0	12.0	0.0	0.0	0.0	0.0	0	27E	56E
<u>02</u>	19.1	1.5	10.3	7.7	0.0	0.0	0.0	0.0	0		<31
<u>03</u>	15.6	1.6	8.6	9.4	0.0	0.0	0.0	0.0	0		<31
<u>04</u>	20.7	4.8	12.8	5.2	0.0	0.0	0.0	0.0	0		<31
<u>05</u>	13.4	4.4	8.9	9.1	0.0	1.4	0.0	1.4	0		<31
<u>06</u>	19.6	10.0	14.8	3.2	0.0	0.0	0.0	0.0	0		<31
<u>07</u>	16.1	8.0	12.1	5.9	0.0	2.2	0.0	2.2	0	16E	37E
<u>08</u>	13.0	4.6	8.8	9.2	0.0	0.8	0.0	0.8	0		<31
<u>09</u>	6.6	0.6	3.6	14.4	0.0	T	0.0	T	0		<31
<u>10</u>	9.2	0.6	4.9	13.1	0.0	0.0	0.0	0.0	0		<31
<u>11</u>	6.9	-0.3	3.3	14.7	0.0	T	0.0	T	0		<31
<u>12</u>	4.3	2.4	3.4	14.6	0.0	1.0	0.0	1.0	0	36E	43E
<u>13</u>	4.9	1.8	3.4	14.6	0.0	0.4	0.0	0.4	0	36E	41E
<u>14</u>	7.8	2.0	4.9	13.1	0.0	T	0.0	T	0	36E	32E
<u>15</u>	23.5	4.6	14.1	3.9	0.0	0.0	0.0	0.0	0	26E	41E
<u>16</u>	7.6	1.9	4.8	13.2	0.0	T	0.0	T	0		<31
<u>17</u>	5.1	2.4	3.8	14.2	0.0	6.2	0.0	6.2	0		<31
<u>18</u>	6.0	3.4	4.7	13.3	0.0	0.2	0.0	0.2	0		<31
<u>19</u>	10.6	2.3	6.5	11.5	0.0	0.0	0.0	0.0	0		<31
<u>20</u>	11.8	2.3	7.1	10.9	0.0	T	0.0	T	0	15E	48E
<u>21</u>	9.2	5.2	7.2	10.8	0.0	29.8	0.0	29.8	0	13E	56E
<u>22</u>	15.5	4.9	10.2	7.8	0.0	11.4	0.0	11.4	0	21E	69E
<u>23</u>	12.8	4.9	8.9	9.1	0.0	T	0.0	T	0	25E	78E
<u>24</u>	8.3	2.0	5.2	12.8	0.0	1.6	0.0	1.6	0	34E	35E
<u>25</u>	8.6	2.0	5.3	12.7	0.0	0.8	0.0	0.8	0		<31
<u>26</u>	14.3	2.4	8.4	9.6	0.0	0.0	0.0	0.0	0	23E	35E
<u>27</u>	10.7	3.3	7.0	11.0	0.0	4.4	0.0	4.4	0	17E	83E
<u>28</u>	14.6	5.0	9.8	8.2	0.0	0.4	0.0	0.4	0	25E	41E
<u>29</u>	15.8	2.0	8.9	9.1	0.0	0.0	0.0	0.0	0	26E	52E
<u>30</u>	9.6	1.5	5.6	12.4	0.0	0.6	0.0	0.6	0	32E	37E
<u>31</u>	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			