Government of Newfoundland and Labrador

Real Time Water Quality Monthly Report for Voisey's Bay Nickel Company Ltd. June 2005

General

- By late-May, the ice in the rivers was breaking up and the conditions were suitable for deployment of the three Datasondes.
- The three Datasondes were taken out of winter storage on May 24th and sent to Voisey's Bay by Department of Environment and Conservation staff. The instruments were cleaned and calibrated and all sensors calibrated properly.
- On May 31st, all three instruments were deployed. The Minisonde readings were not taken because the battery for the surveyor was not charged prior to fieldwork.
- Upon analysing the data and real-time graphs, it was determined that the turbidity and dissolved oxygen for Upper Reid Brook was not recording. Through discussions with Department of Environment and Conservation and Environment Canada it was determined that the timing for the transmission of data for Upper Reid brook was programmed too late into the allotted time slot for satellite transmission. This leads to the turbidity and dissolved oxygen data not transmitting to be viewed on the website. It is important to note that the data is still being stored on the datalogger. This type of problem with the data logger programming can only be fixed on-site when the Environment Canada staff is working in Voisey's Bay. It is important to note that data will saved from the datalogger when Environment Canada return to Voisey's Bay in July and given to Department of Environment and Conservation for analysis.
- Environment Canada staff and Department of Environment and Conservation staff will tentatively be on-site the week of July 19th to re-program the data loggers to ensure the data for Upper Reid Brook is transmitted for real-time analysis.

Data Interpretation

- Throughout the month of June, most water quality parameters at the Upper Reid Brook station remained steady at expected background levels. As can be seen by the graphs taken from the web page, pH and conductivity (Figures 1 & 2) remained very consistent throughout the month.

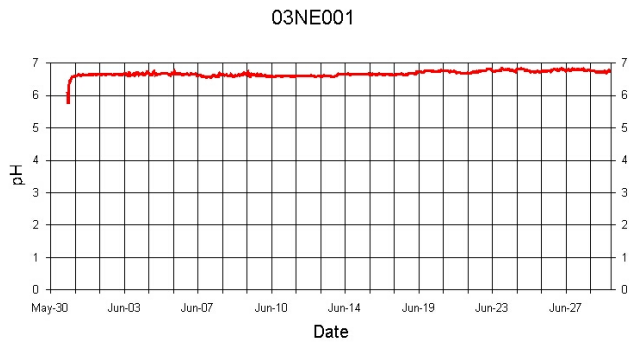

Figure 1

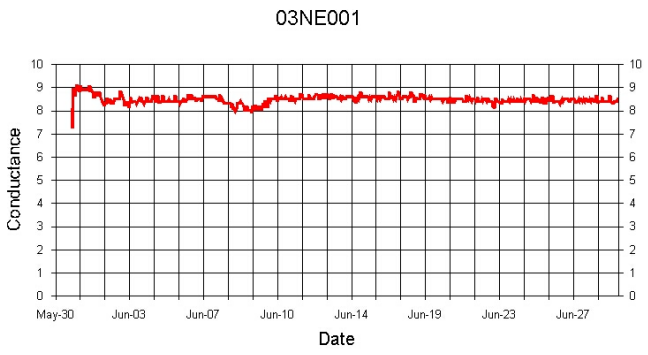

Figure 2

- Temperature, as expected for this time of year, showed an increase with some fluctuations. (Figure 3).

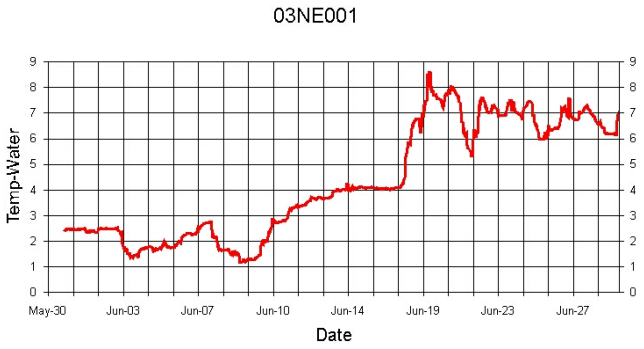

Figure 3

- There are no readings for turbidity and dissolved oxygen for Upper Reid Brook due to the issue with the time of transmissions discussed previously.
- Throughout the month of June, the pH in Camp Pond Brook remained consistent while conductivity showed a slight increase in June. There is no explanation for this observation at this time. (Figure 4 & 5).

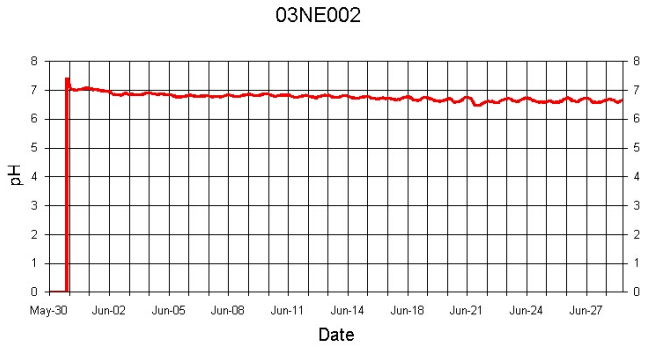

Figure 4

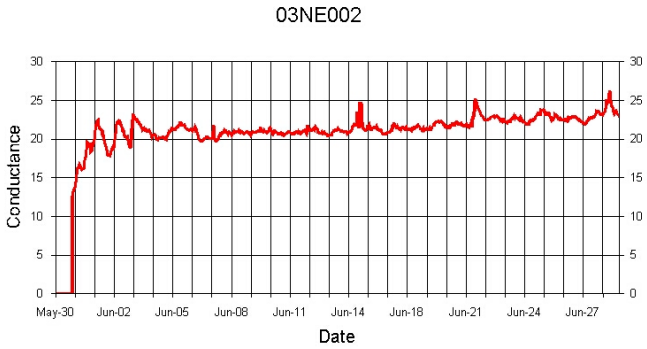

Figure 5

- Temperature, as expected for this time of year, showed an increase with some fluctuations. (Figure 6). The dissolved oxygen showed a gradual decrease which is consistent with the increase in temperature. (Figure 7).

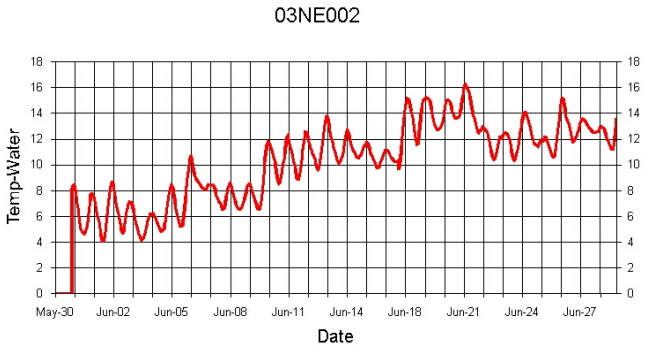

Figure 6

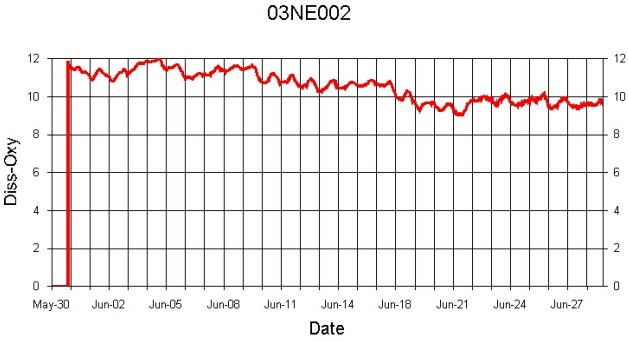

Figure 7

- Throughout the majority of June, turbidity in Camp Pond Brook showed relatively small spikes that are consistent with readings seen last year at the same station (Figure 8). When the turbidity values

at Camp Pond Brook and Upper Reid Brook were compared in 2004, it was evident that the construction around the area of the Camp Pond Brook site did cause a slight increase in the turbidity values from background values. A comparison of Upper Reid and Camp Pond Brook will be completed when data from the datalogger is available in July to confirm the same situation as 2004. During the period from June 18th – 22nd, turbidity spikes were evident in the range from 35-45 NTU. There is no explanation for this event at this time.

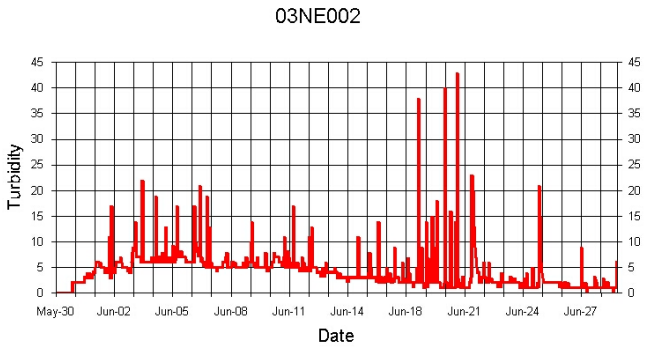

Figure 8

- Throughout the month of June, the pH in Camp Pond Brook remained consistent (Figure 9).

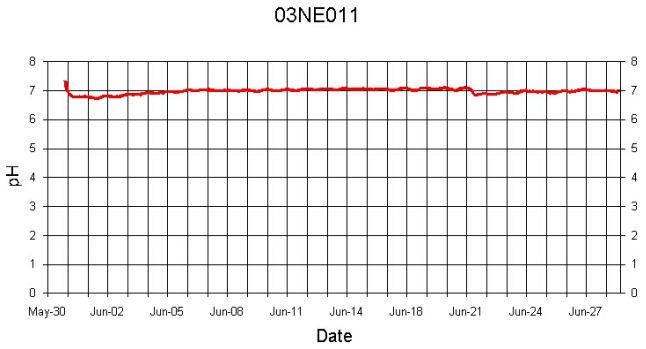

Figure 9

- There was an increase in conductivity in the month of June (Figure 10) until June 17th when levels began to stay consistent.

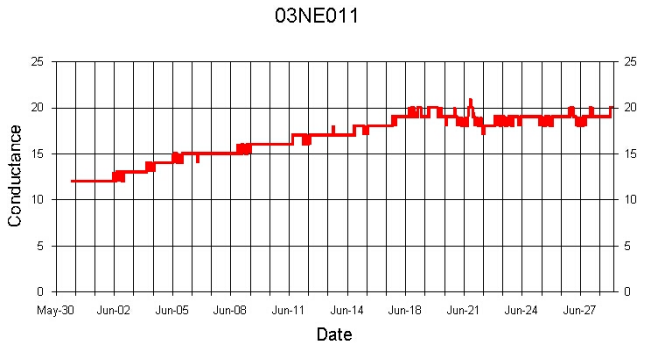

Figure 10

- Temperature, as expected for this time of year, showed an increase with some fluctuations. (Figure 11). The dissolved oxygen showed a gradual decrease which is consistent with the increase in temperature. (Figure 12).

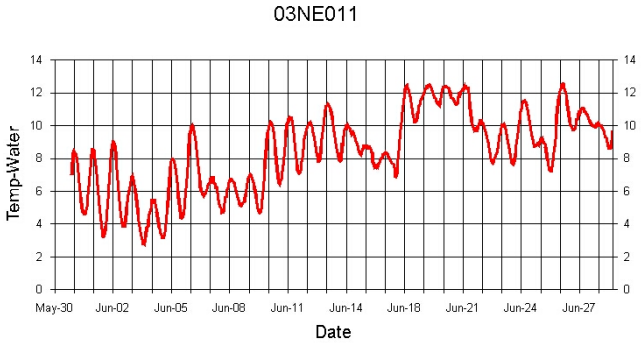

Figure 11

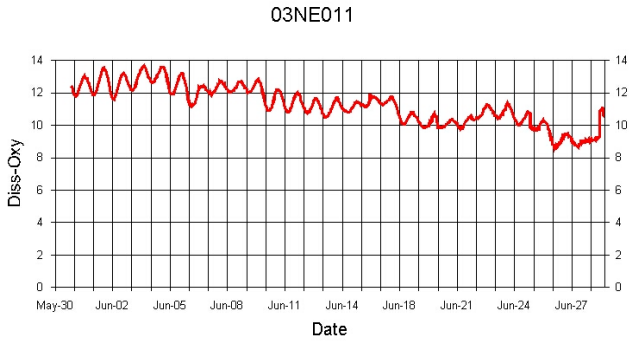

Figure 12

- Turbidity values for June remained consistent with values seen in 2004 with the exception of one larger spike of 55 NTU on June 21st (Figure 13). This spike could be related to the spikes seen at Camp Pond Brook during June 18th – 22nd but there is no explanation for this event at this time.

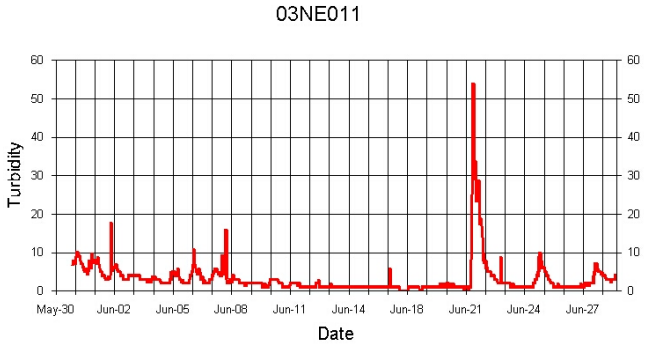

Figure 13

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