

**Real Time Water Quality Monthly Report  
Rattling Brook below Bridge (VBNC)  
December 2006-January 2007**

**General**

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Voisey’s Bay Nickel Company (VBNC). will be informed of any significant water quality events in the future in the form of a monthly report.
- The initial installation of the RTWQ instrumentation at Rattling Brook below Bridge occurred on December 12<sup>th</sup>, 2006. Pictures of the installation site are in **Appendix A**.

**Maintenance and Calibration of Instrumentation**

- The instrument at Rattling Brook was initially installed on December 12<sup>th</sup>, 2006. The comparison of Minisonde values to the Datasonde values as is regularly completed for QA/QC data comparison ranking is not available. No Minisonde readings were taken at the time of installation because the battery in the data collector died due to cold weather.
- The Rattling Brook instrument was deployed until January 23<sup>rd</sup>, 2007 (42-day deployment period) at which point it was removed for maintenance and calibration. The results from comparing the Minisonde values to the Datasonde values during removal on January 23<sup>rd</sup> can be seen in **Table 1**.

**Table 1: QA/QC Data Comparison Rankings upon removal on January 23<sup>rd</sup>, 2006**

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	January 23 <sup>rd</sup> , 2006	Removal	Excellent	Marginal	Excellent	Excellent

- The removal of the instrument at Rattling Brook on January 23<sup>rd</sup>, 2006 showed the temperature, conductivity and dissolved oxygen probes still showing excellent QA/QC rankings. The pH probe however, showed a marginal QA/QC rating. This could have been caused by the loss of calibration over the deployment period.

## Data Interpretation

- This monthly report interprets the data from the Rattling Brook RTWQ station in Long Harbour for the period of December 12<sup>th</sup>, 2006 – January 23<sup>rd</sup>, 2007.
- The water temperature (**Figure 1**) readings for Rattling Brook remained fairly consistent over the deployment period with a slight decrease in temperatures. This is expected at this time of the year with a temperature range of -0.28 - 3.02 °C.

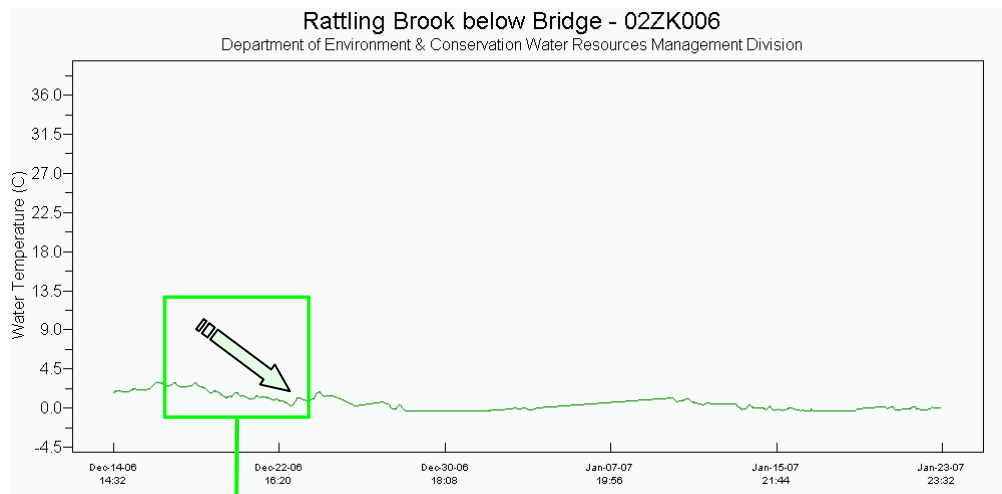


Figure 1

- The dissolved oxygen values (**Figure 2**) remained fairly consistent over the deployment period with a slight increase in values. This is consistent with the slight decrease in temperature seen in **Figure 1**. The dissolved oxygen values ranged from 13.12 mg/L to 15.19 mg/L. These values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6; cold water/early life stages – 9.5 mg/L).

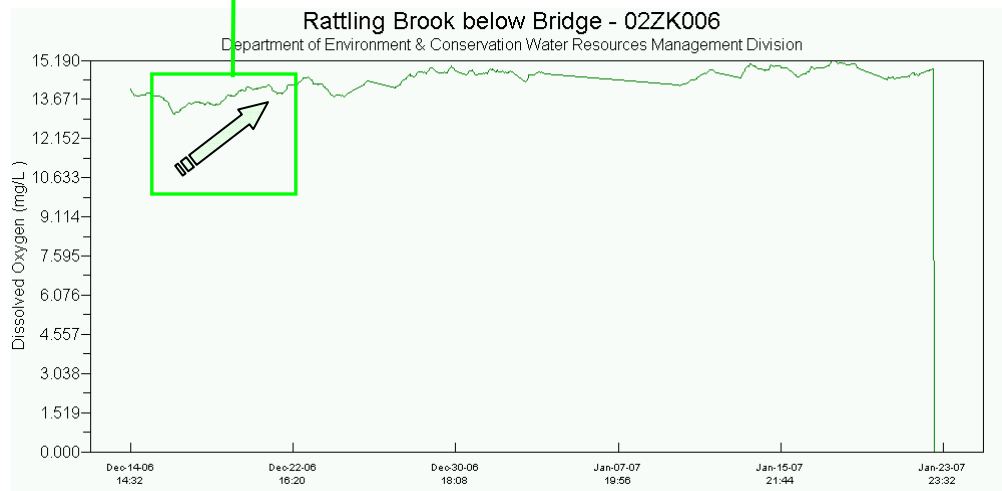
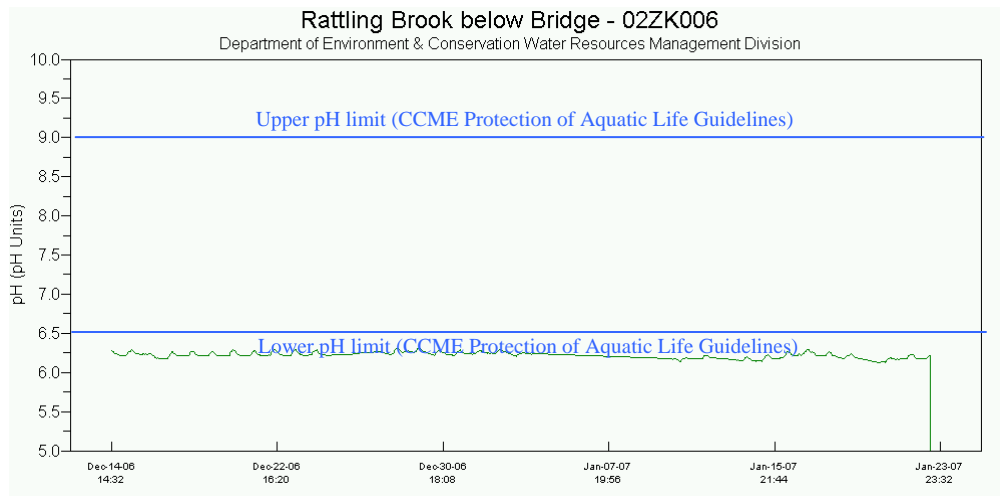


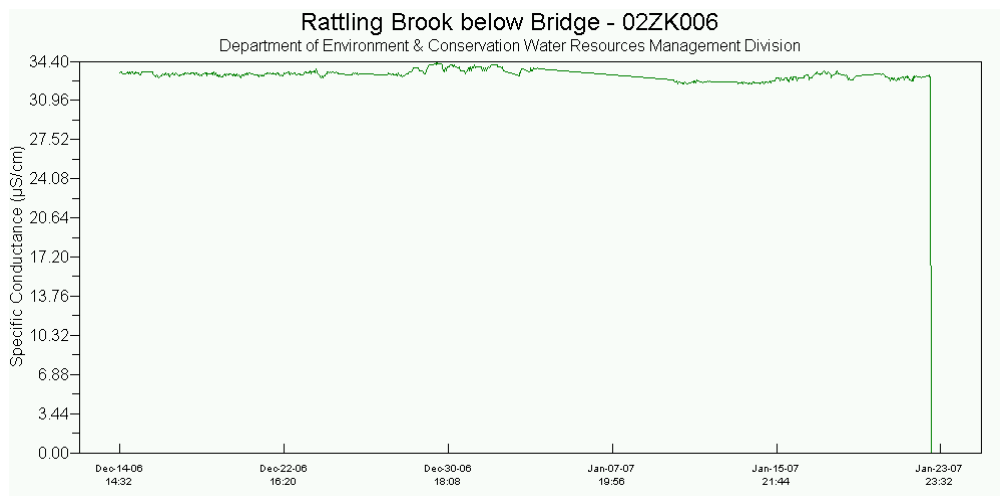
Figure 2

- The pH values (**Figure 3**) for Rattling Brook station remained consistent throughout the deployment period. The pH values ranged from 6.13 – 6.31 with all values falling outside the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines due to the naturally acidic nature of NL waters.



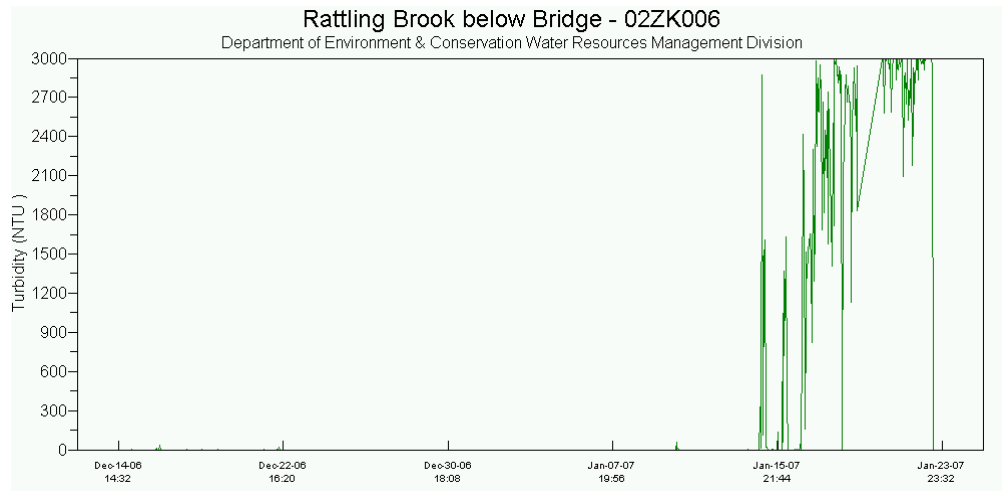
**Figure 3**

- The specific conductivity values (**Figure 4**) remained consistent throughout the deployment period with values ranged from 32.4 – 34.4  $\mu\text{S}/\text{cm}$ .



**Figure 4**

- The turbidity values (**Figure 5**) remained near 0 NTU until January 15<sup>th</sup>, 2007. The turbidity values after that date reached the maximum measurable values for the instrument of 3000 NTU. This was likely due to the alga/plant material that was found intertwined on the turbidity sensor when the instrument was removed on January 23<sup>rd</sup>, 2007 (see Picture 3 in Appendix A). The casing was removed and taken to a machine shop for retrofit of stainless steel screen to ensure that this does not occur again.



**Figure 5**

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## Appendix A – Pictures of Rattling Brook RTWQ Station



**Picture 1: Rattling Brook below Bridge RTWQ Station Location**



**Picture 2: Hydrometric Hut at Rattling Brook below Bridge**



**Picture 3: Alga/plant material that was found intertwined on the Datasonde when instrument was removed on January 23<sup>rd</sup>, 2007**

